

# Glyphosate causes cancer and birth defects

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An Open Letter from America was sent on 11 November 2014, warning countries in Europe and EU regulators not to authorize GM crops because of the devastating effects on human health and the environment. David Cameron ignored that advice on behalf of England. He and Defra concealed the letter from the British public. The European Commission and the European Food Safety Authority ignored it as well and have continued to approve GM Crops for growing and for food and feed in the EU. Defra dismissed the complaints of Crop-sprayed rural residents in the UK of ill health: cancers, neurological conditions, allergies etc. just as the Argentinian Government dismissed the health complaints of rural communities in Crop-sprayed towns. In their re-assessment the RMS, EFSA and the European Glyphosate Task Force excluded papers from Latin America where cancers, birth defects, infertility and DNA changes were shown. Exposure of the brains of unborn and young children in the UK to chemicals is reflected in OECD PISA figures for declining educational achievement in 2013. A 2016 study also shows that in England the young have lower basic skills than their counterparts in Europe. The global élite may be able to survive by eating organic food, but not by the pollution of water, soil and air by genotoxic and teratogenic herbicides, insecticides and other industrial chemicals. Governments and Regulators only measure a small fraction of them. The agrochemical industry has created a toxic environment from which none can escape. The devastating effects of these silent killers in our environment do not distinguish between farmers or city dwellers, the wealthy or the poor, between media moguls, editors or their reporters, Monsanto or Syngenta Executives, Prime Ministers or Presidents. Many people in the UK are no longer reaching the biblical age of three-score-years-and ten because they are dying of cancers.

Humans and  
the  
environment  
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# **Glyphosate causes cancer and birth defects**

## **Humans are being poisoned by thousands of untested and unmeasured chemicals**

**Here is a Letter from America that proves that the European Food Safety Authority, the European Commission, the British Government and Defra are colluding with the Agrochemical Industry**

**The Open Letter from America<sup>1</sup>** was from 60 million American citizens to David Cameron (and the rest of the EU) warning them not to authorize GM crops because of the devastating effects on human health and the environment. It was delivered to 10 Downing Street on 11 November 2014.<sup>2</sup>

*"In our country, GM crops account for about half of harvested cropland. Around 94% of the soy, 93% of corn (maize) and 96% of cotton grown is GM. The UK and the rest of the EU have yet to adopt GM crops in the way that we have, but you are currently under tremendous pressure from governments, biotech lobbyists, and large corporations to adopt what we now regard as a failing agricultural technology...Studies of animals fed GM foods and/or glyphosate, however, show worrying trends including damage to vital organs like the liver and kidneys, damage to gut tissues and gut flora, immune system disruption, reproductive abnormalities, and even tumors.<sup>35</sup>...These scientific studies point to potentially serious human health problems that could not have been anticipated when our country first embraced GMOs, and yet they continue to be ignored by those who should be protecting us. Instead our regulators rely on outdated studies and other information funded and supplied by biotech companies that, not surprisingly, dismiss all health concerns.*

***Through our experience we have come to understand that the genetic engineering of food has never really been about public good, or feeding the hungry, or supporting our farmers. Nor is it about consumer choice. Instead it is about private, corporate control of the food system. Americans are reaping the detrimental impacts of this risky and unproven agricultural technology. EU countries should take note: there are no benefits from GM crops great enough to offset these impacts. Officials who continue to ignore this fact are guilty of a gross dereliction of duty."*** Most of the countries in the EU took that advice and opted out of GM (including Scotland, Wales and Ireland).

**David Cameron ignored that advice on behalf of England. He and Defra concealed the letter from the British public. The European Commission and the European Food Safety Authority also ignored it and continued to approve GM Crops for growing and for food and feed in the EU.** This was despite these grave warnings from American citizens of their experiences (Living with GMOs) and from independent organisations in Europe, such as Testbiotech (Germany), CRIIGEN (France), Corporate Europe Observatory, Earth Open Source and Pesticides Action Network.

**Gottfried Glöckner and Gilles-Éric Séralini have published new scientific data on Bt toxins and a thorough study of the records show that this GMO Bt maize is most probably toxic over the long term.<sup>3</sup> Pathology reports on the first cows fed with Bt176 maize (1997–2002)**

*"Over the years, and coinciding with regular increases in GMO content of the diet (0–40%), the proportion of healthy cows with high milk yield diminished from 70% (normal rate) to only 40%. At the peak of mortalities in 2002, 10% of the cows died, preceded by a long-lasting paresis syndrome without hypocalcemia or fever, but with kidney biochemical failure and mucosa or epithelial problems."* The only toxicological test, before being commercialized, was conducted by Novartis

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<sup>1</sup> [www.theletterfromamerica.org](http://www.theletterfromamerica.org)

<sup>2</sup> [https://twitter.com/beyond\\_gm/status/532224079605288960](https://twitter.com/beyond_gm/status/532224079605288960)

<sup>3</sup> <http://scholarly-journals.com/sjas/archive/2016/January/pdf/Gl%C3%B6ckner%20and%20S%C3%A9ralini.pdf>

(subsequently Syngenta) in the United States, and consisted of feeding 4 cows for 15 days; one cow died after a week. This was the GM maize Bt176, which produced an insecticidal Bt toxin and contained an antibiotic resistance marker gene. Prof Séralini had access to the veterinary records as well as the farmer's archives.

Syngenta (Germany)<sup>4</sup> was subsequently charged with lying; they had never informed Glöckner about the outcome of their US study nor of numerous other dangers from feeding with Bt176 corn that were already known to them. They were legally obliged to do so and because they did not do so, the company is liable for the destruction of Glöckner's 65 cows.

### **Why did the Glyphosate Task Force exclude papers from Argentina and Paraguay?**

Glyphosate was reassessed in Europe by the German Rapporteur Member State BfR and EFSA and was given clearance by them both. EFSA Executive Director Bernhard Url wrote to Prof Christopher Portier<sup>5</sup> explaining why EFSA did not accept that glyphosate is carcinogenic in humans therefore EFSA intends advising the European Commission to renew its licence. In that letter he said that the EFSA process was "open and transparent". However, in view of the above revelation that EFSA and the EU Commission received the Open Letter from America but ignored it and continued to approve GM crops after that date, does EFSA still maintain that stance?

## **Cancers and birth defects in Latin America/US associated with glyphosate**

The Journal of Biological Physics and Chemistry published a whole issue on the subject of glyphosate.<sup>6</sup> (Issue 3 2015)

The authors of the scientific articles are from Norway, South America, France, America and the author of the Forum is from Britain.

Dr M. Ávila-Vázquez is a neonatal physician belonging to an organisation called the Physicians of Crop Sprayed towns of Argentina. Their first meeting was held in 2010<sup>7</sup> and they have just had their third.

Their first meeting reported: *"That the processes of soyization, monoculture, direct sowing, intense farming ... have affected our natural co-existence in the following order: Health: Reduction in the average age and height in crop-sprayed towns due to malnutrition, and a decrease of the body's natural defenses. Birth defects, mutagenesis, miscarriages, depression and suicide, disorders of the central nervous system and other neurological pathologies; disabilities, spina bifida, lupus, leukemia and other types of cancers; chloracne and other skin problems; asthma, allergies, and other respiratory and lung-related problems; male sterility and impotence; hormonal disruption and other hormonal disorders; diminished childhood development; prolonged febrile syndrome without focus; children's increased vulnerability to pollutants; anemia, multiple sclerosis, cerebral ischemia, death."*

### **Advertising the Argentinian 3<sup>rd</sup> National Conference of Physicians of Crop Sprayed towns 2015<sup>8</sup>**

The Pre-conference flyer stated: *"Gradually, physicians working in those towns have joined in that claim, affirming that their patients are becoming ill with cancer, as well as endocrine, immune and reproductive disorders, in new ways that did not exist before sprayings, a common practise related to GM crops.*

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<sup>4</sup> <http://www.gmwatch.org/latest-listing/1-news-items/13926-syngenta-charged-with-lying-over-cattle-deaths>

<sup>5</sup> [http://www.efsa.europa.eu/sites/default/files/EFSA\\_response\\_Prof\\_Portier.pdf](http://www.efsa.europa.eu/sites/default/files/EFSA_response_Prof_Portier.pdf)

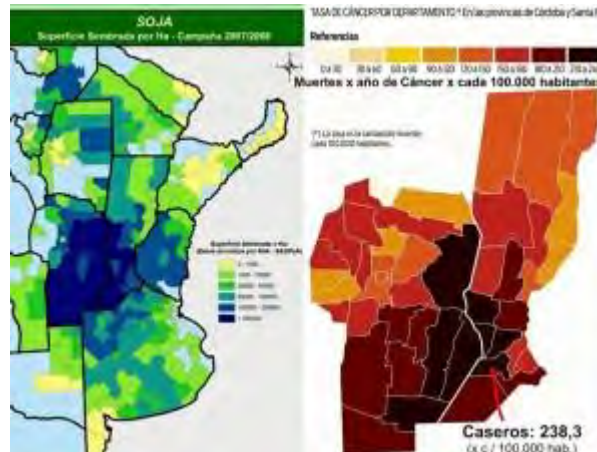
<sup>6</sup> <http://www.amsi.ge/jbpc/31515/jbpc31515.html>

<sup>7</sup>

[http://www.agrarkoordination.de/fileadmin/dateiupload/Roundup\\_Co/INGLES\\_Report\\_from\\_the\\_1st\\_National\\_Meeting\\_Of\\_Physicians\\_In\\_The\\_Crop-Sprayed\\_Towns\\_2\\_.pdf](http://www.agrarkoordination.de/fileadmin/dateiupload/Roundup_Co/INGLES_Report_from_the_1st_National_Meeting_Of_Physicians_In_The_Crop-Sprayed_Towns_2_.pdf)

<sup>8</sup> <http://www.reduas.com.ar/3rd-national-conference-of-physicians-of-crop-sprayed-towns/>

The system is upheld on the basis of denying and hiding the impact on agricultural health and repeating the claims made by multinational companies (which supply pesticides and transgenic seeds), about the non-toxic nature of their agricultural poisons (for instance, “**you can drink Round Up without any danger**”, and “**glyphosate is like salty water**”.)”



Distribution of crops resistant to glyphosate and distribution of cancer mortality in Córdoba and Santa Fe, according Minagria and provincial Ministry of Health

The paper by Dr Ávila-Vázquez is titled: Cancer and detrimental reproductive effects in an Argentine agricultural community environmentally exposed to glyphosate.<sup>9</sup>

#### Birth defects in seven regions of Argentina

A report of the many types of birth defects in seven geographical areas of Argentina<sup>10</sup> was also excluded from the BfR glyphosate re-assessment (in Spanish, with an English abstract).

*High frequencies regional analysis showed the following significant results:*

*severe hypospadias; spina bifida, microtia, cleft lip with cleft palate, polycystic kidney, postaxial polydactyly and Down syndrome; postaxial polydactyly; omphalocele, gastroschisis, cleft lip without cleft palate, cleft lip with cleft palate, anorectal atresia/stenosis, indeterminate sex, preaxial polydactyly and pectoral agenesis; cleft lip without cleft palate.*

#### Dr Graciela Gomez petitioned the European Union (Commissioner John Dalli 2011) with evidence from independent Argentine, French and British scientists that glyphosate caused birth defects

The review of glyphosate was due to take place in 2012. Soon after the Commission was notified of the latest research showing that glyphosate and Roundup® caused birth defects,<sup>11</sup> it quietly passed a directive delaying the review of glyphosate and 38 other dangerous pesticides until 2015.

The EU Commissioner for Health, John Dalli, resigned on 12/10/2012 after an anti-fraud inquiry linked him to an attempt to influence tobacco legislation. He denied the allegation.

I am indebted to Dr Graciela Gomez for permission to use her two photographs of babies with birth defects. Dr Gomez is an Argentinian lawyer who is defending the rights of the rural communities against Monsanto, other Agrochemical Corporations and the Argentine President.

<sup>9</sup> <http://www.amsi.ge/jbpc/31515/15-3-abs-2.htm>

<sup>10</sup> <http://www.ncbi.nlm.nih.gov/pubmed/21132229> [Births prevalence of 27 selected congenital anomalies in 7 geographic regions of Argentina]. Campaña H et al.

<sup>11</sup> <http://earthopensource.org/earth-open-source-reports/roundup-and-birth-defects-is-the-public-being-kept-in-the-dark/>



A baby with a neural tube defect; this is a meningo-myelocoele. More extensive defects can occur. Hospital de Posadas, Misiones, Argentina. Photograph by kind permission of Dr Graciela Gomez.



Julieta, who died aged 7 months from multiple abnormalities in 2010  
Bandera Santiago del Estero  
Photograph by kind permission of Dr Graciela Gomez.

### **Direct application of Roundup® to water should be avoided**

Glyphosate was used for 3 years in rivers in Washington State (Legal Status of Noxious Weeds<sup>12</sup>). However, in 1996 the Attorney General of the State of New York Consumer Frauds and Protection Bureau, Environmental Protection Bureau had convicted Monsanto for false advertising with regard to the safety of Roundup® herbicide, including its use in water. Monsanto's claims contradicted the following statements required on the EPA-approved label for Roundup® at the time the claims were made: ENVIRONMENTAL HAZARDS Avoid direct application to any body of water.<sup>13</sup>

### **In the US, Benton County's 3-year control of river weeds; is it linked to the fatal birth defect anencephaly?**

Washington State has a Noxious Weed Control Board and glyphosate is the main herbicide recommended for noxious weed eradication. Benton County Herbicide treatment started in the Yakima River in 2010 and continued for 3 years without monitoring glyphosate levels in water.<sup>14</sup> Three Washington Counties (Yakima, Benton and Franklin) sharing the same irrigation water for agriculture, reported a high number of pregnancies resulting in a fatal birth defect, anencephaly.<sup>15</sup> The cause was 'a mystery' to state health officials.<sup>16</sup> (See next page)

<sup>12</sup> <http://agr.wa.gov/plantsinsects/weeds/npdespermits/docs/IPMFreshwaterEmergentNoxiousQuarantineListedWeeds.pdf>

<sup>13</sup> <http://www.mindfully.org/Pesticide/Monsanto-v-AGNYnov96.htm>

<sup>14</sup>

<http://agr.wa.gov/plantsinsects/weeds/npdespermits/docs/IPMFreshwaterEmergentNoxiousQuarantineListedWeeds.pdf>

<sup>15</sup> <http://farmwars.info/?p=11137>

<sup>16</sup> <http://abcnews.go.com/Health/washington-state-health-officials-stumped-high-rate-birth/story?id=19687592>



Barbara Peterson (Farmwars) gave permission to use her illustration of the use of glyphosate in the Yakima Valley, Washington County

**Microcephaly in newborn babies in Brazil is allegedly due to the Zika virus: physicians from Argentina and Brazil say it is from a new chemical larvicide 'pyroproxyfen' used to kill mosquitoes**  
 The Physicians of Crop-Sprayed Towns of Argentina's Report about the origins of microcephaly:<sup>17</sup>  
*"...they fail to recognise that in the area where most sick persons live, a chemical larvicide producing malformations in mosquitoes has been applied for 18 months, and that this poison (pyroproxyfen) is applied by the State on drinking water used by the affected population."*

Pyroproxyfen is a chemical growth regulator of insect larvae produced by Sumitomo, a Japanese subsidiary of Monsanto. It must also stunt the growth of human embryos. The Physicians of Argentina's Report continues: *"this strategy is in fact a commercial manoeuvre from the chemical poisons industry, deeply integrated into Latin American ministries of health as well as WHO and PAHO.*

*Massive spreading using planes, as the governments of Mercosur are considering, is criminal, useless, and a political manoeuvre to simulate that actions are taken. The basis of the progress of the disease lies in inequality and poverty, and the best defence are community-based actions. The last strategy deployed in Brazil, and which might be replicated in all our countries, is the use of **GM mosquitoes** — a total failure, except for the company supplying mosquitoes," Oxitec, from Oxford, UK.*

## **A brief history of farming in Britain with increasing pesticide usage**

**Rothamsted Research is the longest running agricultural research station in the world**

When UK Rothamsted was founded in 1843, it was an enormous tragedy that the philanthropist John Bennet Laws, owner of the Rothamsted Estate appointed a **chemist** as his scientific collaborator. This set the pattern for farming in the UK: to rely totally on the agrochemical industry and the input of chemicals. Rothamsted developed the first chemical herbicide 2,4-D during World War II at British Rothamsted Experimental Station (at the same time as in the US) by Judah Hirsch

<sup>17</sup> [http://www.reduas.com.ar/wp-content/uploads/downloads/2016/02/Informe-Zika-de-Reduas\\_TRAD.pdf](http://www.reduas.com.ar/wp-content/uploads/downloads/2016/02/Informe-Zika-de-Reduas_TRAD.pdf)

Quastel and sold commercially in 1946.<sup>18</sup> *'The low cost of 2,4-D has led to continued usage today and it remains one of the most commonly used herbicides in the world.'* However, on 23/06/2015, WHO International Agency for Research on Cancer classified 2,4-D as a Group 2B carcinogen (possibly carcinogenic to humans).<sup>19</sup> There was strong evidence that 2,4-D induces oxidative stress that can operate in humans and moderate evidence the 2,4-D causes immunosuppression, based on in-vivo and in-vitro studies.<sup>20</sup>

### **Nature Conservancy Council (NCC) exposed DDT and Dieldrin as the cause of raptor declines**

A review of *Pesticides and Birds* published in 1965 by the Head of the NCC's Pesticide Monitoring Unit at Monks Wood Experimental Station stated that 200 chemicals were being used by farmers and were having a devastating effect on birds. The post-war crash in raptor populations was finally linked to the new organochlorine pesticides, DDT and dieldrin. [N.B. The neonicotinoid insecticide clothianidin is 10,800 more toxic to bees, dose for dose, than DDT was in 1945<sup>21</sup>]. The UK Advisory Committee on Pesticides was persuaded to bring in successive restrictions on their use, first in 1962, and then extended to 1964. Only finally, 20 years later, in 1982, EU regulations required a formal ban on all the organo-chlorine pesticides except lindane. Although restrictions on the use of DDT and dieldrin were put in place in 1962, the organochlorine compounds were not fully banned in the EU until 1982.

### **Even in the 1970s the Agricultural Industry was given massive power by the British Government**

Robert van den Bosch, writing in 1978 in *The Pesticide Conspiracy*:<sup>22</sup> "If one considers how dangerous these chemicals are, one would suppose that it would be Government policy to minimize their use by every possible means. However the Royal Commission on Environmental Pollution notes, *'there is... no such policy in the UK, nor does the possible need for it appear to have been considered, notwithstanding the great increases in the use of these chemicals.'*

The Agrochemical Industry, on the contrary, seems to be under the impression it is Government policy to encourage the maximum use of pesticides. Thus according to the Agrochemical industry, of 367,000 acres of potatoes grown in this country in 1976, 310,000 acres are treated with herbicides, 114,000 acres with granular insecticides and nematocides, 218,000 acres with foliar insecticides and 265,000 acres with fungicides.<sup>23</sup> In this way one acre of potatoes, the industry boasts, can be treated from 2-11 times with different pesticides." Van den Bosch also condemns the UK for aerial spraying. *"What is particularly shameful in this country is the prevalence of aerial spraying. One million acres of agricultural land are sprayed each year, which involves 34,000 flights. Controls on this practice are practically non-existent...nor as the Royal Commission points out, does there appear to be any controls on the type of spraying equipment."*

### **In 1999 Marc Lappé and Britt Bailey published a book about the Genetic Transformation of Global Agriculture: *Against the Grain* that predicted the future remarkably accurately**

Professor of Food Policy at Thames Valley University Tim Lang provided the foreword. *"Against the Grain challenges this abrupt transformation of food crops as an experiment inadequately designed and incompletely tested. The authors show these new methods to be far from fail-safe or risk-free. They raise disturbing issues of failed government oversight and an industry underestimating or ignoring potential dangers in its rush to exploit new technologies"*<sup>24</sup>. *"Chemical companies that make*

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<sup>18</sup> <http://www.rothamsted.ac.uk/about>

<sup>19</sup> [http://www.thelancet.com/pdfs/journals/lanonc/PIIS1470-2045\(15\)00081-9.pdf](http://www.thelancet.com/pdfs/journals/lanonc/PIIS1470-2045(15)00081-9.pdf)

<sup>20</sup> [http://www.iarc.fr/en/media-centre/pr/2015/pdfs/pr236\\_E.pdf](http://www.iarc.fr/en/media-centre/pr/2015/pdfs/pr236_E.pdf)

<sup>21</sup> My thanks to Dr Jean-Marc Bonmatin Centre, National de la Recherche Scientifique, Orleans, France for allowing me to quote from his slide on the relative toxicities to bees of the neonicotinoid insecticides to DDT.

<sup>22</sup> Van den Bosch, R. *The Pesticide Conspiracy*: USA Doubleday & Company (1978): Dorchester, UK: Prism Press (1980).

<sup>23</sup> Industry's Statistics: British Agrochemical Association London 1976

<sup>24</sup> Lappé, M. & Bailey, B. *Against the Grain: The Genetic Transformation of Global Agriculture*. London, Earthscan Publications Ltd. 1999.



*agricultural herbicides know that as transgenic plantings increase, so will the need for their herbicides...*” They predicted that massive use of herbicides might lead to major health or ecosystem changes.

Sixteen years later all their predictions have come true! In the US the total herbicide volume applied to GM Corn, Cotton and Soybeans increased from 240,500,000 lbs/year in 1994 to 301,000,000 lbs/year in 2010.<sup>25</sup> In a recent paper, Benbrook says glyphosate use (x 1,000kg) has increased from 634 in 1974 to 125,384 in 2014. Two thirds of that has been sprayed in the last 10 years.<sup>26</sup>

With regard to Roundup®/glyphosate being a ‘safe’ herbicide; Lappé & Bailey point out that ‘inerts’ polyethyloxyated tallow amine (POEA) surfactants which spread the glyphosate evenly over the plant have a toxicity of their own. They ask: *“Why engineer soybean? Given its remarkable nitrogen-fixing activity and its natural competitive advantage over weeds, why was it necessary to change its genetic capabilities so radically to tolerate herbicide application? The answer it turns out to be “enormous profit margins.”*

*“Monsanto’s conclusion that the enzyme glyphosate poisons, known as EPSPS for short, shikimate pathway means that glyphosate is only toxic to plants but not to other living species, including mammals is, in our opinion, simply wrong... Hence a genetically-engineered plant may have altered amounts of critical amino-acids in its edible portion.”*

In December 2005, UK’s Natural Environment Research Council (NERC)<sup>27</sup> in response to a budget deficit announced the closure of its wildlife research centres, with the loss of about 200 jobs.<sup>28</sup> This decision was opposed by 99% of 1,327 stakeholders. In a leaked letter to Tony Blair, the junior Rural Affairs Minister said that closure of four eco-laboratories involved in Climate Change research *“does not make sense either scientifically or economically.”* In a debate forced in the House of Lords, Lord Sainsbury of Turville, at that time the Parliamentary Under-secretary of State with responsibility for Science and Innovation at the DTI, defended the closures. He claimed that the Government believed that *“decisions about its scientific programme should be taken by NERC’s independent Council.”* Lord Sainsbury praised NERC for *“grasping the nettle”*. He said that NERC had seen a fall in contract research in recent years and the Wildlife stations were not making enough money from getting private research contracts. Closure took place in March 2006. Monks Wood Experimental Station hosted BBC’s Spring Watch, pioneered work on DDT and other pesticides in the 1960s,<sup>29</sup> and more recently revealed how climate change is affecting wildlife, with spring arriving three weeks earlier. The research centres were also involved in assessing the impacts of GM (genetically modified) crops on wildlife, with findings contradicting industry claims that no harm would be caused.

#### **UK’s Natural Environment Research Council (NERC) announced Globolakes**

In 2012 NERC (the body that as the result of a budget deficit in 2006 closed the Wildlife Research Sites) proudly announced its *GloboLakes* project,<sup>30</sup> *“the first satellite-based global lake surveillance system, to monitor how lakes and reservoirs are being affected by environmental change.”* How can one measure pesticide levels in aquatic systems, or biodiversity declines, from space?

#### **In 1980, farmers started pre-harvest spraying of glyphosate on crops and on grassland: the crop spraying continues to this day so we have increasing herbicide residues in our staple foods**

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<sup>25</sup> <http://www.motherjones.com/tom-philpott/2014/01/usda-prepares-greenlight-chemical-war-weeds>

<sup>26</sup> <http://enveurope.springeropen.com/articles/10.1186/s12302-016-0070-0>

<sup>27</sup> The same organisation that had jointly published A Nature Conservation Review in 1977 with the NCC

<sup>28</sup> “Anger as top wildlife research sites are axed”, Archived press release, Friends of the Earth, 13 March 2006,

[http://www.foe.co.uk/resource/press\\_releases/anger\\_as\\_top\\_wildlife\\_rese\\_13032006](http://www.foe.co.uk/resource/press_releases/anger_as_top_wildlife_rese_13032006)

<sup>29</sup> Monks Wood had its own Toxic Chemicals and Wildlife Research Team

<sup>30</sup> <http://www.globolakes.ac.uk/> *GloboLakes* will analyse 20 years of data from more than 1000 large lakes across the globe to determine ‘what controls the differential sensitivity of lakes to environmental perturbation’.

However, it was not until 2000 that Defra started to publish pesticides residues found in food (claiming from Maximum Residue Levels (MRLs) set by EFSA that they were “safe for human health”) However, it should be noted that EFSA readily agreed to requests from corporations to raise MRLs.

In 2004 atrazine and simazine were banned in the EU but Defra allowed Syngenta to continue to sell them until 2008, when the Environment Agency found the atrazine levels above the EU limits were present at 25% of monitoring sites, and in one place it was 130 times the EU limit.<sup>31</sup> The Wildlife Research sites were closed down in 2006. Monks Wood had a Toxic Chemicals Unit (which had exposed DDT and dieldrin as being poisonous to raptors by causing egg shell thinning) and its policy on GM was contrary to that of the Agrochemical Corporations, which said GMs caused no harm. The Royal Commission on Environmental Pollution (RCEP) was created under Royal Warrant in 1970 to advise the Queen, Government, Parliament and the public on environmental issues. As a result of its objections to aerial spraying, and criticisms of Defra and the Government in its Report on Crop Spraying and the Health of Residents and Bystanders,<sup>32</sup> the RCEP was closed down.

When the EC published its Directive on the Sustainable Use of Pesticides 21 October 2009:  
DIRECTIVE 2009/128/EC OF THE EUROPEAN PARLIAMENT

Article 9 EU Advice: “Aerial spraying of pesticides has the potential to cause significant adverse impacts on human health and the environment, in particular from spray drift. Therefore aerial spraying should generally be prohibited. The UK Government response: We do not consider that responsible application of pesticides by aerial spraying poses an unacceptable risk to human health and the environment, and consequently we will use the derogation.”<sup>33</sup> Aerial spraying of pesticides still continues, including bracken spraying.

The Advisory Committee on Pesticides (ACP) was abolished in March 2015 and the Expert Committee on Pesticides (ECP) replaced it.<sup>34</sup> The ECP was launched on 27 March 2015...just in time for the May 2015 meeting when Syngenta and Bayer would be invited to provide ‘vital input’ to the National Farmers’ Union’s (NFU) request to discuss the “*emergency lifting of the EU moratorium on systemic neonicotinoid insecticides for oil seed rape.*” There was a delay on publication of these minutes.<sup>35</sup> Industry representatives explained to the ECP meeting “*that 79% of the oilseed rape crop was under threat or severe risk from cabbage stem flea beetle and aphids. They explained that failure to control these pests could result in significant impacts on yields. For example a significant presence of Turnip Yellow Virus could reduce yields by 6-12%. ‘High levels’ of infestation were being reported*”. They also outlined how the difficulty of bringing new products to the EU market meant it was unlikely that alternative pesticides would be available.

**In contrast, Italy’s partial ban on systemic neonicotinoid insecticides in 2008 was successful**

At a Beekeeping Conference held in Guelph University, Ontario on 12 August 2015,<sup>36</sup> Prof Franco Mutinelli said Italy instituted a partial ban on neonicotinoids in 2008 and it has been extended each year since. No active substances are allowed in seed coatings and the use of neonicotinoids is restricted to specific cases. “*It’s been effective*”, he said. “*After the ban there has been strong improvement. The effect of the ban was immediate.*” He said corn producers were worried about losing crop yield to disease, “*but that didn’t happen,*” he said. “*The ban has been now seven years and crop yield is within the expected range.*”

Christian Krupke’s (University of Purdue) bee research indicates that the benefit of neonicotinoid treatment to corn seeds only lasts two weeks. Then it washes away with the water and seeps into

<sup>31</sup> <http://nora.nerc.ac.uk/14557/1/OR11013.pdf>

<sup>32</sup> <http://www.rcep.org.uk/reports/sr-2006-cropspraying/documents/RCEP-crop-spraying.pdf>

<sup>33</sup> <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0128>

<sup>34</sup> <https://www.gov.uk/government/organisations/advisory-committee-on-pesticides>

<sup>35</sup> <http://www.theguardian.com/environment/2015/jul/29/bee-harming-pesticide-firms-took-part-key-meeting-ban>

<sup>36</sup> <http://www.guelphmercury.com/news-story/5795639-italy-s-ban-on-neonicotinoids-effective-u-of-g-conference-told/>

the soil. Further, he said the pests the neonicotinoids are supposed to fend off are not present in the majority of farms. But they are really toxic to honey bees, he said. "*The benefit of the seed treatments is hard to justify*," he said. "*We know the status quo just doesn't work.*"

### **Pan-European epidemiological study on honeybee colony losses EPILOBEE 2012-2014<sup>37</sup>**

The second and final Report of the pan-European epidemiological study on honeybee colony losses (EPILOBEE 2012-2014) that had been prepared by the EU reference laboratory for bee health was published. The objective of the two-year programme was to get a state of play of honeybee colony losses on a harmonised basis in each of the participating Member States. This landmark study has revealed the UK is suffering one of the worst rates of honeybee colony deaths in Europe.<sup>38</sup> In the cold winter of 2012-13, 29% of honeybee colonies in the UK died, with only Belgium suffering a higher rate of losses (34%) of the 17 countries surveyed. By contrast, only 5% of colonies in Italy were lost. Not satisfied with this as proof that neonicotinoids are harmful to bees, Defra, Bayer and Syngenta insisted that a prospective study must be done.

### **The plight of the honeybee from the US EPA: it is now being poisoned by industry in the UK**

E.P. Vallianatos wrote about his 25 years working for the US EPA: "*In my 25-year experience at the US EPA, nothing illustrated the deleterious nature of "pesticides" and "regulation" better than the plight of honeybees.*<sup>39</sup> *Here is a beneficial insect pollinating a third of America's crops, especially fruits and vegetables, and we thank it with stupefying killing. Poisoning of honeybees became routine in the mid-1970s with the EPA's approval of neurotoxins encapsulated in dust-size particles that took days to release their deadly gas. Some of my EPA colleagues denounced such misuse of science and public trust. They told their bosses those encapsulated neurotoxins were weapon-like biocides that should have no standing in agriculture and pest management. Indeed, one of those EPA ecologists discovered the neurotoxic plastic spheres in the honeybee queens' gut. This meant poison in the honey. EPA acted with fury. It forced the scientist out of his laboratory and into paper pushing in Washington. Approval of the industry's neurotoxins expanded to cover most major crops. This meant honeybees had less and less space to search for food without dying.*

*The blowback of this almost criminal policy is the massive death of honeybees all over the country. Government officials and industry executives cooked up an obscure name, "colony collapse disorder," to cover up the pesticide killers of the honeybees."*

### **ADAS recommended pre-harvest crop spraying with Roundup® in 1980<sup>40</sup> and spraying on grassland in 1985. Researches showed two Monsanto scientists wrote the first papers (without declaring it)**

In 1980 UK ADAS<sup>41</sup> (at that time the science and advisory branch of Ministry of Agriculture, Fisheries and Food (MAFF) but now privatised) was recommending that arable farmers use pre-harvest application of glyphosate on cereal crops. M.G. O'Keeffe, a Monsanto scientist<sup>42</sup> wrote three articles about it, the first at a Crop Protection conference.<sup>43</sup> They do not appear to have been peer-reviewed. By 1985 ADAS was advocating the use of glyphosate on grassland. They declared it to be

<sup>37</sup> [http://ec.europa.eu/food/animals/live\\_animals/bees/study\\_on\\_mortality/index\\_en.htm](http://ec.europa.eu/food/animals/live_animals/bees/study_on_mortality/index_en.htm)

<sup>38</sup> <http://www.theguardian.com/environment/2014/apr/07/britain-honey-bee-colony-deaths-worst-europe-study>

<sup>39</sup> [http://www.huffingtonpost.com/evaggelos-vallianatos/honeybees-on-the-verge-of\\_b\\_4326226.html](http://www.huffingtonpost.com/evaggelos-vallianatos/honeybees-on-the-verge-of_b_4326226.html)

<sup>40</sup> <http://www.hgca.com/media/185527/is02-pre-harvest-glyphosate-application-to-wheat-and-barley.pdf>

<sup>41</sup> ADAS is now the UK's largest independent provider of agricultural and environmental consultancy, rural development services and policy advice; formerly a branch of Ministry of Agriculture, Fisheries & Food. (MAFF)

<sup>42</sup>

[https://books.google.co.uk/books?id=objYBAAAQBAJ&pg=PA555&lpg=PA555&dq=Monsanto+O%27Keeffe+MG&source=bl&ots=3k7GWMRWZ3&sig=wg0ZhiNFMTY86cNp\\_cp3jv4Dz3A&hl=en&sa=X&ei=Twz-VPmWA8mBU93GgggP&ved=0CEkQ6AEwBg#v=onepage&q=Monsanto%20O'Keeffe%20MG&f=false](https://books.google.co.uk/books?id=objYBAAAQBAJ&pg=PA555&lpg=PA555&dq=Monsanto+O%27Keeffe+MG&source=bl&ots=3k7GWMRWZ3&sig=wg0ZhiNFMTY86cNp_cp3jv4Dz3A&hl=en&sa=X&ei=Twz-VPmWA8mBU93GgggP&ved=0CEkQ6AEwBg#v=onepage&q=Monsanto%20O'Keeffe%20MG&f=false) Chemical

Manipulation of Crop Growth and Development Proceedings of Previous Easter Schools in Agricultural Science by J. S. McLaren

<sup>43</sup> O'Keeffe MG. The control of Agropyron repens and broad-leaved weeds pre-harvest of wheat and barley with the isopropylamine salt of glyphosate; 1980. pp. 53–60. Proceedings of British Crop Protection Conference-Weeds.

good practice to graze the grass or preserve it as hay or silage after treatment.<sup>44</sup> However, the main author of the paper was another Monsanto scientist, Colin D Stride.<sup>45</sup> He later joined Exponent®, a firm which provides services for industry, governments and for EU regulatory bodies.<sup>46</sup>

In a 4-month project starting in the UK in January 2007: Pre-harvest glyphosate for weed control and as a harvest aid in cereals<sup>47</sup> the authors stated in their introduction:

*“Concern over residues, as expressed by the Food Safety Authority Report, appears to relate to the incidence of residues rather than to the levels of the residues. Data from Monsanto and Cessna et al. (1994 & 2002) suggest that the level of residues is associated with dose but that even the lower doses used for harvest aid will leave detectable levels at harvest. Hence, any initiative to reduce the incidence of residues must be to reduce the proportion of the crop sprayed rather than to reduce the dose of the individual applications.”* However, they do not appear to have performed any glyphosate residue measurements.

### **Glyphosate is used for ripening sugar cane ‘to increase the sucrose content’**

In the US and Latin America, glyphosate is used to ripen sugar cane.<sup>48</sup> *“Chemical ripening of sugar cane is an important component to profitable sugar production in the United States as well as other sugar cane industries throughout the world.”* But the price paid for sugar cane to be profitable to the corporations is an alarming increase in renal failure in young male agriculture workers in Louisiana and South America. Louisiana’s death rate per 100,000 from nephritis/kidney disease is 26.34 per 100,000 as compared with a US rate of 14.55.<sup>49</sup>

Costa Rica has a similar pattern of chronic renal disease.<sup>50</sup> In 2005 Cerdas reported that: *“in the north part of the country, in Guanacaste, in the last five years there has been an epidemic of chronic renal failure. The demographic features of patients are very interesting. All are young men, between the ages of 20 and 40 years, with a clinical and pathologic picture of chronic interstitial nephritis. The most interesting feature of these patients is epidemiologic—all of them are long-term sugar-cane workers. A specific study of their work environment is needed to determine what in their daily activities puts them at increased risk for chronic renal failure.”*

### **Investigations of chronic kidney disease affecting the sugar cane workers**

The International Consortium of Investigative Journalists (ICIJ) began investigating the epidemics of kidney disease and constructed a map to show the statistics in four Central American countries. *“The disease’s cause remains a mystery. A key contributing factor and potential culprit: dehydration and heat stress from strenuous labor. Researchers also suspect that exposure to an unknown toxin may trigger onset of the disease.”*<sup>51</sup> *“The Costa Rican government has launched a study into the causes of chronic kidney disease in its sugarcane producing northern region...”*

### **Sugar industry has vehemently denied responsibility for deaths from kidney disease**

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<sup>44</sup> Stride CD, Edwards RV, Seddon JC. Sward destruction by application of glyphosate before cutting or grazing; 1985. pp. 771–778. British Crop Protection Conference – Weeds 7B–6.

<sup>45</sup> [http://www.exponent.com/files/Attorney/2f28f368-0f2c-48d0-91c2-60589cce38f1/Presentation/ceExpertCVUpload/stride.c\\_full.pdf](http://www.exponent.com/files/Attorney/2f28f368-0f2c-48d0-91c2-60589cce38f1/Presentation/ceExpertCVUpload/stride.c_full.pdf)

<sup>46</sup> *“Exponent, Inc., a research and scientific consultant firm with clients from industry (including crop protection) and government” Mr. Stride compiles national and zonal dRR format biological assessment dossiers and dRR evaluation dossiers to meet the needs of Regulation 1107/2009 for plant protection products for re-registration at Annex III or new active substances at Annex I. He also provides advice on efficacy and trial programmes; conducts data gap analyses, identifying potential problems and solutions, drafts efficacy protocols to fit EU guidelines and good agronomic practice, and can manage efficacy testing programmes including study monitoring and ensuring reporting standards are high. He also compiles study summaries and tiered dossiers for Biocides in IUCLID5.*

<sup>47</sup> [http://archive.hgca.com/publications/documents/croprosearch/RR65\\_Final\\_Research\\_Review.pdf](http://archive.hgca.com/publications/documents/croprosearch/RR65_Final_Research_Review.pdf)

<sup>48</sup> <http://dx.doi.org/10.1614/WS-D-09-00001.1>

<sup>49</sup> Network Coordinating Council (May 2013) 2012 Annual Report: Quoted in Samsel & Seneff

<sup>50</sup> <http://www.nature.com/ki/journal/v68/n97s/full/4496413a.html>

<sup>51</sup> <http://www.icij.org/project/island-widows/thousands-sugar-cane-workers-die-wealthy-nations-stall-solutions>

"Sub-lethal doses of glyphosate are applied by aircraft four to six weeks prior to harvest."

Are the government and the industry aware of this standard practice of ripening?

"...At the same time one of the country's biggest sugar producers said it is revamping its worker health and safety policies.<sup>52</sup> The Costa Rica study will seek to answer one of the thorniest and most politically sensitive questions surrounding what regional health experts call an epidemic: whether the illness should be classified as an occupational disease. Many workers believe the malady is caused by pesticide exposure and working conditions. They have demanded compensation from the sugar industry, which has vehemently denied responsibility."



This map of Central America shows the number of kidney disease deaths in 2009, as well as the increase in mortality rates over the four-year period from 2005-2009 and has been compiled by the International Consortium of Investigative Journalists<sup>53</sup>

"LA ISLA, Nicaragua (The Island of Widows)<sup>54</sup> — Maudiel Martinez is 19 years old and has a shy smile, a tangle of curly black hair and a lean, muscular build shaped by years of work in the sugarcane fields. For most of his adolescence, he was healthy and strong and spent his days chopping tall stalks of cane with his machete. Now Martinez is suffering from a deadly disease that is devastating his community along with scores of others in Central America, where it has decimated the ranks of sugarcane workers. The same illness killed his father and his grandfather and affects all three of his older brothers. "This disease eats our kidneys from inside us," Martinez said. "We don't want to die, and we feel grief because we already know that we're hopeless."

Martinez' illness stands at the heart of a lethal mystery — and legacy of neglect by industry and governments, including the United States, which have resisted pleas for aggressive action to spotlight the malady and find a remedy. Wealthier nations are more focused on spurring biofuels production in the region's sugarcane industry and keeping up the heavy flow of sugar to U.S. consumers and food manufacturers than the plight of those who harvest it.<sup>55</sup>

"Little noticed by the rest of the world, chronic kidney disease (CKD) is cutting a swath through one of the world's poorest populations, along a stretch of Central America's Pacific Coast that spans six countries and nearly 700 miles. Its victims are manual laborers, mostly sugarcane workers."

A growing community of researchers is calling for recognition of a new illness not yet included in medical manuals: "Mesoamerican nephropathy," "endemic agricultural nephropathy" or "sugarcane nephropathy." The director of El Salvador's national CKD program has written of a "Mesoamerican Regional Nephropathy" that would one day be internationally recognized.

<sup>52</sup> <http://www.publicintegrity.org/2012/02/06/8095/costa-rica-study-kidney-disease-afflicting-sugarcane-workers>

<sup>53</sup> <http://www.icij.org/project/island-widows>

<sup>54</sup> <http://www.publicintegrity.org/world/island-widows>

<sup>55</sup> <http://lab.org.uk/thousands-of-sugar-cane-workers-die-as-wealthy-nations-stall-on-solutions>

## UK Defra Expert Committee on Pesticide Residues in Food<sup>56</sup>

### This is why we all have glyphosate residues in our bodies: it is in our staple foods

The results from monitoring of Pesticide Residues in food have been published quarterly since 2000. Bread and breakfast cereals are staple foods but there are no maximum residue limits (MRLs) for bread or cereals. Residues in bread are tested twice a year.

2002 3<sup>rd</sup> Quarter: Comments: *“Residues of chlormequat,<sup>57</sup> glyphosate and pirimiphos-methyl<sup>58</sup> were found (in bread). These pesticides are commonly used on cereal crops, and residues have been found in other cereal products, therefore these findings are not unexpected. None of the residues found were of concern for consumer health.*

2006 3<sup>rd</sup> Quarter: Comments: *“Eating more starchy foods, like bread, is an important part of the Food Standards Agency’s (FSA) advice on healthy eating. The incidence of pesticide residues in bread is relatively high, but our assessment of the risk indicates that the levels we have found in this survey would not be expected to have an effect on health.”*

2007 3<sup>rd</sup> Quarter: Comments: *“Eating more starchy foods, like bread, is an important part of the FSA’s advice on healthy eating. We often find pesticide residues in bread but our assessment of the risk indicates that the levels we have found in this survey would not be expected to have an effect on health. We have asked the Secretariat to write to the Home Grown Cereals Authority about the incidence of residues”. I couldn’t find a reply.*

2011 3<sup>rd</sup>/4<sup>th</sup> Quarters for Lentils: Comments: *Sixteen samples of lentils contained glyphosate above the MRL. A new higher level of glyphosate is expected to come into force in summer 2012. None of the residues detected in this survey would be above the new proposed MRL.”*

In 2007 it was accepted that glyphosate could be used for desiccation of barley and wheat by the brewing and distilling industries.<sup>59</sup> Thus it is probable that men are more likely to be overweight because of the consumption of beer or whisky with glyphosate residues. Many foods imported from the US have GM ingredients and will contain glyphosate (or other herbicide residues). These include products that are made from corn or soya, such as energy bars, sugar drinks; and fruit or vegetables. The US still does not require labelling of GM because corporations have been fighting against it.

### GM foods are not substantially equivalent to non-GM

Animals in the UK are fed with imported GM soya and maize that has been shown by Bohn *et al.*<sup>60</sup> to have marked compositional differences from organic and conventional soya beans (i.e. GM food and feed is not substantially equivalent to non-GM as claimed by the FDA in 1992.)<sup>61</sup>

- Glyphosate tolerant GM soybeans contain high residues of glyphosate and AMPA (mean 3.3 and 5.7 mg/kg, respectively).
- Soybeans from different agricultural practices differ in nutritional quality.
- Organic soybeans showed a more healthy nutritional profile than other soybeans; more sugars, protein, and zinc. Organic soybeans also contained less total saturated fat and total omega-6 fatty acids than both conventional and GM-soy.

*“Using 35 different nutritional and elemental variables to characterise each soy sample, we were able to discriminate GM, conventional and organic soybeans without exception, demonstrating substantial non-equivalence” in compositional characteristics for ‘ready-to-market’ soybeans”*

<sup>56</sup> <http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/PRIF/about-PRIF>

<sup>57</sup> Chlormequat, a plant growth regulator was present consistently throughout.

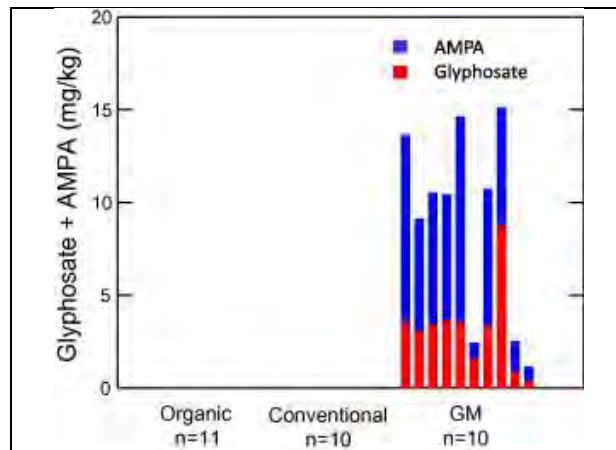
<sup>58</sup> pirimiphos-methyl, is an organophosphate insecticide for use in storage. The approval was revoked on 24/03/2011, but it was only finally banned 31/03/2013, presumably to allow stocks to be used up.

<sup>59</sup> Notes on the use of Roundup® products on malting, milling and seed crops: Monsanto UK Ltd 2007.

<sup>60</sup> <http://www.grainfarmers.co.uk/seeddownloads/Roundup%20on%20seed%20%20milling%20and%20malting.pdf>

<sup>61</sup> <http://www.sciencedirect.com/science/article/pii/S0308814613019201>

<sup>61</sup> <http://www.fas.org/biosecurity/education/dualuse-agriculture/2.-agricultural-biotechnology/us-regulation-of-genetically-engineered-crops.html>



From: Compositional differences in soybeans (Organic, Conventional and GM.) from Iowa, USA. Diagram by kind permission of Professor Thomas Bøhn, Genøk, Centre for Biosafety, Norway.

In a commentary on the paper Bøhn wrote:

**Extreme Levels” of Roundup® in Food Became the Industry Norm:**<sup>62</sup> *“Roundup® Ready GM-soy accumulates residues of glyphosate and aminomethylphosphonic acid (AMPA) and GM soy also differs markedly in nutritional composition compared with soybeans from other agricultural practices. Organic soybean samples also showed a more healthy nutritional profile (e.g. higher in protein and lower in saturated fatty acids) than both industrial conventional and GM soybeans. Lack of data on pesticide residues in major crop plants is a serious gap of knowledge with potential consequences for human and animal health. How is the public to trust a risk assessment system that has overlooked the most obvious risk factor for herbicide tolerant GM crops, i.e. high residue levels of herbicides, for nearly 20 years? If it has been due to lack of understanding, it would be bad. If it is the result of the producer’s power to influence the risk assessment system, it would be worse.”*

#### How many pesticides are being monitored in the UK?

When the CRD Head of Regulatory Policy replied on 28/02/2014 to defend the authorisation of glyphosate, he told me that the capability to detect individual pesticides in food had increased from 150 in 2003 to 393 in 2012. He stated: *“In the 2012 Report, although there were a large number of residues found in bread, none of these were at a level to suggest a risk to consumer health.”* However, he failed to reply to my question as to why EFSA was regularly increasing the Maximum Residue Levels (MRLs) of glyphosate in foods at the request of Monsanto to accommodate their practice of desiccation of crops and to protect their imports into Europe.

#### Soil Association’s campaign NOT IN OUR BREAD<sup>63</sup>: the UK’s position is anomalous

Meeting on 15 July 2015 in London between the Soil Association and a Scientific Panel<sup>64</sup>

The scientific panel included Professor Christopher Portier, one of the co-authors of the World Health Organisation’s International Agency for Research on Cancer (IARC) recent report which determined Glyphosate’s status as a probable carcinogen, who reiterated the IARC’s conclusions, and said: ***“Glyphosate is definitely genotoxic. There is no doubt in my mind.”***

Dr Robin Mesnage of the Department of Medical and Molecular Genetics at Kings College in London, revealed new data analysis showing Round Up®, the most common brand of Glyphosate-based herbicides, is 1,000 times more toxic than Glyphosate alone due to the inclusion of other toxic chemicals in its mix. Claire Robinson, an editor at GMWatch.org gave the international perspective

<sup>62</sup> <http://www.independentsciencenews.org/news/how-extreme-levels-of-roundup-in-food-became-the-industry-norm/>

<sup>63</sup> <http://www.soilassociation.org/notinourbread>

<sup>64</sup> <http://www.soilassociation.org/news/newsstory/articleid/8110/soil-association-calls-for-ban-on-glyphosate-the-world-s-most-widely-sold-weedkiller>

looking at moves by other countries to ban Glyphosate; *“Outside the United Kingdom, the reaction to the WHO IARC report has been dramatic. Some retailers in Switzerland and Germany have removed Glyphosate products and France has committed to do so by 2018 and German states are calling for an EU wide ban. The Danish Working Environment Authority has declared it as a carcinogen and El Salvador and Sri Lanka have banned it and the Colombia government has banned aerial spraying on coca crops.”*

Peter Melchett, Soil Association policy director said; *“If Glyphosate ends up in bread it’s impossible for people to avoid it, unless they are eating organic. On the other hand, farmers could easily choose not to use Glyphosate as a spray on wheat crops – just before they are harvested. This is why the Soil Association is calling for the immediate ending of the use of Glyphosate sprays on wheat destined for use in bread.”*

**British Medical Association (BMA) Science Committee informed me in July 2015 that they did not ‘have the capacity’ to consider the WHO/IARC statement on glyphosate as a 2A carcinogen**

The President of the Portuguese Medical Association, José Manuel Silva, has called for a Global ban on the World’s most used herbicide, Glyphosate, over the many health concerns surrounding the chemical.<sup>65</sup> The International Society of Doctors for the Environment (ISDE) made an Appeal: *“To immediately and permanently ban, with no exceptions, the production, trade and use in all EU territory of glyphosate-based herbicides and the four insecticides assessed by IARC”.*<sup>66</sup>

The BMA stands isolated in Europe and wonders why the UK National Health Service is failing compared with the rest of Europe.

**OECD publication Reviews of Health Care Quality tells the UK that are falling behind the EU**

The OECD publication Reviews of Health Care Quality: United Kingdom 2016 Raising Standards<sup>67</sup> *“The United Kingdom’s health systems have long made the quality of care a high priority, pioneering many tools and policies in this area. Yet despite being a global leader in monitoring and improvement, the United Kingdom does not consistently perform well on international quality benchmarks. Why?”... “Based on international benchmarks of health care quality, notably OECD, some indicators for the UK show average or disappointing performance. Survival estimates for breast cancer, cervical and colorectal cancer, for example, are all below the OECD average...”*

**Quality (not health) issues with crops treated with glyphosate sprayed pre-harvest**<sup>68</sup>

Grain Millers Inc. US had decided they would ban glyphosate-treated oats. [Posted Jan. 29th, 2016 by Brian Cross]. Tyson emphasized that Grain Millers’ decision to avoid glyphosate-treated oats had nothing to do with health issues or food safety concerns. *“Our policy is about functional performance.”* Tyson said Grain Millers began to notice quality issues in its processed oat products four or five years ago. The company first scrutinized its processing systems and then began to look at external factors such as varietal characteristics, fungicide use and chemical applications. It eventually identified a correlation between poor flake and flour quality and the use of glyphosate as a pre-harvest management tool. The correlation was subsequently supported by laboratory analysis of starch quality. *“The early use of glyphosate as a desiccant really doesn’t allow the plant to mature,”* Tyson said. *“It kills the oat plant, and the results are comparable to an early freeze. It doesn’t continue to mature like it would in the swath. That prevents the starch ... from maturing, and immature starch makes poor quality flakes and flour.”* Practices that affect maturation hurt beta glucan production, a key nutritional attribute to the industry’s health claim linking oat consumption

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<sup>65</sup> <http://sustainablepulse.com/2016/02/09/portuguese-medical-association-president-calls-for-global-ban-on-glyphosate/#.Vr81wtCG7wx>

<sup>66</sup> [http://isde.org/Appeal\\_glyphosate\\_IARC.pdf](http://isde.org/Appeal_glyphosate_IARC.pdf)

<sup>67</sup> [http://www.keepeek.com/Digital-Asset-Management/oe.cd/social-issues-migration-health/oe.cd-reviews-of-health-care-quality-united-kingdom-2016\\_9789264239487-en#page19](http://www.keepeek.com/Digital-Asset-Management/oe.cd/social-issues-migration-health/oe.cd-reviews-of-health-care-quality-united-kingdom-2016_9789264239487-en#page19)

<sup>68</sup> <http://www.producer.com/2016/01/grain-millers-inc-firm-on-glyphosate-treated-oats-ban/>



to heart and cardiovascular health. A Scottish distillery changed suppliers from Scotland to France for its barley supply because of quality issues.

### **US Scientists have now found neonicotinoid pesticides in various foods**

Quantitative Analysis of Neonicotinoid Insecticide Residues in Foods: Implication for Dietary Exposures<sup>69</sup>

ABSTRACT: This study quantitatively measured neonicotinoids in various foods that are common to human consumption. All fruit and vegetable samples (except nectarine and tomato) and 90% of honey samples were detected positive for at least one neonicotinoid; 72% of fruits, 45% of vegetables, and 50% of honey samples contained at least two different neonicotinoids in one sample, with imidacloprid having the highest detection rate among all samples. All pollen samples from New Zealand contained multiple neonicotinoids, and five of seven pollens from Massachusetts detected positive for imidacloprid. These results show the prevalence of low-level neonicotinoid residues in fruits, vegetables, and honey that are readily available in the market for human consumption and in the environment where honeybees forage. In light of new reports of toxicological effects in mammals, the results strengthen the importance of assessing dietary neonicotinoid intakes and the potential human health effects.

### **American Bird Conservancy also found neonicotinoids in the US Congress Cafeteria Food** <sup>70</sup>

In two rounds of testing—the first in January and the second in May of 2015—nearly all Congressional cafeteria food tested positive for one or more neonicotinoid insecticide residues. Sixty out of a total of 66 food samples, or 91%, tested positive for the chemicals. Forty-seven (or 71%) of the foods had two or more neonicotinoids. *“These are bee- and bird-killing pesticides.”*

### **We are what we eat**

*“We now live in a world where it is considered beneficial and necessary to spray poison over all our food and to add more poison (dye, preservatives, flavor enhancers, etc) in processing our food. Then we take more poison to counteract the poisons. Beam me up Scotty, the inmates are insane.”*<sup>71</sup>

Dr Nancy Swanson on the history of how corporations have successfully changed the laws in the US to poison our food: 03/04/2014

## **The demolition of nature conservation organisations in Britain**

### **How the UK Government conspired to put the Big Corporations in charge of the Environment**

In 1977 *A Nature Conservation Review* was jointly published by the former Nature Conservancy Council (NCC) and the National Environmental Research Council (NERC), under the Editorship of the late Dr Derek Ratcliffe, Chief Scientist of the NCC.<sup>72</sup> It was an extraordinary *tour de force*. A cornerstone document of nature conservation, this two-volume work was an account of our nation’s heritage of wildlife and its habitats. It documented 735 key sites in Britain that had been selected to represent all the main types of natural and semi-natural vegetation with their characteristic communities of plants and animals. These were described as *“the most important sites that should be conserved to exemplify this rich heritage.”*

His fascinating autobiography *“In Search of Nature”* <sup>73</sup> was published in 2000, five years before he died. For the whole of his professional life, (before he was appointed to the Nature Conservancy as Deputy Science Director and then as Chief Scientist to the newly formed Nature Conservancy

<sup>69</sup> <http://pubs.acs.org/doi/pdf/10.1021/jf501397m>

<sup>70</sup> [http://abcbirds.org/wp-content/uploads/2015/07/CongressionalDiningHallReport\\_July2015.pdf](http://abcbirds.org/wp-content/uploads/2015/07/CongressionalDiningHallReport_July2015.pdf)

<sup>71</sup> <http://www.examiner.com/article/the-poisoning-of-our-food-supply>

<sup>72</sup> Natural Environment Research Council and the Nature Conservancy Council (ed Ratcliffe, D.A.)

*A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain. Vols. 1 & 2.* Cambridge University Press, Cambridge (1977).

<sup>73</sup> Ratcliffe, D.A. *In Search of Nature*. Peregrine Books, Leeds, UK (2000)

Council), he had travelled all over the UK undertaking field studies and he knew intimately most of the sites he wrote about. He became best known when he and other colleagues in wildlife research unravelled, in the manner akin to solving a detective story, the mystery of the post-war crash in raptor populations and the widespread breeding failure of the peregrine falcon. It was finally linked to the new organochlorine pesticides, DDT and dieldrin, that were used on cereals crops. After meticulous comparison work with historic egg collections, the temporal relationship between first exposure of peregrines to DDT contamination and the onset of eggshell thinning gave the final proof. In spite of dispute by the agrochemical companies, the data established that predators were acquiring levels of these pesticides sufficient to cause death on a large scale. He says: “*Despite much prevarication and obscurantism from the agricultural establishment and agrochemical interests*” the UK Advisory Committee on Pesticides (ACP) was persuaded to bring in the successive restrictions on their use, first in 1962, extended in 1964 and finally in 1982 the EU regulations required a formal ban on all the organochlorine pesticides except lindane. As the restrictions on the uses of the chemicals were extended, so the health of raptor populations gradually improved and they were rescued from the brink of extinction.

In the late 1970’s Ratcliffe clashed with the Government again over tax relief for the rich for habitat destruction in the Flow country in Scotland. Fountain Forestry had bought large tracts of land in Sutherland and Caithness at a low price and planted massive blocks of Sitka Spruce. Between 1980 and 1987, 80,000 acres of one of the largest areas of blanket peat land were destroyed. In addition, thousands of miles of drains had been cut into the bogs to improve them for grazing. Peat bogs are natural carbon sinks, so the ecological disaster was further compounded. Bogs are twice as effective as forests at storing carbon and it is estimated that the peat lands in the UK store 3 billion tonnes of carbon. Conversely, when they are damaged by fire, drainage, peat extraction or erosion, the stored CO<sub>2</sub> is released into the atmosphere where it contributes to global carbon emissions.

The Royal Society for the Protection of Birds (RSPB) published a study enumerating the loss of breeding golden plover, greenshank and dunlin from the blanket peat land. Finally in 1987 the NCC published a damning report entitled *Birds, Bogs and Forestry*.<sup>74</sup> Derek Ratcliffe, in combination with his NCC Chairman, the late William Wilkinson, a former banker with a passion for wildlife, fought a vigorous campaign against the afforestation of the Flow Country. Planting was finally halted when the Government stopped giving tax relief for forestry. The RSPB bought up 17,600 acres to create the Forsinard Nature Reserve. More recently they have acquired some of the plantations and now have the mammoth task of removing the land drains and felling thousands of stunted spruces and allowing them to rot down. In 1984, in the middle of this battle, Derek Ratcliffe edited another report, *Nature Conservation in Britain*,<sup>75</sup> describing how in the previous 50 years, agricultural intensification had destroyed 95% lowland grasslands, one third of the hedgerows had been uprooted and half of the lowland fens had been damaged by drainage operations, reclaimed for agriculture or chemically enriched.

### **Margaret Thatcher dismantles the NCC**

The NCC had been a thorn in the flesh of politicians in both England and Scotland and undoubtedly Derek Ratcliffe was their most outspoken and troublesome Civil Servant. Within days of his retirement in 1989, Margaret Thatcher’s then Environment Minister, Nicolas Ridley, set about dividing the NCC into three parts. Scottish politicians were keen on the split; they had greatly resented interference by the English in Fountain Forestry’s project, because it had provided many jobs in an area of low employment.

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<sup>74</sup> <http://jncc.defra.gov.uk/page-4322>

<sup>75</sup> [http://www.foe.co.uk/sites/default/files/downloads/saving\\_wildlife\\_sites\\_1.pdf](http://www.foe.co.uk/sites/default/files/downloads/saving_wildlife_sites_1.pdf)

So, as part of the Environmental Protection Act 1990,<sup>76</sup> in 1991 the Nature Conservancy Council, the UK body that had originally catalogued and designated important Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) for legal protection, was split into three separate bodies: English Nature, Scottish Natural Heritage and the Countryside Council for Wales. Statements issued by two Ministers, Lord Hesketh in England and Malcolm Rifkind in Scotland, claimed that they ‘*wanted to do something for the benefit of conservation*’.

However, a leaked confidential report prepared by the Treasury in 1990 indicated that nature conservation was not intended to be a beneficiary: “*The proposed reorganisation was an administrative reorganisation not intended to affect conservation effort*”. It was pointed out that to triplicate posts in England, Wales and Scotland was a profligate waste of public resources. The net additional benefit to conservation would be close to zero.

Thus began the period in which successive UK governments carried out major (and costly) reorganisations of their environmental bodies that would weaken their power and downgrade them, both in importance and in financial terms. They would lose their own independence and become buried in other departments, which, in times of crisis, would leach money from their budgets.

### **Other actions that would finally eradicate nature conservation from Britain**

In 2001, under Tony Blair’s government, the Department of the Environment was merged with the Ministry of Agriculture, Food and Fisheries to become ‘Defra’ the Department of the Environment, Farming and Rural Affairs, with obvious conflicting interests. In the English regions, there were eight Executive Agencies, four of which were directly involved with farming, and five Key delivery partners. In July 2006, £200m was cut from the Defra budget in England, largely to pay for the major problems that occurred at the Rural Payments Agency, when it failed to cope with the new EU system for Single Farm Payments.

### **Biological Records Centre – A major casualty of Governmental reorganisations**

The Biological Records Centre (BRC) was set up in 1964 and had developed from the *Atlas of British Flora* project. Biological recording has become the cornerstone of the monitoring of biodiversity. Studies of changes in species’ distribution and density provide keys to understanding the mechanisms of global warming, monitoring species’ decline and habitat loss. It is a fundamental tool in measuring the health of the planet. Ultimately, for us as a species, it is the ‘*canary in the cage*’. It had been housed in Monks Wood Experimental Station near Huntingdon. From 1973 onwards it became the Cinderella of every administrative reorganisation. Declines in funding were succeeded by a series of temporary contracts.

## **Chemicals and their impact on human health**

### **We are drowning our world in unsafe and untested chemicals**

The International Federation of Gynecology and Obstetrics (FIGO), a group representing OB-GYNs from 125 countries, released a report detailing the detrimental health effects caused by even small exposure to common chemicals like the ones found in pesticides, plastics, and air pollution.<sup>77</sup> The health problems are even greater for babies exposed in the womb, who face increased risks of cancer, reduced cognitive function, and even miscarriage or stillbirth. The organization cited concerns about the sharp increase over the past four decades in chemical manufacturing, that continues to grow by more than 3 per cent every year. Some 30,000 pounds of chemicals were manufactured or imported for every person in the United States in 2012 alone—a whopping 9.5

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<sup>76</sup> <http://www.legislation.gov.uk/ukpga/1990/43/contents>

<sup>77</sup> [http://www.figo.org/sites/default/files/uploads/News/Final%20PDF\\_8462.pdf](http://www.figo.org/sites/default/files/uploads/News/Final%20PDF_8462.pdf)

trillion pounds in total. Annually, the FIGO authors write, chemical manufacturing leads to 7 million deaths and billions in health care costs.

In an article in the UK about why we should eat organic food,<sup>78</sup> the journalist said that in 31,000 tonnes of chemical are used in farming in the UK each year.

### **The Journal Cortex has just published a special issue on the ‘Neurobehavioural consequences of exposure to industrial, agricultural and environmental chemicals’**

The Editorial states: “There are literally thousands of substances that possess the capacity to do harm in sufficient doses, and pollutants are now widespread in air, water, soil, food, homes, schools and workplaces. It has been estimated that there are over 100,000 toxic substances in commercial use and approximately 2,300 new chemicals developed and submitted for registration every year<sup>79</sup> The capacity of industry to produce chemical substances outstrips research, meaning our knowledge regarding the potential health effects of many substances is limited, giving rise to differences in opinion and controversies regarding safe exposure standards for new and existing substances.”

Zhang et al. (2016)<sup>80</sup> explored the impact of recent pesticide poisoning on neurobehavioural functioning using a case control study of farm workers in China who had been poisoned by pesticides in the previous 12 months. They found that farm workers who reported pesticide poisoning in the previous 12 months showed evidence of reduced neurobehavioral function (psychomotor speed, visual & auditory memory) and increased psychiatric morbidity, but the authors were unable to determine whether this was a result of acute poisoning episodes, or cumulative, low level exposure. Rohlman et al. (2016)<sup>81</sup> undertook a 10-month prospective study of 89 adolescents involved in the application of pesticides to cotton crops in Egypt. Over the course of an application season, they found that participants with high pesticide exposure (indexed by urinary levels of a pesticide metabolite) performed significantly worse than those in the low exposure group on a number of neurobehavioral measures (including psychomotor speed, executive function and attention): a pattern that worsened as cumulative pesticide exposure increased over time.

**In 2007 The Faroes Statement: Human Health Effects of Developmental Exposure to Chemicals in Our Environment:**<sup>82</sup> was published by Grandjean et al. Twenty-five experts in environmental health from eleven countries contributed. “The periods of embryonic, foetal and infant development are remarkably susceptible to environmental hazards. Toxic exposures to chemical pollutants during these windows of increased susceptibility can cause disease and disability in infants, children and across the entire span of human life”.

### **US Kids’ Health Report October 2012**

A Generation in Jeopardy: How pesticides are undermining our children’s health & intelligence.<sup>83</sup>

“This report draws from academic and government research, focusing on studies published within the past five years, to chronicle the emerging threat of – with over 1 billion pounds applied on farms and homes annually– to children’s health.”...“Our current system of industrial agriculture and pest control relies on chemical inputs sold by a handful of corporations. These multinational corporations wield tremendous control over the system, from setting research agendas to financing, crop selection and inputs throughout the production and distribution chain. Not surprisingly, these same corporations also hold significant sway in the policy arena, investing millions of dollars every year to influence voters, lawmakers and regulators at both the state and federal level to protect the market for

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<sup>78</sup> <http://www.theguardian.com/commentisfree/2015/oct/07/why-should-i-eat-organic-google>

<sup>79</sup> <http://www.ncbi.nlm.nih.gov/pubmed/26802911>

<sup>80</sup>

[https://www.researchgate.net/publication/282528744\\_Pesticide\\_poisoning\\_and\\_neurobehavioral\\_function\\_among\\_farm\\_workers\\_in\\_Jiangsu\\_People's\\_Republic\\_of\\_China](https://www.researchgate.net/publication/282528744_Pesticide_poisoning_and_neurobehavioral_function_among_farm_workers_in_Jiangsu_People's_Republic_of_China)

<sup>81</sup> <http://www.ncbi.nlm.nih.gov/pubmed/26687929>

<sup>82</sup> <http://www.ncbi.nlm.nih.gov/pubmed/18226057>

<sup>83</sup> <http://www.panna.org/publication/generation-in-jeopardy>

pesticides. The result is agriculture, food and pest control systems that serve the interests of these corporations well. It does not, however, serve farmers, who have lost day-to-day control of their operations and are putting themselves and their families in harm's way."

### **Only One Chance: How Environmental Pollution Impairs Brain Development<sup>84</sup>**

Prof Philippe Grandjean, Professor of Environmental Health, Harvard University and University of Southern Denmark.

*"Today, one out of every six children suffers from some form of neurodevelopmental abnormality. The causes are mostly unknown. Some environmental chemicals are known to cause brain damage and many more are suspected of it, but few have been tested for such effects. The brain's development is uniquely sensitive to toxic chemicals, and even small deficits may negatively impact our academic achievements, economic success, risk of delinquency, and quality of life. Chemicals such as lead, mercury, polychlorinated biphenyls (PCBs), arsenic, and certain solvents and pesticides pose an insidious threat to the development of the next generation's brains"*<sup>85</sup>

Prof Grandjean's book gives a courageous account of how, over the years, industrial chemicals have damaged children's brains. He describes how each industry has fought to protect its products. The Pesticides Industry is no different. A major human and environmental disaster is upon us.

### **Neurobehavioural effects of developmental toxicity<sup>86</sup>**

*"Neurodevelopmental disabilities, including autism, attention-deficit hyperactivity disorder, dyslexia, and other cognitive impairments, affect millions of children worldwide, and some diagnoses seem to be increasing in frequency. Industrial chemicals that injure the developing brain are among the known causes for this rise in prevalence. Since 2006, epidemiological studies have documented six additional developmental neurotoxicants—manganese, fluoride, chlorpyrifos, dichlorodiphenyl-trichloroethane, tetrachloroethylene, and the polybrominated diphenyl ethers. Pesticides mentioned, each with supporting references, were: Acetamiprid, amitraz, avermectin, emamectin, fipronil (Termidor), glyphosate, hexaconazole, imidacloprid, tetramethylenedisulfotetramine. We postulate that even more neurotoxicants remain undiscovered. Untested chemicals should not be presumed to be safe to brain development, and chemicals in existing use and all new chemicals must therefore be tested for developmental neurotoxicity. To coordinate these efforts and to accelerate translation of science into prevention, we propose the urgent formation of a new international clearinghouse."*<sup>87</sup>

Monsanto challenged the authors' inclusion of glyphosate as a neurotoxicant.<sup>87</sup>

### **Advice from the American Academy of Pediatrics: Council on Environmental Health Policy Statement: Pesticide Exposure in Children<sup>88</sup>**

*Pesticides are a collective term for chemicals intended to kill unwanted insects, plants, molds, and rodents. Children encounter pesticides daily and have unique susceptibilities to their potential toxicity. Acute poisoning risks are clear, and understanding of chronic health implications from both acute and chronic exposure are emerging. Epidemiologic evidence demonstrates associations between early life exposure to pesticides and pediatric cancers, decreased cognitive function, and behavioral problems.*

### **Children in the UK have been exposed to toxic chemicals at home (and at school) from the earliest stage of development *in utero* when their brain is only the size of an insect**

Dr Henk Tennekkes was the first independent researcher to recognise the extreme toxicity of low levels of systemic neonicotinoid insecticides that have become widespread in the environment.<sup>89</sup>

<sup>84</sup> Only one chance: How environmental pollution impairs brain development – and how to protect the brains of the next generation Oxford University Press

<sup>85</sup> <http://braindrains.dk/>

<sup>86</sup> [http://www.thelancet.com/pdfs/journals/laneur/PIIS1474-4422\(13\)70278-3.pdf](http://www.thelancet.com/pdfs/journals/laneur/PIIS1474-4422(13)70278-3.pdf)

<sup>87</sup> Personal communication with authors.

<sup>88</sup> <http://pediatrics.aappublications.org/content/130/6/e1757>

They cause a virtually irreversible blockage of postsynaptic nicotinic acetylcholine receptors (nAChRs) in the central nervous system of insects (to which the human foetus is also exposed). He said the damage is cumulative, and with more exposure more receptors are blocked. He predicts that there may be no safe level of exposure.

Many independent scientists have demonstrated that the neonicotinoid insecticides have effects on the mammalian brain, particularly on the foetus. In 2000, Tomiwaza *et al.* showed that neonicotinoids acted on mammalian nicotinic acetylcholine receptors as well as those of insects, but considered that the selective nature of its binding (i.e. less affinity than in insects) made them safe for human exposure.<sup>90</sup> However, they are long acting and are now widespread in the environment. Clothianidin, for example, has a half-life in soil of up to 1386 days so it accumulates in the soil. The neonicotinoids aren't measured in groundwater in the EU. Farmers apply clothianidin and thiamethoxam blindly the following year. There are several papers that have shown harmful effects of neonicotinoids on mammalian nicotinic acetylcholine receptors. (Li *et al.*,<sup>91</sup> Abou-Donia *et al.*<sup>92</sup> and Kimura-Kuroda *et al.*<sup>93</sup>) A prevalence case study has reported neurological symptoms in humans that have been correlated with neonicotinoids and their metabolites.<sup>94</sup> In a Review, Taira has published Human neonicotinoids exposure in Japan,<sup>95</sup> where seven neonicotinoid insecticides are in use.

### **It is the same in Britain: compared with Europe, academic performance of 15-year-old British school children has deteriorated between 2000 and 2013 according to OECD PISA tests**

The Programme for International Student Assessment (PISA) is a worldwide study by the Organisation for Economic Co-operation and Development (OECD) in member and non-member nations of 15-year-old school pupils' scholastic performance on mathematics, science, and reading.<sup>96</sup> It is done with a view to improving education policies and outcomes. It measures problem solving and cognition in daily life. PISA was first performed in 2000 and then repeated every three years. In 2000 the UK was ranked 4<sup>th</sup>. By 2013 the UK failed to make the top 20 in mathematics, reading and science (3 December 2013). Although not directly comparable, because there have been different numbers of countries taking part, this marks a sustained decline. The UK has made little progress and remains among the average, middle-ranking countries, in 26<sup>th</sup> place for mathematics and 23<sup>rd</sup> for reading, broadly similar to three years ago. In 2016 an OECD study showed that in England the young have lower basic skills than their counterparts in Europe.<sup>97</sup> But adults approaching retirement age (55-65 year-olds) in England compare reasonably well with their counterparts in other countries. The study says: "*The priority of priorities is therefore to improve the standard of basic schooling in England, improving both average and minimum standards (which are especially weak in England).*"

### **UK Food and Environment Research Agency (FERA) survey of pesticides 1988 to 2014 confirms that Pesticide Residues on British food are increasing annually**

A survey of pesticide (active substances) usage on Oil Seed Rape (OSR) 1988-2014<sup>98</sup> showed that the number of active substances applied had increased from 5 in 1988 to 15 in 2014 (Fig 1) and the number of treatments had increased from 5 in 1988 to 12 in 2014. (Fig 2) In 2014, herbicides were used on 98.4% OSR and seed treatments on 95.8%.

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<sup>89</sup> [http://farmlandbirds.net/sites/default/files/Tennekes\\_2010\\_2.pdf](http://farmlandbirds.net/sites/default/files/Tennekes_2010_2.pdf)

<sup>90</sup> <http://pubs.acs.org/doi/abs/10.1021/jf000873c>

<sup>91</sup> <http://www.tandfonline.com/doi/abs/10.1080/15287390701613140#.Vdml8flVhHw>

<sup>92</sup> <http://www.tandfonline.com/doi/abs/10.1080/15287390701613140#.Vdml8flVhHw>

<sup>93</sup> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0032432>

<sup>94</sup> <http://www.ncbi.nlm.nih.gov/pubmed/26535579>

<sup>95</sup> [http://www.asahikawa-med.ac.jp/dept/mc/healthy/jsce/jjce23\\_1\\_14.pdf](http://www.asahikawa-med.ac.jp/dept/mc/healthy/jsce/jjce23_1_14.pdf)

<sup>96</sup> [http://www.cmec.ca/252/Programs-and-Initiatives/Assessment/Programme-for-International-Student-Assessment-\(PISA\)/PISA-2012/index.html](http://www.cmec.ca/252/Programs-and-Initiatives/Assessment/Programme-for-International-Student-Assessment-(PISA)/PISA-2012/index.html)

<sup>97</sup> <http://www.oecd.org/unitedkingdom/building-skills-for-all-review-of-england.pdf>

<sup>98</sup> Pesticide usage on oilseed rape 1988-2014. John Hoar; (Hampshire BKA Spray Liaison Officer) using data published by Fera; Beecraft. February 2015 Volume 98 No 2, page 14.

In 2014 glyphosate was used on Wheat (601,330 kg) Winter barley, Spring barley, Oats, Rye, Triticale, Oilseed rape (577,969 kg), Linseed, All potatoes, Peas, Beans, Sugar beet, with a total of **1,765,465 kg** glyphosate on all crops.<sup>99</sup> The total weight of pesticides (herbicides and desiccants, fungicides, growth regulators, molluscicides and repellants, insecticides and seed treatments) applied to farmland in 2014 was in excess of **16,000 tonnes**. This excludes the unknown amount of glyphosate sprayed in the Amenity Sector,<sup>100</sup> by private companies and in the home. In Wales, Estate Agents require that house sellers eradicate Japanese knotweed, an invasive weed, before they can put the house on the market. Councils are unaware that Japanese knotweed has become a glyphosate- resistant super weed, as in the US with GM crops which are 'Roundup-Ready'.

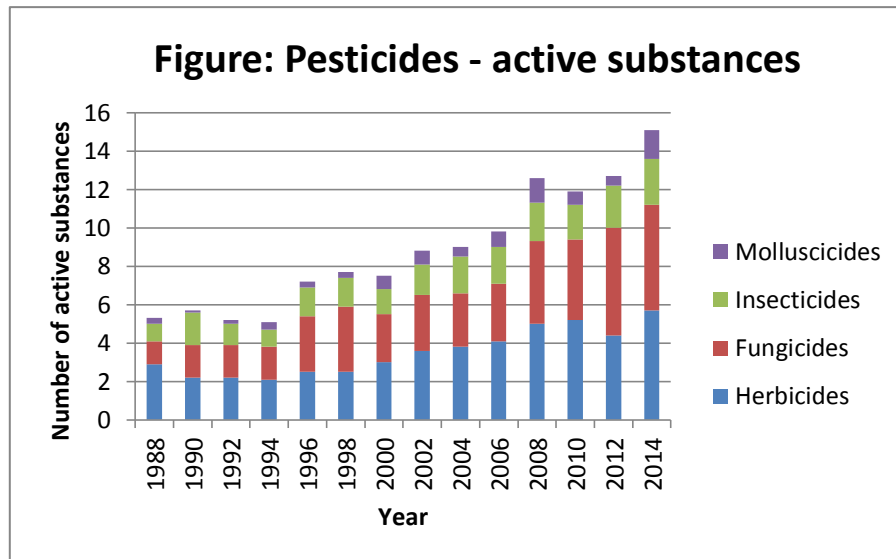


Fig. 1 PESTICIDES: Number of active substances used on Oil Seed Rape in the UK between 1988 and 2014: By kind permission of John Hoar, Hampshire Beekeeper's Spray Liaison Officer. Figures supplied by FERA

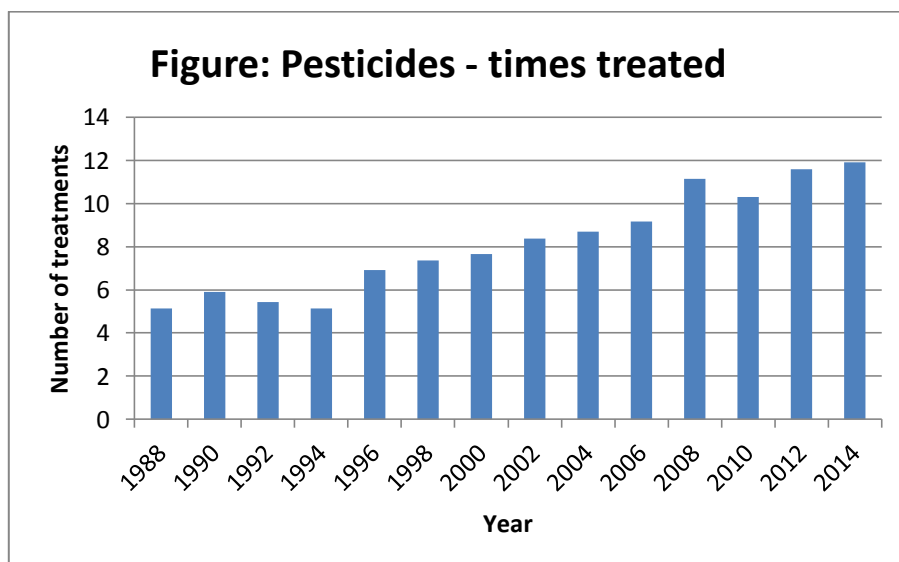


Fig. 2 PESTICIDES TIMES TREATED: used on Oil Seed Rape in the UK between 1988 and 2014: By kind permission of John Hoar, Hampshire Beekeepers Spray Liaison Officer. Figures supplied by FERA

**Farmers use more carcinogenic weed killer: The Times August 15 2015<sup>101</sup>**

<sup>99</sup> <https://secure.fera.defra.gov.uk/pusstats/surveys/documents/arable2014v2.pdf>

<sup>100</sup> Amenity\_Pesticide\_Report\_Final Feb 2011.pdf

<sup>101</sup> <http://www.thetimes.co.uk/tto/environment/article4528297.ece>

*“Farmers have sharply increased their use of a weed killer that has been classified as ‘probably carcinogenic in humans.’” Ben Webster, The Times Environment Correspondent said. “More than 1,700 tonnes of glyphosate were sprayed on crops last year, up a third on 2012, according to the Department for Environment, Food and Rural Affairs (Defra). The total area sprayed with the weed killer grew by almost 500,000 hectares to 2.1 million hectares, an area the size of Wales.”* Guy Gagen, chief arable adviser for the National Farmers’ Union, said that glyphosate usage had probably increased to control black-grass,<sup>102</sup> a weed that is resistant to weaker herbicides. He said: *“No farmer would be wanting to put a chemical on a crop when he doesn’t need to.”* He added that spraying wheat could result in traces of glyphosate ending up in bread sold in supermarkets but the amount was well below the maximum residue level set by the EU. A Defra spokesman said: *“There are extensive regulations in place so that people and the environment are protected from pesticides. The approval of glyphosate for use across Europe is being reviewed by the EU Commission.”*

### **Wildlife Law: Control of Invasive Non-native Species<sup>103</sup> from the Law Commission**

*“On 11 February 2014, we published our final report, Wildlife Law: Control of Invasive Non-native Species. This is the first item to be delivered from the full project. This element of the project was brought forward at the request of Defra and the Welsh Government to enable them to consider whether to introduce early legislation.”*

If landowners do not comply, this new law will give the relevant body (Defra, the Welsh Government and statutory bodies such as the Environment Agency, Forestry Commission, Natural England and Natural Resources Wales) the power to enter land for the purposes of species control. Japanese knotweed is among the plant species specified. But the law appears to be coy about specifying the method of eradication.

### **Science requires that measurements are made; even with glyphosate and the neonicotinoids**

The CRD, EFSA, US EPA and the AVPMA claim they are doing ‘*sound science*’. However, although they are measuring many pesticides in groundwater **THEY DO NOT** measure **glyphosate** or the **systemic neonicotinoid insecticides**. These are the most widely used herbicides/pesticides in the world. Independent scientists have measured glyphosate and neonicotinoid insecticide residues in humans and animals and in non-organic food, water, air and rain. Farmers in the UK, the EU and the US are applying them blindly each year. The levels are increasing in the environment each year and can be correlated with rising losses of biodiversity and deterioration in human and animal health.

### **Many independent sources have measured glyphosate in the environment**

In 2011, the US Geological Survey (USGS) published the first report on the ambient levels of glyphosate, the most widely used herbicide in the United States, and its major degradation product, aminomethylphosphonic acid (AMPA), in air and rain in Mississippi and Iowa in two growing seasons.<sup>104</sup> In 2013, scientists in Argentina did the same. *“Agricultural production is fundamentally based on a technological package that combines no-till and glyphosate in the cultivation of transgenic crops. Transgenic crops (soybean, maize and cotton) occupy 23 million hectares. This means that glyphosate is the most employed herbicide in the country, where 180–200 million liters are applied every year.”*<sup>105</sup> Another report from hydrologists in the USGS in 2014: *“The most comprehensive research to date on environmental glyphosate levels exposes the widespread contamination of soil and water in the US, as well as its water treatment system. Looking at a wide range of geographical locations, researchers from the USGS analysed 3,732 water and sediment samples and 1,081 quality assurance samples collected between 2001 and 2010 from 38 states in the*

<sup>102</sup> HERBICIDE RESISTANT BLACKGRASS, FIRST SEEN IN 1982 IS NOW FOUND ON 16,000 FARMS IN 34 COUNTIES. This is a glyphosate-resistant super weed, the same as in GM in the US and Japanese Knotweed in the UK. Does the NFU understand super weeds and do they really want GMO technology?

<sup>103</sup> <http://lawcommission.justice.gov.uk/publications/2612.htm>

<sup>104</sup> <http://www.ncbi.nlm.nih.gov/pubmed/21128261>

<sup>105</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23849835>



US and the district of Colombia. They found glyphosate in 39.4 % of samples (1,470 out of 3,732) and its metabolite aminomethylphosphonic acid (AMPA) in 55 % of samples. They concluded that Glyphosate and its degradation product AMPA occur frequently and widely in U.S. soils, surface water, groundwater, and precipitation.<sup>106</sup>

**A global industry has emerged to advise on Biocides Regulation (= a substance that is KILLING LIFE) As with the regulation of pesticides, it is controlled by the pesticides industry**

Biocides Symposia are held regularly around the world to “get up-to-speed on all that’s new in biocidal products regulation” to “stay one step ahead.” Courses are from £300-400 per day to \$1585 for a Symposium. A multitude of firms have clients from ‘industry, crop protection and government’. Chemical Watch **BiocidesHub** (Shrewsbury) offers 13 Events on Biocides Regulation in 2016, ranging from beginners courses to advanced.

**REACH** (Registration, Evaluation, Authorisation and Restriction of Chemical substances) is a ‘European Community regulation to improve the protection of human health and the environment’ which came into force in 2007. *Exponent Inc.* is a company that helps chemical firms with REACH compliance.<sup>107</sup> It describes itself as “a research and scientific consultant firm with clients from industry (including crop protection) and government.” *Exponent* was employed by Bayer to criticise EFSA’s work on neonicotinoids and bees in 2013. It also contributed to a review by a Dow employee that concluded that “exposure to specific pesticides during critical periods of brain development and neurobehavioral outcomes is not compelling.”<sup>108</sup> The Review was funded by the Crop Protection Association to counter the research in the US that linked chlorpyrifos, an organophosphorous pesticide (still registered in the UK and applied to 116,762 ha of crops in 2013) to neuro-developmental problems.<sup>109</sup>

Caroline Harris is a Vice-President of Exponent. She worked for 15 years for the UK Pesticides Safety Directorate (PSD) and will have known Dr Peter Campbell Head of Ecotoxicology in the PSD. Both went through the revolving doors to high positions in Industry. Peter Campbell in 1997 became Head of Ecotoxicology in Syngenta. Dr Harris went straight into *Exponent Inc.* She was a former member of the Advisory Committee on Pesticides, now abolished. She is a member of the UK Committee on Toxicology of Chemicals in Food and the Environment (CoT) that is supposedly independent. The new Chairman of CoT is Professor Alan Boobis. He is Vice-President of the Board of Directors of the International Life Sciences Institute (ILSI) Europe, Vice Chairman of the Scientific Advisory Committee of ILSI Europe and a Member of the Board of Trustees. **ILSI is industry-funded.** The membership of ILSI Europe consists of 56 (as of 12 Feb 2015) organisations.<sup>110</sup> This list represents Global Corporations (including the six Agrochemical Giants) with massive resources that are seeking to control the world’s food supply. ILSI is an industry organisation based in Washington, DC, USA. It claims to be “a non-profit, worldwide organization whose mission is to provide science that improves human health and well-being and safeguards the environment” and allegedly has charity status.

**Public Health England (PHE) Report on ‘Fracking’ gave the government the green light**

PHE was created as an “operationally autonomous executive agency” of the Department of Health on 1 April 2013, when responsibility for public health passed to local authorities. Its function is to “protect and improve the nation’s health and wellbeing, and reduce health inequalities” by providing government, local government, the NHS, public health professionals, and the public with “evidence-based professional, scientific and delivery expertise and advice.” PHE took over from the Health Protection Agency; the HPA had confirmed (with Finland) that the GSK vaccine for swine flu was

<sup>106</sup> <http://onlinelibrary.wiley.com/doi/10.1111/jawr.2014.50.issue-2/issuetoc>

<sup>107</sup> <http://www.exponent.com/REACH/>

<sup>108</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23777200>

<sup>109</sup> <http://ehp.niehs.nih.gov/1003160/>

<sup>110</sup> <http://www.ilsa.org/Europe/Pages/currentmembers.aspx>

associated with narcolepsy (in 4-18 year-olds, the incidence was 1 in 55,000) but the Government had indemnified GSK from responsibility for complications, so the taxpayer will have to pay!

Jonathan Gornall, investigative journalist for the *British Medical Journal*, highlighted the poor record of Public Health England at protecting the public.<sup>111</sup> On 19 November 2013 (8 months after the new agency had been formed) members of the House of Commons Health Select Committee questioned their choice of top priority: Report of the Impact of Fracking on public health.<sup>112</sup>

The PHE Report: "In conclusion, the currently available evidence indicates that the potential risks to public health from exposure to the emissions associated with shale gas extraction will be low if the operations are properly run and regulated. In order to ensure this, regulation needs to be strongly and robustly applied." This is at odds with the Report from the American Chemical Society below. "The handling of the evidence for its controversial report on e-cigarettes (19 August 2015)<sup>113</sup> adds to questions about the credibility of the organisation's advice." This review of the up-to-date evidence on e-cigarettes reported that 'e-cigarettes are 95% safer than tobacco.'

### **Hydraulic Fracturing (Fracking) Report of the American Chemical Society**

Environmental engineer William Stringfellow and colleagues at Lawrence Berkeley National Laboratory and the University of the Pacific told the American Chemical Society meeting in San Francisco that they scoured databases and reports to compile a list of the chemicals commonly used in fracking. Such additives which are necessary for the extraction process, include: acids to dissolve minerals and open up cracks in the rock; biocides to kill bacteria and prevent corrosion; gels and other agents to keep the fluid at the right level of viscosity at different temperatures; substances to prevent clays from swelling or shifting; distillates to reduce friction; acids to limit the precipitation of metal oxides. The researchers assembled a list of 190 of them, and considered their properties.<sup>114</sup> For around one-third of them, there was very little data about health risks, and eight of them were toxic to mammals. Fracking is a highly controversial technique, and has **not** been handed a clean bill of health by the scientific societies that are independent of industry.

**This is also at odds with the authors' account in Poison Spring: The Secret History of Pollution and the EPA.**<sup>115</sup> Like the British Government, the US EPA has failed to protect the public

Extract on Fracking: "The upshot all this is that there are more than a thousand cases of fracking-related water contamination in 34 states, and documented cases of both human harm and severe health on wildlife and farm animals. In Colorado alone, where drilling increased by 50% between 2003 and 2008, there are more than 1,500 fracking spills": (see page 227).

The UK government and the Press have kept quiet about the fracking leak in Southern California which started on 19 12 2015 and 'will go on for months and is a no fly zone.'<sup>116</sup> In February 2016, it is still spewing out methane because the EPA didn't require adequate safety measures to be put in place.<sup>117</sup> Bearing in mind the UK's 'ideological dislike for regulation of pesticides' ...there are doubts as to whether fracking will be any better regulated.

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<sup>111</sup> <http://www.bmj.com/content/351/bmj.h5826>

<sup>112</sup> <https://www.gov.uk/government/publications/shale-gas-extraction-review-of-the-potential-public-health-impacts-of-exposures-to-chemical-and-radioactive-pollutants>

<sup>113</sup>

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/457102/E-cigarettes\\_an\\_evidence\\_update\\_A\\_report\\_commissioned\\_by\\_Public\\_Health\\_England\\_FINAL.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/457102/E-cigarettes_an_evidence_update_A_report_commissioned_by_Public_Health_England_FINAL.pdf)

<sup>114</sup> <http://fracfocus.org/chemical-use/what-chemicals-are-used>

<sup>115</sup> <http://www.independentsciencenews.org/health/poison-spring-the-secret-history-of-pollution-and-the-epa/>

<sup>116</sup> <https://www.youtube.com/watch?v=7KB-9UBCJUY>

<sup>117</sup> <http://www.dailykos.com/story/2016/01/25/1474767/-Southern-California-Gas-Co-leak-still-spewing-100s-of-tons-methane-every-day-Is-fracking-to-blame>

## The Task Force on Shale Gas

Lord Chris Smith former Chairman of the UK Environment Agency was appointed in October 2014 to lead the '*independent, industry-funded*' Task Force on Fracking to look into the risks and benefits of Fracking in the UK.<sup>118</sup> On 15 July 2013 *The Independent* newspaper had revealed the conflicts of interest at the heart of decision-making.<sup>119</sup>

**Lord Browne:** The former BP boss is chairman of Cuadrilla, which is exploring for shale gas in Lancashire and West Sussex. He is lead "non-executive" across Government, meaning that he helps recruit other non-executives to Whitehall.

**Baroness Hogg:** The non-executive for the Treasury sits on the board of BG Group, which has significant shale gas assets in the United States.

**Sam Laidlaw:** The non-executive to the Transport Department is also chief executive of British Gas owner Centrica, which recently bought a 25 per cent stake in Cuadrilla's most promising shale gas prospect.

**Ben Moxham:** A former executive at BP when Lord Browne was at the helm, he followed the peer to Riverstone Holdings, which owns 42 per cent of Cuadrilla. Moxham was energy adviser at No 10 but quit in May.

**Lord Howell:** George Osborne's father-in-law is also president of the British Institute of Economics, whose backers include BP and BG Group. A senior Conservative peer, who is George Osborne's father-in-law, provoked anger and surprise after he suggested "fracking" for shale gas should be limited to the North East of England because it has "*large and uninhabited and desolate areas*".<sup>120</sup>

In March 2015, Lord Smith told the *Guardian* he was '*hugely sceptical*' about fracking.<sup>121</sup> However, by the autumn he had changed his mind. On September 16<sup>th</sup> 2015: Third Report of the Task Force on Shale Gas was published: Assessing the Impact of Shale Gas on Climate Change.<sup>122</sup> Extract from Conclusions and Recommendations: "*Therefore the Task Force concludes – in line with the thinking of relevant forecasting organisations – that there is a requirement for gas to play a significant role in the UK's energy mix in the short and medium term. The evidence suggests that the impact of shale gas on the climate is similar to that of conventional gas and less than that of LNG. If this is the case, based on the evidence outlined above, the Task Force is persuaded that, if properly regulated, implemented and monitored, shale gas should be explored as a potential gas source to meet UK energy needs. The Task Force also believes that everything possible should be done to minimise the climate impact of gas extraction in the UK.*"

### **FOI information: Ministers make it top priority 'to ensure nature laws do not hamper fracking'**<sup>123</sup>

A letter written to the Chancellor, George Osborne dated 7 July 2015 and signed by three Ministers: Liz Truss, the Environment Secretary; Amber Rudd, the Energy Secretary; and Greg Clark, the Communities Secretary, was obtained by Friends of the Earth. "One of our top priorities will be to examine what work is required to ensure that the safeguarding provisions in the [Infrastructure] Act do not inadvertently create fresh barriers to exploration and to minimise the delays that the requirements in the act have introduced."

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<sup>118</sup> <http://www.theguardian.com/environment/2014/oct/21/former-environment-agency-head-to-lead-industry-funded-fracking-task-force>

<sup>119</sup> <http://www.independent.co.uk/news/uk/politics/revealed-fracking-industry-bosses-at-heart-of-coalition-8707589.html>

<sup>120</sup> <http://www.independent.co.uk/news/uk/politics/former-energy-minister-lord-howell-george-osborne-s-father-in-law-says-it-s-fine-to-frack-in-empty-8738634.html>

<sup>121</sup> <http://www.theguardian.com/environment/2015/mar/25/lord-smith-hugely-sceptical-of-fracking-for-shale-oil-in-the-uk>

<sup>122</sup>

<https://darkroom.taskforceonshalegas.uk/original/8879c0b838c6e09864638cbd6902b190:7f5b9e74c66410cff3253321938981d6/right-report.pdf>

<sup>123</sup> <http://www.theguardian.com/environment/2016/feb/01/uk-ministers-make-it-top-priority-to-ensure-nature-laws-do-not-hamper-fracking>

## Serious questions about the independence of EFSA Committees

**Why are the Chairs of the EFSA Panel on Genetically Modified Organisms (GMO) and genetically modified food and feed,<sup>124</sup> the Scientific Committee and Emerging Risks (SCER)<sup>125</sup> and Contaminants in the Food Chain (CONTAM)<sup>126</sup> all British?**

Was it part of the plan with industry on 26/06/2012 to facilitate getting GM crops into Britain?

Professor Joe Perry, Chairman GMO Panel formerly worked at Rothamsted Research.

Professor Anthony Richard Hardy, Chairman of SCER, formerly worked for the Central Science Laboratory in York and ADAS, (the science arm of MAFF that recommended in 1980 the advice of a Monsanto scientist that farmers should spray glyphosate on crops pre-harvest.)

Dr Diane Benford, Chairman of CONTAM, currently works for the UK Food Standards Agency.

Prof Huw Jones is another member from Rothamsted Research on the GMO Panel.

**Examples of EFSA GMO Panel ‘adopting’ GM without considering environmental consequences**

*"The UK Competent Authority and Syngenta had applied for placing on the market of a GM, herbicide tolerant (glyphosate) maize GA21 for food and feed uses, import, processing and cultivation."*<sup>127</sup> It was adopted by the EFSA on 16 December 2011. Although the EFSA GMO Panel had said that there were no effects on human or animal health or the environment in the Abstract, in the full document, they admitted to the problems of reduction in farmland biodiversity, selection of weed communities and selection of glyphosate-resistant weeds, and destruction of food webs and the ecological functions they provide. Nevertheless, EFSA adopted it, but covered itself by saying *"The magnitude of these potential adverse environmental effects will depend on a series of factors including the specific herbicide and cultivation management applied at farm level, the crop rotation...etc.* and recommended *"case-specific monitoring."*

**EFSA GMO Panel adopted GM crops on the grounds that they were safe for human health and the environment**

This is despite the many papers that show that super weeds are massively destructive to the environment in the US<sup>128</sup> and that over a period of 30 years there has been uncontrolled spread and contamination globally by many Genetically-Engineered (GE) plants that are herbicide resistant.<sup>129</sup>

**Why did the GMO Panel say that glyphosate and GM would not harm Lepidoptera species?**

In 2012 the Chairman of the GMO Panel was lead author of a paper in the *Journal of Applied Ecology* "Estimating the effects of Cry1F *Bt*-maize pollen on a non-target Lepidoptera, using a mathematical model of exposure."<sup>130</sup> Conclusion: *Mitigation measures of risks of Bt-maize to sensitive larvae of non-target lepidopteran species can be effective, but depend on host-plant densities, which are in turn affected by weed-management regimes* (sic).

Mathematical modelling failed to predict the near extinction of the migrant Monarch butterfly.

In February 2015 the US Center for Food Safety produced an 88-page Report: *Monarchs in peril: Herbicide-Resistant Crops and the decline of Monarch Butterflies in North America*.<sup>131</sup> "Unlike many other weed killers, once absorbed it (glyphosate) is translocated (moved internally) to root tissue, where it kills milkweed at the root and so prevents regeneration. The increasingly common practice of growing Roundup Ready crops continuously on the same fields means that milkweed is exposed to

<sup>124</sup> <http://www.efsa.europa.eu/en/gmo/gmomembers.htm>

<sup>125</sup> <http://www.efsa.europa.eu/en/scer/scmembers.htm>

<sup>126</sup> <http://www.efsa.europa.eu/en/contam/contammembers.htm>

<sup>127</sup> <http://www.efsa.europa.eu/en/efsajournal/pub/2480.htm>

<sup>128</sup> <http://www.enveurope.com/content/pdf/s12302-016-0070-0.pdf>

<sup>129</sup> [http://www.testbiotech.org/sites/default/files/Testbiotech\\_Transgene\\_Escape.pdf](http://www.testbiotech.org/sites/default/files/Testbiotech_Transgene_Escape.pdf)

<sup>130</sup> <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2011.02083.x/pdf>

<sup>131</sup> [http://www.centerforfoodsafety.org/files/cfs-monarch-report\\_2-4-15\\_design\\_05341.pdf](http://www.centerforfoodsafety.org/files/cfs-monarch-report_2-4-15_design_05341.pdf)

glyphosate every year, with no opportunity to recover. In 1999, common milkweed was found in half of corn and soybean fields, but only 8% of them a decade later.”

### **Uncontrolled spread of GE crops: Testbiotech Report on the spread of GE Oil Seed Rape<sup>132</sup>**

GE plants have been grown for 30 years and commercially for 20 years. This independent Report provides a global overview of the uncontrolled escape of GE oil seed rape (OSR) in various regions of the world (US, Canada, Japan, Australia, Switzerland and Germany). In Switzerland where no imports of GE OSR have been allowed since 2008: “*Transgenic OSR was able to survive along rail tracks for long periods because extensive glyphosate spraying of these areas offer them selective advantages.*” In Japan: “*plants that proved to be resistant to glyphosate or glufosinate were found at ports and along transportation routes to industry plants where OSR is processed.*”

### **Transgene Escape: Global atlas of uncontrolled spread of genetically engineered plants<sup>133</sup>**

This Report, also from Testbiotech (Germany), makes several recommendations. Most importantly, measures should be put in place immediately to stop any further uncontrolled spread of genetically engineered plants into the environment as far as possible. Comprehensive regulation should be established to strengthen the Precautionary Principle and the release of genetically engineered organisms should not be allowed if they cannot be retrieved.

### **Conflicts of interest not declared: GMO Panel Chairman is joint author of a Review with EFSA of spread of feral GM herbicide-tolerant OSR: “concerns are not scientifically justified”<sup>134</sup>**

This paper by the Chairman of the GMO panel and EFSA dismiss concerns of escape of GE organisms into the environment. It “*concludes that feral GM herbicide-tolerant oilseed rape in Europe should not be routinely managed, and certainly not in semi-natural habitats, as the benefits of such action would not outweigh the negative effects of management.*”

### **Why did EFSA conceal their own paper that discovered a hidden viral gene in GMO crops?**

In January 2012 Prof Du Jardin, University of Liège, Belgium, a Vice-Chairman of the EFSA GMO Panel was the second author of a paper whose first author, Nancy Podevin an EFSA employee, found a hidden viral gene in GMO crops.<sup>135</sup> In fact, this paper isn’t among Prof du Jardin’s selected scientific publications on his Biography for EFSA. Is he anxious to avoid it being discussed? Or has he been threatened by industry? There are at least two independent scientists who have suggested that there are serious questions to be answered about human safety by those in Europe authorising GM. Jonathan Latham, PhD, Editor of *Independent Science News* has written a Synopsis and he and Allison Wilson have published a pdf.<sup>136</sup>

Synopsis: “*A scientific paper published in late 2012 shows that US and EU GMO regulators have for many years been inadvertently approving transgenic events containing an unsuspected viral gene. As a result, 54 different transgenic events commercialized internationally contain a substantial segment of the multifunctional Gene VI from Cauliflower Mosaic Virus (CaMV) within them. Among these are some of the most widely grown GMOs, including Roundup® Ready Soybean (40-3-2) and MON810 Maize. The oversight occurred because regulators failed to appreciate that Gene VI overlaps the commonly used CaMV 35S gene regulatory sequence.*

*The authors of the paper, working for the European Food Safety Authority, concluded that functions of Gene VI were potential sources of harmful consequences. They further concluded that, if expressed, the fragments of Gene VI are substantial enough for them to be functional (Podevin and*

<sup>132</sup> [www.testbiotech.de/node/891](http://www.testbiotech.de/node/891)

<sup>133</sup> [http://www.testbiotech.org/sites/default/files/Testbiotech\\_Transgene\\_Escape.pdf](http://www.testbiotech.org/sites/default/files/Testbiotech_Transgene_Escape.pdf)

<sup>134</sup> <http://nora.nerc.ac.uk/15307/1/N015307PP.pdf>

<sup>135</sup> Possible consequences of the overlap between the CaMV 35S promoter regions in plant transformation vectors used and the viral gene VI in transgenic plants. <http://blogg.slu.se/forskarbloggen/files/2013/02/GMcrops2012-Podevin.pdf>

<sup>136</sup> <http://www.independentsciencenews.org/commentaries/regulators-discover-a-hidden-viral-gene-in-commercial-gmo-crops/>

*du Jardin (2012) GM Crops and Food 3: 1-5).*

*This discovery has multiple ramifications for biotechnology. Foremost, there is the immediate question of GMO safety and whether the 54 events should be recalled, but secondly, the failure implicates regulators and the industry in a circle of mutual incompetence and complacency. The discovery will also strengthen the argument for GMO labelling: if regulators and industry cannot protect the public then why should they not be allowed to protect themselves?"*

In Norway, on 24/01/2013 GenØk<sup>137</sup> published a similar assessment at the request of the Norwegian Directorate for Nature Management.<sup>138</sup>

### **Why didn't EFSA report these papers (1) showing the presence of Bt toxin in pregnant women and their fetuses; and (2) Bt toxin was not broken down in digestion and had toxic effects on mice?**

Maternal and fetal exposure to pesticides associated to genetically modified foods in Eastern Townships of Quebec, Canada<sup>139</sup> showed the presence of glufosinate herbicide, its metabolite 3-methylphosphinicopropionic acid (3-MPPA) and Cry1Ab protein (a Bt toxin) in pregnant women, their fetuses and in non-pregnant women. Another study showed that Bt insecticidal toxins similar to those engineered into GM Bt crops were not broken down in digestion, as is claimed by the industry and regulators, but had toxic effects on the blood of mice.<sup>140</sup> Cytotoxicity was also demonstrated on human cells of Cry1Ab and Cry1Ac Bt insecticidal toxins alone, or with a glyphosate-based herbicide.<sup>141</sup>

### **Genetically Engineered Foods: The Biggest Fraud in the History of Science. Governments and leading scientific institutions have systematically misrepresented the facts about GMOs and the scientific research that casts doubt on their safety**

On 4 March 2015 the Organisation Beyond GM facilitated the Press Release of American public interest attorney Steven Druker's acclaimed new book, Altered Genes, Twisted Truth How the Venture to Genetically Engineer Our Food Has Subverted Science, Corrupted Government and Systematically Deceived the Public.

His book reveals how governments and leading scientific institutions have systematically misrepresented the facts about GMOs and the scientific research that casts doubt on their safety.<sup>142</sup>

GM Watch reported: "The book features a foreword by the renowned primatologist Dame Jane Goodall, who will also speak at the conference, hailing it as "without doubt one of the most important books of the last 50 years."

*The book's revelations come at a crucial time when the UK is considering the commercial planting of GM crops following the European Parliament's decision to allow member states to opt out of the blockade that has barred them from the EU until now. Based on the evidence presented in the book, Druker and Goodall will assert that it would be foolhardy to push forward with a technology that is unacceptably risky and should never have been allowed on the market in the first place. The book is the result of more than 15 years of intensive research and investigation by Druker, who came to prominence for initiating a lawsuit against the US Food and Drug Administration (FDA).*

### **Steven Druker initiated a lawsuit against the US Food and Drug Administration (FDA) that forced it to open its files on GM foods**

*Those files revealed that GM foods first achieved commercialisation in 1992 only because the FDA:*

*\* Covered up the extensive warnings of its own scientists about their dangers*

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<sup>137</sup> GenØk – Centre for Biosafety is a non-commercial foundation located in the research environment at the University of Tromsø and Forskningsparken (the Science Park). GenØk's vision is safer use of biotechnologies.

<sup>138</sup> <http://genok.com/arkiv/723/>

<sup>139</sup> <http://www.sciencedirect.com/science/article/pii/S0890623811000566>

<sup>140</sup> <http://www.esciencecentral.org/journals/hematotoxicity-of-bacillus-thuringiensis-as-spore-crystal-strains-cry1aa-cry1ab-cry1ac-or-cry2aa-in-swiss-albino-mice-2329-8790.1000104.php?aid=11822>

<sup>141</sup> <http://onlinelibrary.wiley.com/doi/10.1002/jat.2712/abstractn>

<sup>142</sup> <http://www.gmwatch.org/index.php/news/archive/2015-articles/15973>

*\* Lied about the facts*

*\* And then violated federal food safety law by permitting these foods to be marketed without having been proven safe through standard testing*

*“Druker’s well-referenced book points out that if the FDA had actually heeded its own experts’ advice, told the truth and obeyed the law, the GM food venture would have imploded and never gained traction anywhere.”* There were extensive media resources<sup>143</sup> but the launch wasn’t reported in the mainstream media. It is not surprising since members of eminent societies and some editors of scientific journals and philanthropists in the UK & US are supporting GM.<sup>144</sup>

### **Druker challenges UK Royal Society over misleading statements made about GM foods**

Open Letter to the UK Royal Society can be read here.<sup>145</sup>

Extracts: *“Because clarifying the facts about GM foods is crucial for developing an intelligent, science-based policy on the future of agriculture, and because the Royal Society has significantly contributed to the confusion that currently surrounds this issue, it is imperative that remedial action be promptly initiated. This is especially so considering that:*

- *The European Commission is about to approve substantial regulatory changes in regard to GM crops.*
- *The UK is seriously considering allowing them to be commercially planted.*
- *The Society and other proponents of GM foods have inculcated the widespread illusion that there is an overwhelming scientific consensus that the safety of these products has been established through rigorous testing...”*

Unless you promptly take these steps, it will demonstrate that your commitment to promoting GM foods is stronger than your commitment to honoring the truth and upholding the integrity of science. FURTHER, whether or not you own up to your irresponsible actions and take the steps specified above, I challenge you to read my book and specifically list any inaccurate statements of fact that you find in it, accompanied by an explanation of why the statement is erroneous and a reference to the evidence that corroborates your assertion.”

### **The Royal Society supports GM crops but refuses to have a rational debate about them**

Dr Brian John of GM-Free-Cymru wrote an Open Letter to the President of the Royal Society Sir Paul Nurse on 26/01/2011.<sup>146</sup> It was in response to a BBC Horizon programme in which Sir Paul examined some of the reasons why the public at large is profoundly sceptical about science and scientists with regard to global warming and GM. Dr John says: *“For more than a decade now, scientists working in the GM field have mounted vicious personal attacks (sometimes politically rather than scientifically motivated) upon serious scientists who have had the temerity to discover ‘uncomfortable things about GM crops and foods’. This trend started with the vitriolic treatment meted out (with the Royal Society in the vanguard) on Arpad Pusztai and Stanley Ewen a decade ago, and continued with the crucifixion of Ignacio Chapela and David Quist, Angelika Hilbeck, Maewan Ho, Judy Carman, Gilles-Eric Séralini, Andrés Carrasco, Manuela Malatesta, Christian Velot, Irina Ermakova and many others...”*

*You will be aware that there has never been a single piece of epidemiological research to back up the claims that GM foods are entirely safe to eat. Since the earliest days of the GM enterprise, the industry has set itself against such research, and governments, regulators and august bodies like the Royal Society have connived in this cunning little plan, allowing GM advocates like Julian Little (Bayer) to trot out this sort of nonsense: ‘two trillion meals containing GM ingredients have been*

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<sup>143</sup> <http://beyond-gm.org/alterd-genes-twisted-truth-media-resources/>

<sup>144</sup> Royal Society, Wellcome Foundation, Bill & Melinda Gates, Lord David Sainsbury and the Gatsby Foundation, Rothamsted Research, John Innes Centre, Sainsbury Laboratory, Civil Servants from Defra, NFU, James Hutton Institute, BIS, Offices of Life Sciences, Centre for Food Security, Food Standards Agency, etc.

<sup>145</sup> [http://beyond-gm.org/wp-content/uploads/2015/03/DRUKER\\_OPEN-LETTER-TO-THE-ROYAL-SOCIETY\\_Final.pdf](http://beyond-gm.org/wp-content/uploads/2015/03/DRUKER_OPEN-LETTER-TO-THE-ROYAL-SOCIETY_Final.pdf)

<sup>146</sup> [http://www.gmfrecymru.org.uk/open\\_letters/Open\\_letter26Jan2011.html](http://www.gmfrecymru.org.uk/open_letters/Open_letter26Jan2011.html)

consumed with no adverse health effects.' As we all know, there are abundant animal feeding studies that show that GM components in the diet lead to physiological changes and cell damage. The American Academy of Environmental Medicine drew attention to studies that indicate "serious health risks associated with GM food consumption including infertility, immune dysregulation, accelerated aging, dysregulation of genes associated with cholesterol synthesis, insulin regulation, cell signalling, and protein formation, and changes in the liver, kidney, spleen and gastrointestinal system". They concluded that: "There is more than a casual association between GM foods and adverse health effects. There is causation ..."

### **Steven Druker says that there has been silence following his challenge to the Royal Society**

"The Royal Society wants us to take its word that GM crops are safe and healthy", writes Steven Druker on June 2015 in *The Ecologist*.<sup>147</sup> "But it refuses to retract its errors, apologise to those whose reputations it has impugned, or enter into constructive debate on the issue. To restore its scientific integrity, it must abide by its own motto." "Scientific truths are not merely asserted, nor are they created by the authority of the speaker, no matter how eminent. They must be firmly rooted in evidence and rational argument."

### **Druker talks about the Royal Society's preposterous pretensions**

"But neither he nor the Society have acknowledged the errors, or provided any reply to the allegations made. Instead, the misrepresentation of reality has been amplified. In response to [media inquiries about the challenge](#), here's the official statement that the institution provides:" "The Royal Society bases its views on evidence, evidence that has been closely scrutinized by people with expert knowledge and that has stood up to that scrutiny. Personal opinions and unsubstantiated anecdotes are unhelpful to having a rational public debate on science and the use of new technologies."

### **The Society dismissed one of the most rigorous studies yet performed on a GMO food**

"Nor has the Society faced up to the fact that it dispensed multiple misrepresentations, and otherwise behaved unethically, in order to discredit the solid, and unsettling, research conducted at the Rowett Institute under the direction of Dr. Arpad Pusztai, one of the world's foremost experts in food safety. That study<sup>148</sup> is still one of the most rigorous yet performed on a GM food, and it's still highly relevant because it controlled for the effects of the new foreign protein - which entails that the adverse results it registered were attributable to a broader feature of the genetic engineering process itself.

And that is why proponents of GM foods cannot abide it and have ardently attacked it - with the Royal Society leading the charge.

As documented in my letter, first the Society savaged the research without having seen the complete data, which prompted the editor of *The Lancet* to rebuke it for its "breath-taking impertinence." It then strove to prevent the research from being published. And after the research eventually was published in *The Lancet* despite the attacks, the Society continued to misleadingly malign it."

### **Royal Society's 'deafening silence' on GMOs**

Colin Todhunter wrote in *The Ecologist* on 03/06/2015:<sup>149</sup> "It is now three months since Steven Druker addressed the Royal Society in his open letter and 44 days since 20 April. There appears to have been no response from The Royal Society - and certainly not a public one - except for a brief and deliberately insulting statement issued today." (See the underlined statement above).

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[http://www.theecologist.org/blogs\\_and\\_comments/commentators/2921277/the\\_royal\\_societys\\_assault\\_on\\_the\\_science\\_of\\_gm\\_foods\\_must\\_cease.html](http://www.theecologist.org/blogs_and_comments/commentators/2921277/the_royal_societys_assault_on_the_science_of_gm_foods_must_cease.html)

<sup>148</sup> <http://www.thelancet.com/pdfs/journals/lancet/PIIS0140673698058607.pdf>

<sup>149</sup>

[http://www.theecologist.org/blogs\\_and\\_comments/commentators/2893487/gmos\\_the\\_royal\\_societys\\_deafening\\_silence.html](http://www.theecologist.org/blogs_and_comments/commentators/2893487/gmos_the_royal_societys_deafening_silence.html)



*“The Royal Society is the preeminent scientific body within the UK that advises the government. It therefore has an obligation to the British public to provide a public response and 'put the record straight' on GMOs - not least because the current staunchly pro-GMO Cameron-led administration will likely sanction the planting of GM crops in England within the next couple of years, and the Transatlantic Trade and Investment Partnership (TTIP) deal could open the floodgates to GM foods appearing on the shelves of UK supermarkets.”*

The purpose of The Royal Society is, according to its website, to *“recognise, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity.”*

### **Q & A session with an independent GM scientist about the artificial technology of GM**

In April 2004 Dr Mae-wan Ho, a geneticist and winner of the 2014 Prigogine Medal for her pioneering work in the physics of organisms and sustainable systems, was interviewed by Anastasia Stephens of the *Evening Standard*.<sup>150</sup>

**AS** *“Doesn't genetic modification follow what nature does already - the evolutionary principle of genetic selection?”*

**M-WH** *“No, GM breaks all the rules of evolution, it short circuits evolution altogether. It bypasses reproduction, creates new genes and gene combinations that have never existed, and is not restricted by the usual barriers between species.”*

### **Genetic Engineering and Bt Toxins: The GMO Emperor has no clothes**

*“We have been repeatedly told that genetically engineered (GE) crops will save the world by increasing yields and producing more food. They will save the world by controlling pests and weeds. They will save the world by reducing chemical use in agriculture. They will save the world with GE drought tolerant seeds and other seed traits that will provide resilience in times of climate change.”*

All of these claims have been established as false over years of experience all across the world. The Global Citizens Report: “The Emperor Has No Clothes”<sup>151</sup>

brings together evidence from the ground of Monsanto's and the industry's false promises and failed technology. *The fable that GMOs are feeding the world has already led to large-scale destruction of biodiversity and farmers' livelihoods. It is threatening the very basis of our freedom to know what we eat and to choose what we eat. Our biodiversity and our seed freedom are in peril. Our food freedom, food democracy and food sovereignty are at stake.*



### **The New Genetics and Natural versus Artificial Genetic Modification**<sup>152</sup>

Dr Mae-Wan Ho is Director and co-founder of the Institute of Science in Society (ISIS). It is an organisation that seeks to reclaim science for the public good and to promote social responsibility and ecological sustainability in science. She was winner of the 2014 prestigious Prigogine Medal<sup>153</sup> for her work in the physics of organisms and sustainable systems pioneered for more than 20 years.

**Abstract:** *The original rationale and impetus for artificial genetic modification was the “central dogma” of molecular biology that assumed DNA carries all the instructions for making an organism, which are transmitted via RNA to protein to biological function in linear causal chains. This is contrary to the reality of the “fluid genome” that has emerged since the mid-1970s. In order to survive, the organism needs to engage in natural genetic modification in real time, an exquisitely precise molecular dance of life with RNA and DNA responding to and participating in “downstream” biological functions. Artificial genetic modification, in contrast, is crude, imprecise, and interferes*

<sup>150</sup> <http://www.i-sis.org.uk/GMmyths.php>

<sup>151</sup> <http://www.navdanya.org/component/content/article/19-frontpage-content/118-the-gmo-emperor-has-no-clothes-a-global-citizens-report-on-the-state-of-gmos>

<sup>152</sup> <http://www.mdpi.com/1099-4300/15/11/4748/pdf>

<sup>153</sup> [http://www.i-sis.org.uk/ISIS\\_Director\\_Wins\\_Science\\_Award.php](http://www.i-sis.org.uk/ISIS_Director_Wins_Science_Award.php)

*with the natural process. It drives natural systems towards maximum biosemiotic entropy as the perturbations are propagated and amplified through the complex cascades of interactions between subsystems that are essential for health and longevity.*

**Is it significant that Sir Paul Nurse came from the Rockefeller Foundation?  
The President of the Royal Society was President of the Rockefeller University in New York: and yes, the Rockefeller Foundation developed GM Crops**

Sir Paul Nurse was appointed to Rockefeller private University in 2003 and finished in 2010. “After he assumes the Royal Society presidency, Nurse will maintain a laboratory on the Rockefeller campus and will have an on-going relationship with the university.”<sup>154</sup> The Rockefeller Foundation did the earliest research on GMOs and founded the science of ‘molecular biology’ that reduced the complexity of life to a single gene, which was not stable.<sup>155</sup>

**The sixth mass extinction and chemicals in the environment: our environmental deficit is now beyond nature’s ability to regenerate**<sup>156</sup>

Two papers about the future of the planet appeared within a month of each other (June/July 2015): Accelerated modern human-induced species losses: Entering the sixth mass extinction was the first (5 pages long).<sup>157</sup> The six authors calculated the average rate of vertebrate losses over the last century and compared it with the background rate of losses. They estimated it to be up to 114 times the background rate and asserted that this rate of losses of biodiversity indicated that a sixth mass extinction is already under way. The authors described themselves variously as ecologists, field biologists, paleobiologists or population biologists, but all held two beliefs in common: that the conservation of natural ecosystems is essential to human health; but that the accelerated losses of biodiversity are a result of human activity. Safeguarding human health in the Anthropocene epoch: Report of the Rockefeller Foundation–Lancet Commission on planetary health was the second paper (56 pages, with 23 authors). At least 10 of the authors were associated with the Rockefeller Foundation, although only one curriculum vitae acknowledged the fact. Sarah Whitmee was seconded to the Foundation to serve as lead author of the Report and member of the Foundation’s secretariat. One author worked as an environmental health scientist in the Office of the Science Adviser at the United States Environmental Protection Agency and was lead author of a recent paper Biodiversity loss affects global disease ecology, that made no mention of pesticides. Most of the remainder are eminent public health doctors. The Rockefeller Foundation funded the initial research on genetically modified organisms in the early 1940s and founded the science of molecular biology, a highly reductionist programme aimed at “understanding” life. The Rockefeller Foundation gives financial support to the global spread of GMO technology; and to research on the biofortification of crops, the introduction of nutrients into crops by genetic engineering techniques for the supposed benefit of third world countries.

**Safeguarding human health in the Anthropocene epoch: Report of the Rockefeller Foundation–Lancet Commission on planetary health**<sup>158</sup>: no mention of pesticides

The Rockefeller/Lancet Commission on Planetary Health never mentioned pesticides. According to the Report, the key drivers of ecosystem change in the last 60 years were: “Increases in the amounts of nitrogen and phosphorus entering the environment through agricultural fertiliser runoff and soil erosion.” This is what Defra said in 2011 the Synthesis of the UK National Ecosystem

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<sup>154</sup> <http://newswire.rockefeller.edu/2010/04/23/paul-nurse-to-resign-as-rockefeller-president-to-become-president-of-royal-society-of-london-in-december/>

<sup>155</sup> <http://www.globalresearch.ca/doomsday-seed-vault-in-the-arctic-2/23503>

<sup>156</sup> <http://www.amsi.ge/jbpc/31515/15-3-abs-5.htm>

<sup>157</sup> <http://advances.sciencemag.org/content/advances/1/5/e1400253.full.pdf>

<sup>158</sup> <http://www.thelancet.com/commissions/planetary-health>

Assessment:<sup>159</sup> “Major increases in fertiliser use, particularly nitrogen and phosphorus, have adversely affected aquatic ecosystems through runoff.” **What about pesticides?**

The scientists who contributed to the 56-page RF /Lancet Commission Report failed to mention the serious threats of exposure to the most widespread chemicals in the global environment, glyphosate (an endocrine disrupter) and the systemic neonicotinoid insecticides. Neither of them is routinely measured in the environment by governments or their departments of agriculture. However, there is plenty of evidence that humans and the environment are completely saturated with chemicals.

### **When discussing overpopulation, why were references to Prof Paul Ehrlich’s work omitted from the RF/Lancet Commission Report?**

The Bing Professor of Population Studies in the Department of Biological Sciences at Stanford University and President of Stanford's Center for Conservation Biology, Ehrlich has warned about overpopulation since his first book, the Population Bomb, hit the headlines in 1968.<sup>160</sup> Since then, he has written about this phenomenon in increasingly urgent terms.<sup>161,162</sup> Here are some apposite observations taken from these two works:

There have been increasing signs of great toxic peril for humanity and its life-support systems, with a growing threat from the release of hormone-disrupting chemicals that could even be shifting the human sex ratio and reducing sperm counts;

- Agriculture is a leading cause of losses of biodiversity and ecosystem services;
- An industrial agricultural revolution has created a technology-dependent global food system;
- *But* it has also created serious long-run vulnerabilities, especially in its dependence on stable climates, crop monocultures, industrially produced fertilizers and pesticides, petroleum, antibiotic feed supplements and rapid, efficient transportation;
- Farming is a principal source of global toxification, *pace* Rachel Carson;
- Soils are being degraded;
- “Growth can continue forever if it’s in service industries”, and “technological innovation will save us” are fables;
- Worship of “free” markets should be deprecated;
- Without significant pressure from the public demanding action, we fear there is little chance of changing course fast enough to forestall disaster;
- *This* will require developing mechanisms to force big corporations (including those in big agriculture and big pharma) to bear social responsibilities like the real individuals whose rights they legally want to assume;
- Adverse symptoms of exposure to synthetic chemicals are making some scientists increasingly nervous about effects on the human population;
- Elected officials and other leaders have almost no knowledge of science.

### **The Rockefeller Foundation supports GM crops and biofortification of crops**

On the initiative of Bill Gates, in May 2009 some of America’s richest people met to discuss ways of tackling a ‘disastrous’ environmental, social and industrial threat of overpopulation at the home of Sir Paul Nurse,<sup>163</sup> a British Nobel prize biochemist and President (elected in 2003) of the private Rockefeller University in Manhattan.<sup>164</sup> David Rockefeller Jr. hosted the meeting. These same individuals have met several times since to develop “a strategy in which population growth would be tackled...”<sup>165</sup>

<sup>159</sup> [file:///C:/Users/Rosemary/Downloads/uk\\_nea\\_synthesis\\_report.pdf](file:///C:/Users/Rosemary/Downloads/uk_nea_synthesis_report.pdf)

<sup>160</sup> Ehrlich, P. R. *The Population Bomb*. New York: Buccaneer Books (1968).

<sup>161</sup> <http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1000330>

<sup>162</sup> <http://rspb.royalsocietypublishing.org/content/280/1754/20122845.short>

<sup>163</sup> There was some doubt as to whether he was present or not. <http://www.theguardian.com/world/2009/may/31/new-york-billionaire-philanthropists>

<sup>164</sup> <http://www.globalresearch.ca/billionaire-club-in-bid-to-curb-overpopulation/13736>

<sup>165</sup> <http://www.prophecynewswatch.com/2014/March20/202.html>

### **The Rockefeller Foundation funded the earliest research on GMOs**

The RF funded the earliest research on GMOs in the 1940s and founded the science of ‘molecular biology’ that reduced the complexity of life to a single gene that was not stable out of the test tube. It was called reductionism.<sup>166</sup> The RF’s 100<sup>th</sup> Anniversary Agriculture website says:<sup>167</sup> *“Since the 1970s, the techniques pioneered by the RF have been criticized for their environmental impact, for their relationship with big agribusiness, and for failing to eliminate hunger completely.”* The RF also founded the ‘Green Revolution’. *“As one analyst put it, in effect, the Green Revolution was merely a chemical revolution. At no point could developing nations pay for the huge amounts of chemical fertilizers and pesticides.”*<sup>168</sup>

### **The Rockefeller Foundation contributed to the scandalous Golden Rice Project**

The RF financially supported biofortification of rice and the University of Ghent. De Steur *et al.* from Ghent wrote in 2015:<sup>169</sup> *“This month marks the 15th anniversary of the publication of pro-vitamin A-enriched ‘Golden Rice’. As the crop still awaits regulatory approval, its developers have little reason to celebrate. Golden Rice is not alone in facing a political and regulatory blockade. Several other biofortified transgenic crops also await authorization.”*

They were not the only ones to express anger. The former UK Environment Secretary Owen Paterson opined: *“Opponents of the development of a type of genetically modified (GM) rice enriched with vitamin A are ‘wicked’.*<sup>170</sup> *It’s just disgusting that little children are allowed to go blind and die because of a hang-up by a small number of people about this technology.”*

The Environment Secretary had been sadly misled about the availability of Golden Rice. The paper has been withdrawn, despite a court injunction to reinstate it. The Institute of Science in Society (I-SiS) sardonically remarked *“This ‘golden rice’, not yet available, is already worth its weight in diamonds.*<sup>171</sup> The paper, a joint venture between Tufts University in Massachusetts and Chinese scientists: ‘Golden Rice (GR) has been genetically engineered to be rich in β-carotene for use as a source of vitamin A’ was published in the *American Journal of Nutrition* 2012.<sup>172</sup> *The project was funded from four sources of public finance totaling US\$100 million: the philanthropic Rockefeller Foundation, whose mission is to support scientific research that specifically benefits the poor... Many have commented on the absurdity of offering ‘golden rice’ as the cure for vitamin A deficiency when there are plenty of alternative, infinitely cheaper sources of vitamin A or pro-vitamin A, such as green vegetables and unpolished rice, that would be rich in other essential vitamins and minerals besides.”* Golden Rice was illegally trialed on children by scientists in Tufts University<sup>173</sup> without the knowledge of the Chinese Government. *“Independent scientists claimed that the trials were in breach of the Nuremberg Code of Ethics brought in at the end of the Second World War to prevent any repetition of the experiments conducted by Nazi scientists including many on children.”* Further, a detailed audit on the project by I-SiS<sup>174</sup> uncovered *“fundamental deficiencies”* from the scientific and social rationale to the science and technology involved. It was being promoted *“to salvage a morally as well as financially bankrupt agricultural biotech industry.”*<sup>175</sup> Protests by independent scientists were such that the paper was retracted by the journal. *“Among other things, the journal says, they did not provide evidence that they had ethical approval for their experiments. The authors*

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<sup>165</sup> <http://www.globalresearch.ca/doomsday-seed-vault-in-the-arctic-2/23503>

<sup>167</sup> <http://rockefeller100.org/exhibits/show/agriculture>

<sup>168</sup> <http://www.globalresearch.ca/doomsday-seed-vault-in-the-arctic-2/23503>

<sup>169</sup> <http://www.nature.com/nbt/journal/v33/n1/full/nbt.3110.html?message-global=remove>

<sup>170</sup> <http://www.bbc.co.uk/news/uk-politics-24515938>

<sup>171</sup> <http://www.i-sis.org.uk/rice.php>

<sup>172</sup> <http://www.ncbi.nlm.nih.gov/pubmed/22854406>

<sup>173</sup> <http://www.i-sis.org.uk/SPUCTGM.php>

<sup>174</sup> Ho MW. The ‘Golden Rice’ – An Exercise in How Not to Do Science. TWN Biotechnology and Biosafety Series No. 6, Third World Network, Penang, 2002. <http://www.i-sis.org.uk/onlinestore/books.php#276>

<sup>175</sup> <http://www.i-sis.org.uk/goldenRiceScandal.php>

filed an injunction last year to stop the retraction, but were denied one by a Massachusetts court on 17 July.”<sup>176</sup> Adrian Dubock, Executive Secretary of the Golden Rice Humanitarian Board in Switzerland, says that a few months ago, a wealthy philanthropist—whose name he declined to share—offered to bankroll Tang's lawsuit. "My understanding is that this person is very troubled by socially important issues that affect the disadvantaged.”<sup>177</sup>

### **Biofortification with zinc**

A modelling study of the global threat of increasing carbon dioxide levels on zinc in third world countries appeared in *The Lancet Global Health* on the same day as the RF/Lancet paper.<sup>178</sup> Bill and Melinda Gates funded the study. The author, Samuel Myers, who appears to be associated with the RF concluded: “Such interventions might include zinc supplementation, fortification of staple foods with additional zinc, the application of zinc-containing fertilisers to crops, and the development and introduction of biofortified crop strains such as rice and wheat.”

### **How the UK is colluding with the Pesticides and the Pharmaceutical Industry? Why has the Committee on Toxicity of Chemicals in Foods, Consumer Products and the Environment (CoT) and the Committee on Carcinogenicity (COC) rejected global reports on links between pesticides and cancers?**

This was the question I asked the Chief Medical Officer on 10/03/2014. I enumerated the Reports from around the world that described links and said: “I have examined the Committee on Carcinogenicity (COC) Annual Reports from 2001 to 2011. They have failed to find definite ‘para-occupational’ links between pesticides and cancer. However, there are a number of papers that do not appear to have been considered (or could be in the 2012 Annual Report).”

On 30/11/2015, I sent the CMO a Report that included the fact that Anthony Samsel had analysed the secret files from the US EPA and found that they had contained the information that Monsanto knew that glyphosate caused cancer, but had falsified the results. Samsel & Seneff concluded that: “significant evidence of tumours was found during these investigations. In January 2016, I had quoted Samsel as saying that “with glyphosate there is no safe level of exposure.”

### **An identical phrase was used to describe alcohol: ‘no safe level of exposure’**

Imagine my astonishment when the Chief Medical Officer came out with that very phrase...except that she was talking about alcohol as a carcinogen, not glyphosate. She was launching a new Report published by the **Committee on Carcinogenicity (COC)**.<sup>179</sup>

*“We have reviewed new information on alcohol and cancer that has become available since the 2009 IARC review. There are some limitations to the conclusions that we were able to make, because of the different ways research studies record data such as whether or not someone has a particular cancer and how much alcohol a person drinks. Overall, our findings support the view that drinking alcohol increases the risk of getting cancers of the mouth and throat, voice box, gullet, large bowel, liver, of breast cancer in women, and probably also of cancer of the pancreas.”*

### **Four different patents have been filed for glyphosate in the US by Monsanto (and granted)**

- As a chelator of heavy metals (used to clean boilers) and a wetting agent in 1961<sup>180</sup>
- As a herbicide in 1968<sup>181</sup>

<sup>176</sup> [http://www.nature.com/news/the-week-in-science-31-july-6-august-2015-1.18120?WT.ec\\_id=NATURE-20150806&spMailingID=49256879&spUserID=MTg5MTg3OTcxMTEs1&spJobID=740835078&spReportId=NzQwODM1MDC450](http://www.nature.com/news/the-week-in-science-31-july-6-august-2015-1.18120?WT.ec_id=NATURE-20150806&spMailingID=49256879&spUserID=MTg5MTg3OTcxMTEs1&spJobID=740835078&spReportId=NzQwODM1MDC450)

<sup>177</sup> <http://news.sciencemag.org/asiapacific/2014/07/researcher-sues-block-retraction-golden-rice-paper>

<sup>178</sup> <http://environment.harvard.edu/sites/default/files/piis2214109x15000935.pdf>

<sup>179</sup>

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/490584/COC\\_2015\\_S2\\_Alcohol\\_and\\_Cancer\\_statement\\_Final\\_version.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/490584/COC_2015_S2_Alcohol_and_Cancer_statement_Final_version.pdf)

<sup>180</sup> <http://www.google.com/patents/US3160632>

- As an antibiotic in 2002<sup>182</sup>
- As an anti-protozoal agent in 2003<sup>183</sup>

“Antibiotic-resistant diseases pose an ‘apocalyptic’ threat to humans.” Vets, farmers and GPs were blamed for overuse of antibiotics.<sup>184</sup> In 2013, the Chief Medical Officer told MPs that this issue should be added to the national risk register of civil emergencies. In March 2014 I wrote to inform her that glyphosate had been patented as an antibiotic. I finally had a reply: “Given the detailed regulatory regime for plant protection products, this is the most appropriate place for these issues to be considered.”

When Prof Mark Woolhouse, Professor of Infectious Disease Epidemiology at the University of Edinburgh, and Dr Jeremy Farrar, Director of the Wellcome Trust, published an article in *Nature* on 29/04/2014 about the Intergovernmental Panel on Antimicrobial Resistance<sup>185</sup> I wrote to inform them that glyphosate had been patented as an antibiotic, but received no reply. Here is a scientific paper that confirms it.

### **Herbicides dicamba, 2,4-D and glyphosate are biocides which have sub-lethal effects on microbes**

Kurenbach, B, *et al.* Sublethal Exposure to Commercial Formulations of the Herbicides Dicamba, 2,4-Dichloro- phenoxyacetic Acid, and Glyphosate Cause Changes in Antibiotic Susceptibility in *Escherichia coli* and *Salmonella enterica* serovar Typhimurium.<sup>186</sup>

PRACTICAL IMPORTANCE as stated by the authors: “Increasingly common chemicals used in agriculture, domestic gardens, and public places can induce a multiple antibiotic resistance phenotype in potential pathogens. The effect occurs upon simultaneous exposure to antibiotics and is faster than the lethal effect of antibiotics. The magnitude of the induced response may undermine antibiotic therapy and substantially increase the probability of spontaneous mutation to higher levels of resistance. The combination of high use of both herbicides and antibiotics in proximity to farm animals and important insects, such as honeybees, might also compromise their therapeutic effects and drive greater use of antibiotics. To address the crisis of antibiotic resistance requires broadening our view of environmental contributors to the evolution of resistance.”

### **The Wellcome Trust hosts the Science Media Centre ---sponsored by corporations whose ‘experts’ denied that Roundup® and GMO maize caused tumours**

The SMC sponsors include AstraZeneca, BP, Coca-Cola, L’Oreal, Monsanto, Syngenta and *Nature* Publishing Group. The Centre provides a rapid ‘expert’ opinion for journalists. But the Director admits that it was set up in the wake of Dr Árpád Pusztai publishing his paper which showed that rats fed on GM potatoes had stunted growth and a repressed immune system. The ‘experts’ are proponents of GMOs often having major conflicts of interest. The SMC allows corporations to influence what journalists write and hence control the information given to the British public.

Colin Macilwain, a science policy writer from Edinburgh who has worked as a reporter and an editor from both sides of the Atlantic<sup>187</sup> wrote about plans to replicate Britain’s Science Media Centre (SMC) in the United States, which he said was “*fraught with danger.*”

<sup>181</sup> <http://www.google.com/patents/US3455675>

<sup>182</sup> <http://www.google.com/patents/US7771736>

<sup>183</sup> <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetacgi%2FPTO%2Fsrchnum.htm&r=1&f=G&l=50&s1=7771736.PN.&OS=PN/7771736&RS=PN/7771736>

<sup>184</sup> <http://www.theguardian.com/society/2013/jan/23/antibiotic-resistant-diseases-apocalyptic-threat>

<sup>185</sup> <http://www.nature.com/news/policy-an-intergovernmental-panel-on-antimicrobial-resistance-1.15275>

<sup>186</sup> <http://mbio.asm.org/content/6/2/e00009-15.full.pdf+html>

<sup>187</sup> <http://magz.elibraries.eu/ul/1826/Nature%20Magazine%207389%20-%202012-03-15.pdf>

go.nature.com/klnuna World View *Nature* 15<sup>th</sup> March 2012

Extracts: *“The London SMC was set up because UK scientific leaders were upset that environmentalists had successfully fought the introduction of genetically modified food; they felt that the UK media were too susceptible to environmental scare stories about new technologies. Despite the fears of the SMC founders, the British press — led by the BBC, which treats the Confederation of British Industry with the deference the Vatican gets in Rome — is overwhelmingly conservative and pro-business in its outlook. It is quite unperturbed by the fact that SMC sponsors include AstraZeneca, BP, Coca-Cola, L'Oreal, Monsanto, Syngenta (as well as Nature Publishing Group) but not a single environmental non-governmental organization (NGO) or trade union. Fiona Fox, the SMC's director, says that the centre operates independently of its sponsors and points out that none (except its host, the Wellcome Trust) accounts individually for more than 5% of its income. (However, examination of the Funding for 2014,<sup>188</sup> the total funding from industry and trade bodies (27% from 29 Organizations) exceeds any other source of funding apart that from the Government & the Wellcome Trust). She adds that no NGOs are involved because it was their public-relations skills that the founders of the SMC sought to match.”*

Macilwain goes on to say: *“But the perception that the environmental group Friends of the Earth constitutes a bigger threat to scientific truth-telling than some of the corporate names on the SMC's sponsorship list is not one the US media would accept. Some of those considering a US centre share these concerns. They think that their funding model will have to rely on charitable trusts, not companies or government agencies.”*

#### There are Science Media Centres in Japan, Canada, Australia and New Zealand

Ms Fox took this as evidence that the 10-year-old centre was fulfilling its remit to prevent a repeat of incidents such as the uncritical reporting in 1998 of the claim - heavily criticised by the scientific community - made by Árpád Pusztai, a former researcher at the Rowett Research Institute in Aberdeen, that rats fed on GM potatoes had stunted growth and a repressed immune system.<sup>189</sup> She said that the relatively muted coverage in the UK contrasted with how the story was reported in other countries, particularly France, where it was *“front-page news everywhere”*, prompting the French government to launch an inquiry into the study's findings. According to Ms Fox, the Science Media Centre's ability to gather a lot of expert comment quickly was particularly valuable in this instance because journalists who were shown the paper in advance of its publication were required to sign a highly unusual agreement that prevented them from sharing it with third parties. Critics claimed that this minimised the time journalists had to gather potentially negative commentary.

#### **The Pesticides Industry and AstraZeneca make billions in the UK. Why are its tax affairs never a topic to be discussed? Because it is already funding Government's Strategy for UK Life Sciences<sup>190</sup>**

Syngenta's parent company is AstraZeneca. AstraZeneca manufactures six different anti-cancer drugs mainly aimed at breast and prostate cancer. The Corporation has links in Asia, including Hospitals in China, Japan, Korea, and collaborators in Russia. AstraZeneca's Oncology Website<sup>191</sup> has the following portentous prediction: *“Cancer claims over 7 million lives every year and the number continues to rise. Deaths are estimated to reach 12 million by 2030.”* The close relationship between the pesticides and the pharmaceutical industry is significant. Syngenta makes atrazine which is banned in Europe in 2004. However, it continued to be sold in the UK until 2008, when in a presentation to the Pesticides Forum, the Environment Agency had showed that atrazine and its metabolites had been found in more than 25% of sample sites. The Environment Agency Groundwater Database had recorded a maximum concentration of atrazine of 13.04µg/l.<sup>192</sup>

<sup>188</sup> <http://www.sciencemediacentre.org/about-us/funding/>

<sup>189</sup> <https://www.timeshighereducation.com/news/research/research-intelligence-shock-troops-check-poor-gm-study/421361.article>

<sup>190</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/32457/11-1429-strategy-for-uk-life-sciences.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32457/11-1429-strategy-for-uk-life-sciences.pdf)

<sup>191</sup> <http://www.astrazeneca.co.uk/medicines/oncology>

<sup>192</sup> <http://nora.nerc.ac.uk/14557/1/OR11013.pdf>

However, atrazine is still the second commonest herbicide in use in the world. A US scientist points out that it is an aromatase inducer (as is glyphosate) which is linked to breast and prostate cancer and Novartis markets letrozole (an aromatase inhibitor) for the treatment of breast cancer and prostate cancer.<sup>193</sup> One Corporation promotes cancer; another Corporation cures it.

Michael Pragnell MA MBA was the founder of Syngenta and CEO of Syngenta AG based in Switzerland (from its public listing in 2000 to the end of 2007). He was appointed a Trustee of Cancer Research UK (CRUK) in March 2010 and Chairman in November 2010. The CRUK website said about pesticides as a cause of cancer: “For now, the evidence is not strong enough to give us any clear answers. But for individual pesticides, the evidence was either too weak to come to a conclusion, or only strong enough to suggest a “possible” effect. The scientific evidence on pesticides and cancer is still uncertain and more research is needed in this area.”<sup>194</sup>

**Corporations’ donations to the British Government and what they get in return for their money**  
CRUK is donating money (£450 million/year) to the Government’s Strategy for UK Life Sciences and AstraZeneca is providing 22 compounds to academic research to develop medicines.

Relationships between Syngenta, AstraZeneca and Defra/Fera

In 1997, Dr Peter Campbell went straight from being the Head of Ecotoxicology Branch at the Pesticides Safety Directorate in York into the post of Head of Ecological Sciences at Syngenta.<sup>195</sup> In 2009 Syngenta and BBSRC gave £1 million to fund Warwick University and Rothamsted Research “to help to improve honeybee health”.<sup>196</sup> (Rothamsted had lost funding for its Bee Unit in 2006). Syngenta funded scientific assistants at Exeter University in 2012. Syngenta pioneered Operation Bumblebee in the UK and in 2010 announced expansion of programmes across Europe; up to €1 million over 5 years.<sup>197</sup> Programmes included “What Operation Bumblebee can do for your golf course?”

Syngenta had representatives on the Advisory Committee on Pesticides (ACP), the Committee on Toxicity of Chemicals in Foods, Consumer Products and the Environment (COT), on the Panel to choose the Pollinator Initiative Projects and on the Government’s Foresight Future of Farming Report.<sup>198</sup> Syngenta’s parent company AstraZeneca previously had two representatives on COT.

**In June 2012, a secret meeting was held between the Agricultural Biotechnology Council (ABC), representing industry, two UK Ministers, two MPs, Civil Servants, Scientists and NFU to discuss the barriers to introducing Genetically Modified (GM) Crops into Britain and how to overcome them**

On 25<sup>th</sup> October 2012 Dr Helen Wallace Director of Genewatch and Pete Riley Campaign Manager GM Freeze published a Press Release.<sup>199</sup> *Monsanto meets Ministers to push return of GM crops to Britain*. On 26 June 2012, a Roundtable discussion on ‘Going for Growth’: Realising the potential of agricultural technologies in the UK. Attendees<sup>200</sup> included Government Ministers, MPs, Civil Servants from Defra, the Department of Business, Innovations and Skills, Office of Life Sciences, Director of the Centre for Food Security, John Innes Centre, Rothamsted Research, James Hutton Institute, National Farmers Union Leaders and the Agricultural and Horticultural Development Board. Here are the links to the Agenda<sup>201</sup> and a summary of the meeting.<sup>202</sup> The ABC had also communicated with the Food Standards Agency (FSA). These organisations have colluded with industry.

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<sup>193</sup> <http://www.atrazinelovers.com/m7.html>

<sup>194</sup> <http://www.cancerresearchuk.org/cancer-info/healthyliving/cancercontroversies/pesticides/>

<sup>195</sup> <http://uk.linkedin.com/pub/peter-campbell/4/283/6ba>

<sup>196</sup> <http://www.bbsrc.ac.uk/news/archive/2009/091001-pr-1million-award-honeybee-decline.aspx>

<sup>197</sup> <http://www.bbsrc.ac.uk/news/archive/2009/091001-pr-1million-award-honeybee-decline.aspx>

<sup>198</sup> <http://www.bis.gov.uk/assets/foresight/docs/food-and-farming/11-546-future-of-food-and-farming-report.pdf>

<sup>199</sup> <http://www.genewatch.org/article.shtml?als%5Bcid%5D=569457&als%5Bitemid%5D=571449>

<sup>200</sup> <http://tinyurl.com/9jbce4g>

<sup>201</sup> <http://tinyurl.com/8ahylza>

<sup>202</sup> <http://tinyurl.com/92rrajn>



### **23/09/2013 EFSA, the European Commission, the British Government and Monsanto joined forces**

In order to fight civil society in the EU Court to defend the right to import Monsanto's transgenic soybean Intacta® which produces an insecticide and is resistant to glyphosate herbicides such as Roundup®.<sup>203</sup>

### **May 2014 The UK Government and the GM industry: colluding to promote GM crops and foods, undermine consumer choice and ignore environmental harm**<sup>204</sup>

This briefing summarises information (also collected by GeneWatch UK using requests under the Freedom of Information Act and the Environmental Information Regulations (known as Fols). It demonstrates close co-operation between the GM industry and the UK Government, including a joint strategy to promote GM crops and foods in the press and media.

#### The documents:

- "Reveal how foreign multinational GM companies are running the Government's Public Relations (PR) strategy on GM crops by controlling how public and private money will be invested in research;
- Show that taxpayers' money is being spent on PR for the GM industry rather than delivering better food and farming;
- Suggest close co-operation with GM soya importers to pressure retailers to allow meat and dairy suppliers to use Monsanto's RoundUp® Ready GM soya for animal feed and prevent consumers from accessing GM-free fed meat and dairy products;
- Highlight the extent to which the GM industry's role in Government policy is being kept hidden from the public."

### **The Press in France, Germany, Denmark and Sweden write freely about exposure to pesticides damaging health: *Le Monde*<sup>205</sup> newspaper in France revealed that the German RMS BfR is in the hands of the Agrochemical Industry**

The French investigative journalist Stéphane Foucart exposed the BfR on 30 March 2015: "The BfR was already under suspicion over its peculiar risk evaluations; for example it declared glyphosate to be 'harmless' despite massive evidence to the contrary." *Le Monde* revealed that one third of the Members of the **BFR Commission on Pesticides and their Residues** are directly employed by the chemical industry; others came from the 'dubious' Bee Institutes. The satirical comment from *Le Monde* was, that in Germany: "people from the pesticide industry give expert safety advice on their own products". Walter Haefeker President of the European Professional Beekeepers' Association (EPBA) confirmed this: "Dr. Karsten Hogardt, Federal Office of Consumer Protection and Food Safety (BVL) stated that the BVL sees itself as: '**a service for its clients, the plant protection industry**'.<sup>206</sup> In this role it is 'advised' by an expert group of 'risk-managers' including many from the pesticide industry". Haefeker said: "It is shocking and disgraceful, that no independent scientists are allowed in the regulation, or licensing, of pesticides in Germany".

**Syngenta exposed for funding neonicotinoid research in Britain:** On 23/09/2012, once again in the French newspaper *Le Monde*, Stéphane Foucart revealed that Dr James Cresswell a bee researcher at Exeter, who denied that neonicotinoids caused colony collapse in honeybees, was receiving funding from Syngenta, but had not revealed conflicts of interest.<sup>207</sup> Foucart said it didn't really matter for France because the French Government had already made a decision to ban Cruiser®

<sup>203</sup> <http://www.testbiotech.de/en/node/898>

<sup>204</sup> [http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/Fol\\_summary\\_May14.pdf](http://www.genewatch.org/uploads/f03c6d66a9b354535738483c1c3d49e4/Fol_summary_May14.pdf)

<sup>205</sup> FOUCART, S. 2015. Noire semaine pour l'expertise. *Le Monde (Paris)* article 30.III.2015

[http://www.lemonde.fr/idees/article/2015/03/30/noire-semaine-pour-expertise\\_4605627\\_3232.html?xtmc=neonicotinoides&xtcr=1](http://www.lemonde.fr/idees/article/2015/03/30/noire-semaine-pour-expertise_4605627_3232.html?xtmc=neonicotinoides&xtcr=1)

<sup>206</sup> <http://podcasts.haefeker.org/?p=132>

<sup>207</sup> [http://www.lemonde.fr/planete/article/2012/09/23/le-chercheur-l-agrochimiste-et-les-abeilles\\_1764022\\_3244.html](http://www.lemonde.fr/planete/article/2012/09/23/le-chercheur-l-agrochimiste-et-les-abeilles_1764022_3244.html)

(Thiamethoxam, made by Syngenta). A study (using mathematical models, statistics and computer simulations), published in the journal *Science* by Dr Helen Thompson of Britain's Food and Environment Agency together with Dr James Cresswell University of Exeter (both of whom are supported by industry) claimed that the results of the research from nine eminent bee scientists at the French National Institute for Agricultural Research (INRA)<sup>208</sup> was flawed.

### **That is why France and Germany opted out of GM crops and England opted in**

This was despite David Cameron's pledge in 2012 with regard to GM crops that: "the protection of human health and the environment are our overriding priorities".

### **Why have the mainstream media in Britain, the US and Australia remained silent?**

**Senior members of the UK press have meetings with George Osborne in which minutes are not taken**<sup>209</sup>

*"Rupert Murdoch and top News Corp bosses 'met ministers 10 times in a year'. Those meeting with George Osborne included Evgeny Lebedev, the owner of the Standard and Independent titles, Telegraph Media Group Chairman, Aidan Barclay, Telegraph Media Group Chief Executive, Murdoch MacLennan, Guardian Editor, Katharine Viner, and the Sun Editor, David Dinsmore. Treasury records show that Osborne held two ministerial meetings. Osborne, like other ministers, accepted the hospitality of a series of media executives, including senior News Corp bosses. It is understood that minutes are not expected to be taken during these encounters".*

Was this an opportunity to warn off Editors from talking about pesticides corporations because they were contributing huge amounts to the economy? However, the 'alternative press' such as *Global Research* has a massive circulation of ordinary people who know about the corruption of the UK and US governments. Some of the press barons have been present at meetings of the Bilderberg Group.

#### **The Bilderberg Group**

For over 14 years, Daniel Estulin<sup>210</sup> has investigated and researched the far-reaching influence of the Bilderberg Group on business and finance, global politics, war and peace, and control of the world's resources and its money. He states that in 1954, "*the most powerful men in the world met for the first time*" in Oosterbeek, Netherlands, "*debated the future of the world, and decided to meet annually in secret. They called themselves the Bilderberg Group with a membership representing a who's who of world power elite. Founded by David Rockefeller, who is also a leading Bilderberger and Council on Foreign Relations Chairman Emeritus, organizations he continues to finance and support.*"

In a review of Estulin's book (May 25 2014), Stephen Lendman wrote:<sup>211</sup> "*CBS and other media giants control everything we see, hear and read – through television, radio, newspapers, magazines, books, films, and large portions of the Internet. Their top officials and some journalists attend Bilderberg meetings – on condition they report nothing.*" The list of participants for the last 15 years or so shows that the CEO of Syngenta attended regularly (as part of the UK delegation) and must be a core member.<sup>212</sup> He occupies a powerful position amongst the global elite and presumably shares Bilderberg's objectives of creating a New World Order with an all-powerful corporate-controlled, global government with no democracy, manufactured crises and perpetual wars.

<sup>208</sup> <http://www.sciencemag.org/content/336/6079/348.abstract> Cresswell and Thompson comments on A Common Pesticide Decreases Foraging Success and Survival in Honey Bees

<sup>209</sup> <http://www.theguardian.com/media/2016/jan/24/george-osborne-meetings-media-rupert-murdoch-telegraph>

<sup>210</sup> Daniel Estulin: The True Story of the Bilderberg Group 2009

<sup>211</sup> <http://www.globalresearch.ca/the-true-story-of-the-bilderberg-group-and-what-they-may-be-planning-now/13808>

<sup>212</sup> <http://www.biblebelievers.org.au/bball.pdf>

On Bilderberger's wish list in 1954 was: *no middle class, only "rulers and servants (serfs)," "a zero-growth society" without prosperity or progress, only greater wealth and power for the rulers; absolute control of education to program the public mind and train those chosen for various roles; a global "welfare state where obedient slaves will be rewarded and non-conformists targeted for extermination."* The Bilderberger-Rockefeller scheme is to make their views "so appealing (by camouflaging them) that they become public policy (and can) pressure world leaders into submitting to the 'needs of the Masters of the Universe.'" The "free world press" is their instrument to disseminate "agreed-upon propaganda."

Syngenta is ruthless in its pursuit of individual scientists who challenge its products,<sup>213</sup> but has lost court cases against it in the US for contaminating water supplies with atrazine<sup>214</sup> and in Germany it was criminally charged for denying knowledge that its GM Bt 176 corn killed livestock.<sup>215</sup>

The participants at Bilderberg 2015<sup>216</sup> included George Osborne Chancellor of the Exchequer (who has attended six meetings since 2007), **two representatives from Google**,<sup>217</sup> Ed Balls, former Chancellor of the Exchequer and representatives from the Economist, the Financial Times and the Chairman of the BBC Trust, Rona Fairhead. The BBC promotes the agrochemical industry at every opportunity, although industry bias is consistently denied.<sup>218</sup> Other attendees through the years have represented Novartis, AstraZeneca, Dow, Coca Cola, Pfizer Europe, Nestlé, Royal Dutch Shell and BP, Pascal Lamy, Director General, World Trade Organization, and four UK banks: Royal Bank of Scotland Group, Barclays Bank, HSBC Holdings PLC, National Westminster Bank PLC. Philanthropists Bill and Melinda Gates, David Rockefeller, Mark Carney, Chairman of the Bank of England, Tony Blair, Pascal Lamy, former Director of the World Trade Organization etc....

**Rona Fairhead, Chairman of the BBC Trust was present with George Osborne at Bilderberg 2015. Here is one example of the BBC promoting industry: Panorama: GM Food – Cultivating Fear**<sup>219</sup>

Description in the Radio Times: "A new generation of GM foods is winning over governments and former critics of the technology, and scientists say the crops could help feed people in the developing world. So are those who oppose GM doing more harm than good? And is their opposition based on genuine safety concerns, or is it just feeding fear?"

Cultivating Myths – The Pro-GMO Bias of the BBC

June 9, 2015 by Lawrence Woodward and Pat Thomas

*"The pro-GM bias of the BBC was plain to see during Monday's (8 June 2015) Panorama programme. Blinkered and narrow rather than panoramic, selective and prejudicial rather than investigative, this sorry display set a new low for a programme that was once a flagship of investigative journalism. It had no more veracity and insight than the most clichéd corporate press release and the result was that a mix of myths, deceptive assertions and inaccurate statements by pro-GM lobbyists – including those masquerading as independent scientists – were given a free ride and promotional slot on prime time television.*

*It's tempting to say that you couldn't make this stuff up – except Panorama has proven with its latest fiction that actually you can – and that you can even get the BBC (and thus the licence fee payer) to pay for it.*<sup>220</sup>

<sup>213</sup> <http://www.newyorker.com/magazine/2014/02/10/a-valuable-reputation>

<sup>214</sup> <http://www.atrazinesettlement.com/utility/GetFile/c3e918bf-742a-41fa-8af6-0637bcf0b253>

<sup>215</sup> [http://www.i-sis.org.uk/Syngenta\\_Charged\\_for\\_Covering\\_Up\\_Livestock\\_Deaths\\_from\\_GM\\_Corn.php](http://www.i-sis.org.uk/Syngenta_Charged_for_Covering_Up_Livestock_Deaths_from_GM_Corn.php)

<sup>216</sup> <http://www.bilderbergmeetings.org/participants2015.html>

<sup>217</sup> No wonder George Osborne let Google off with minimal tax!

<sup>218</sup>

[https://www.academia.edu/15195199/Effects\\_of\\_pesticides\\_on\\_humans\\_and\\_the\\_environment\\_Why\\_are\\_the\\_British\\_Government\\_and\\_the\\_BBC\\_protecting\\_industry](https://www.academia.edu/15195199/Effects_of_pesticides_on_humans_and_the_environment_Why_are_the_British_Government_and_the_BBC_protecting_industry)

<sup>219</sup> <https://www.youtube.com/watch?v=6KruFQ2uCgk>

<sup>220</sup> <http://beyond-gm.org/cultivating-myths-the-bbc-pro-gmo-bias/>

Mark Lynas (Cornell University funded by Bill and Melinda Gates Foundation BMGF) interviews Bangladeshi farmers and he claims a 90% success for Bt Brinjal

The following are extracts from the account by Claire Robinson of GM Watch:<sup>221</sup>

The BBC's claim of 90% success for Bt brinjal in Bangladesh has been challenged by a journalist.

Faisal Rahman, staff correspondent for the United News of Bangladesh (UNB), contacted GMWatch after watching the programme, which he felt “*denied the reality of losses the farmers of Bangladesh incurred by cultivating Bt brinjal.*” Out of concern for the farmers, Rahman wanted to set the record straight. His evidence, together with subsequent investigations by GMWatch, casts serious doubt on the credibility of the BBC Panorama programme.

In the BBC Panorama programme, the narrator and frontman Tom Heap said, “*After a false start last year, this season more than 90% of the GM trial plots have been successful.*”

This remarkable claim is at odds with the finding of Faisal Rahman that 32 out of 40 farmers interviewed by the end of March this year complained of Bt brinjal crop failure. That’s 80% of the sample interviewed and 30% of the total of 108 farmers growing Bt brinjal. As Rahman points out, the real figure could be much higher, as he did not interview the remaining 68 farmers.

So where did Panorama’s 90% success claim come from? The source was briefly flashed up on the screen as “Cornell University”. Cornell and the Bangladesh Agricultural Research Institute (BARI) are “partner” organisations of the Agricultural Biotechnology Support Project II (ABSPII), which is promoting the Bt brinjal project in Bangladesh and the rest of South Asia.

Cornell University is home to the controversial Cornell Alliance for Science, which is publicizing the Bangladesh Bt brinjal project. The Alliance was launched last year with a \$5.6 million grant from the Gates Foundation to “*depolarize the charged debate around agricultural biotechnology and genetically modified organisms (GMOs).*” Its partners include the GMO industry group ISAAA, which is funded by Monsanto, CropLife, and Bayer. Cornell gave Mark Lynas a Visiting Fellowship and a platform to voice his pro-GMO views. Lynas now promotes GMOs “*to the exclusion of almost everything else*”. Cornell paid his travel expenses to the Philippines to write a pro-GMO article.

Joseph McCauley, the producer of the Panorama programme, said (to GM Watch): “*As I mentioned in my email of 28th June, if you have any further comments to make or concerns about the programme, the BBC has an official complaints process. The website is [www.bbc.co.uk/complaints](http://www.bbc.co.uk/complaints). That is the best way to ensure your concerns are dealt with properly and formally. I am happy however that the programme was accurate with the information we were given.*”

What happened next to Bt Brinjal?” After Panorama had left, on 20 June, Faisal Rahman visited some Bt brinjal fields in Tangail with fellow journalist Delowar Jahan, staff correspondent of the daily newspaper Sokaler Khobor. BBC Panorama's visit to Tangail had made them curious about the performance of Bt brinjal there. They called in on Hafizur Rahman, the farmer who was featured in the Panorama programme to show Bt brinjal was a success. Tellingly, Hafizur Rahman said he had “*stopped taking care of his Bt brinjal field about one and a half to two months ago*” because the plants had been slowly dying out, from just three months after planting. His brother Alhaj had also cultivated Bt brinjal on another plot nearby, and the condition of his crop was worse. The two journalists found a significant number of the plants dead in both the fields. Many plants were bearing fruits that were unnaturally hard and some of the fruits had rotted before being fully ripe.”

**The commercial interests of product developers who conduct their own safety assessments and retract papers that report inconvenient results**

The Séralini affair: degeneration of Science to Re-Science?<sup>222</sup>

This recent paper from Fagan, Traavik and Bøhn, highlights the whole shameful affair of conflicts of interest and how science has been misused. “*The conflicts of interest inherent in allowing product*

<sup>221</sup> <http://www.gmwatch.org/news/latest-news/16320-bt-brinjal-plants>

<sup>222</sup> <http://www.enveurope.com/content/27/1/19>

developers to conduct the safety assessment research that serves as the basis for regulatory approval of their own products also need to be reconsidered. The events surrounding the imposed retraction of *Séralini et al.* point to the need to recognize the tension inherent between **commercial interests of product developers and the scientific process, and to put in place at least basic safeguards to protect the latter.** If this is not done, there is growing risk that the standard of the future will not be Science, but Re-Science, which focuses, not on new research results that build humanity's knowledge base, but on disputes among interest groups for (i) retraction of papers that report inconvenient results, and (ii) republishing—the new Re-Science: Re-publish or Perish.”

### **Where has scientific integrity in Universities gone?**

Prof Jeremy Ramsden, Editor-in-Chief of *The Journal of Biological Physics and Chemistry* laments the loss of distinction between University Research and Commissioned Research (either from industry or from Government Departments).<sup>223</sup> “This renunciation of unimpeachable scientific integrity could not have come at a worse time for humanity. Our technical capabilities for manipulating nature have reached unprecedented heights.”

### **Academic fraud and corruption: University scientists caught conspiring with Monsanto to manipulate public opinion on GMOs<sup>224</sup>**

Dave Murphy EcoWatch, September 12, 2015

“Last weekend (September 2015), *The New York Times* released a stunning expose of how Monsanto and the biotech industry enlisted allegedly independent public university scientists in a deceptive campaign to lobby state legislators in Pennsylvania, interfere with ballot initiatives in Oregon and Colorado and paper over risks of high pesticide usage on the Hawaiian island of Kauai...

For background on how this current story originally broke, you have to go back to Aug. 6, when the international science journal *Nature* reported that more than 4,600 pages of emails from University of Florida plant scientist Kevin Folta<sup>225</sup> “reveal his close ties to the agriculture giant Monsanto ... and other biotechnology-industry interests” ...

### **Should philanthropists be allowed to control the agenda of Governments and the World Health Organization?**

#### **Global Justice Now asks pertinent questions about the Bill & Melinda Gates Foundation (BMGF)**

Global Justice Now has just bought out a new Report: **Gated Development: Is the Gates Foundation always a force for good?**<sup>226</sup> It asks the question: “Should Bill Gates be setting the global agenda for health and agriculture?”

The Corporations (the Agrochemical Industry and the Pharmaceutical Industry) that the Gates Foundation funds and works closely with are those present at the Bilderberg Meetings whose objectives are to control the world. Monsanto, Cargill, Syngenta, DuPont, Bayer, Nestle, Mondelez and Mars are among the Corporations. “The foundation is also pushing GM research in the UK. In 2012, a team of British plant scientists at the John Innes Centre in Norwich won a \$10 million grant to develop GM cereal crops; this was one of the largest single investments in GM in the UK... The Swindon-based Biotechnology and Biological Sciences Research Council, which also promotes GM research, received an \$8 million grant in 2010 to “support high quality research on sustainable crop production in sub-Saharan Africa and South Asia... In June 2014, the BMGF gave \$5.6 million to another major GM developer and advocate, Cornell University, “to support a global agricultural

<sup>223</sup> <http://www.colbas.org/ntp/opnAxs/N06RA12E.pdf>

<sup>224</sup> <http://ecowatch.com/2015/09/12/scientists-conspire-monsanto-gmos/>

<sup>225</sup> <http://www.nature.com/news/gm-crop-opponents-expand-probe-into-ties-between-scientists-and-industry-1.18146>

<sup>226</sup> <http://www.globaljustice.org.uk/sites/default/files/files/resources/gated-development-global-justice-now.pdf>

communications platform that will improve understanding of science-based agricultural technologies”.

[Did Cornell University or BMGF fund the fraudulent BBC Panorama programme about GM Brinjal? GM Watch found that BBC Reporter on Panorama (and Countryfile) Tom Heap advised industry on how to gain public acceptance for GM.<sup>227</sup> The Rothamsted 3-year trial on GM wheat cost nearly £2 million over 3 years, (including the protection of the site) of tax-payers’ money. At the end it was found to be no better than a conventional crop.<sup>228</sup>]

The Open Letter from America<sup>229</sup> from 60 million citizens in the US warned us in Europe not to authorize GM crops because of the devastating effects on human health and the environment. *“Through our experience we have come to understand that the genetic engineering of food has never really been about public good, or feeding the hungry, or supporting our farmers. Nor is it about consumer choice. Instead it is about private, corporate control of the food system. Americans are reaping the detrimental impacts of this risky and unproven agricultural technology.”*

Are Bill and Melinda Gates (BMGF), Baron Sainsbury (Gatsby Foundation), Rachel Pritzker (Pritzker Innovation Fund), David Rockefeller (Rockefeller Foundation) and Carnegie using their wealth to depopulate the world?

Global Justice Now reports that BMGF has an overwhelming focus on vaccines and GM technology. Bill Gates: *“Donor countries, you must increase your investment in vaccines and immunization, even though you are coping with budget crises... All 193 member states, you must make vaccines a central focus of your health systems”*

*In his 2015 annual letter, for example, Bill Gates wrote that the next 15 years will see major breakthroughs in poor countries which: “will be driven by innovation in technology – ranging from new vaccines and hardier crops to much cheaper smartphones and tablets – and by innovations that help deliver those things to more people.”*

In September 2014, Margaret Chan, the Director General of the WHO, told the *New York Times* in an interview about the ebola outbreak in West Africa that *“my budget [is] highly earmarked, so it is driven by what I call donor interests. **When there’s an event, we have money. Then after that, the money stops coming in, then all the staff you recruited to do the response, you have to terminate their contracts. So I don’t like these kind of ups and downs and ups and downs... When there is no war to fight, these staff would help countries to build preparedness, to build response systems. Just like a fire department. When there is no fire, you help countries to build capacity.”***

The inference in Chan’s remarks is that the WHO, whose largest donor is the BMGF, is unable to respond adequately to ebola and other disease outbreaks because donor interests prevent it being able to build public health systems in developing countries.

Jacob Levich, writing in Global Research,<sup>230</sup> said: *The Gates charitable empire is vast and growing. Within the US, BMGF focuses primarily on “education reform,” providing support for efforts to privatize public schools and subordinate teachers’ unions. Its much larger international divisions target the developing world and are geared toward infectious diseases, agricultural policy, reproductive health, and population control. In 2009 alone, BMGF spent more than \$1.8 billion on global health projects.* He confirmed the view of Global Justice Now that the power of the WHO is in the hands of BMGF and its “partners”. Levich said: *“Emulating his own strategies for cornering the software market, Gates has created a virtual monopoly in the field of public health. In the words of*

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<sup>227</sup> <http://www.gmwatch.org/news/latest-news/87-news/archive/2015/16554-bbc-reporter-advises-industry-on-how-to-gain-public-acceptance-for-gm>

<sup>228</sup> <http://www.rothamsted.ac.uk/news-views/scientists-disappointed-results-gm-wheat-field-trial>

<sup>229</sup> [www.theletterfromamerica.org](http://www.theletterfromamerica.org)

<sup>230</sup> <http://www.globalresearch.ca/philantrocipitalism-gates-the-worlds-largest-and-most-powerful-foundation/5383461>

one NGO official, “[y]ou can’t cough, scratch your head or sneeze in health without coming to the Gates Foundation.” The Foundation’s global influence is now so great that former CEO Jeff Raikes was obliged to declare: “We are not replacing the UN. But some people would say we’re a new form of multilateral organization.””

Control of media reports: “It is not inconceivable that you might find yourself some day reading a story about a Gates-funded health project, written up in a newspaper that gets its health coverage underwritten by Gates, reported by a journalist who attended a Gates-funded journalism training program, citing data collected and analysed by scientists with grants from Gates.”

### **Enormous propaganda power**

“Even if we were to satisfy ourselves that the Gates Foundation were utterly benign, it would still be worrisome that they wield such enormous propaganda power”. Mark Crispin Miller, professor of media, culture and communications at New York University.

### **Vaccine programmes**

Yet several reports in recent years raise serious questions about the impact of some of these BMGF-funded vaccine trials. Some point to significant numbers of illnesses and even deaths among those being administered vaccines.

### **Other philanthropists: were/are they any better?**

#### **The earliest philanthropist was John Bennet Laws who founded Rothamsted Research**

When UK Rothamsted was founded in 1843, it was an enormous tragedy that the philanthropist John Bennet Laws, owner of the Rothamsted Estate appointed a **chemist** as his scientific collaborator. This set the pattern for farming in Britain: to rely totally on the agrochemical industry and the input of chemicals.

#### **The philanthropist Lord Sainsbury of Turville influences policy in Britain via the Gatsby Foundation**

Since 2006 Lord Sainsbury has influenced the educational and the political systems in the UK at many levels in order to promote his personal project of introducing GM crops and GM foods “to feed the world”. He is donor of multiple Plant Research Laboratories for GMO development via the Gatsby Foundation.<sup>231</sup>

Formation of STEMNET<sup>232</sup> We funded the formation of STEMNET, which creates opportunities to inspire young people in STEM via its 24,000+ STEM Ambassadors, the STEM Clubs network, and projects including brokering enhancement and enrichment activities between schools and business. In recent years, STEMNET has received core funding from the Department for Business, Innovation and Skills, and the Department for Education for its three major programmes<sup>\*233</sup>:

- the STEM Ambassadors scheme, which sees people from STEM backgrounds volunteer as inspiring role models for young people. There are now over 24,000 Ambassadors, providing an invaluable and free resource for schools and helping teachers teach science, engineering and maths in fresh and innovative ways;
- the STEM Clubs network, which allows children to explore, investigate and discover STEM subjects in a stimulating learning environment, away from the constraints of the school timetable or a prescribed curriculum; and
- the brokerage of STEM enhancement and enrichment, through the coordination of 52 organisations across the country which help schools and colleges engage with business organisations to support the curriculum.

STEMNET (Science, Technology, Engineering and Mathematics Network) is a network, one part of which is to support the teaching of physical science in schools (11-19), which includes the science of

<sup>231</sup> <http://farmwars.info/?p=12217> or <http://tinyurl.com/k4x7o2r> pages 12-14

<sup>232</sup> <http://www.gatsby.org.uk/Education/Projects/STEMNET.aspx>

<sup>233</sup> \* What Lord Sainsbury started has now been picked up by Government Funding bodies

GMOs. It concentrates on teaching technology but definitely not history. Canada also has branches of STEMNET and government approved textbooks promote the benefits of GM fruit and vegetables. “No scientific study has shown them to be harmful.”

Yet a recent study from the eastern townships of Quebec has found genetically modified endotoxin in maternal and foetal blood.<sup>234</sup>

In addition the Gatsby Foundation has funded many partnerships in Medicine and Neuroscience,<sup>235</sup> none of which appear to mention pesticides as aetiology for cancer.<sup>236</sup> Baron Sainsbury was elected Chancellor of the University of Cambridge in October 2011.

### **The philanthropist Rachel Pritzker funds the Breakthrough Organisation**

They call themselves ‘Ecomodernists’. An Ecomodernist Manifesto<sup>237</sup> in which the authors advocate agricultural intensification states: “Intensifying many human activities — particularly farming, energy extraction, forestry, and settlement — so that they use less land and interfere less with the natural world is the key to decoupling human development from environmental impacts.”

The Ecomodernists are wrong.

- It is not possible to decouple humans from the environment; human health depends on biodiversity
- The large dead zones in places like the Gulf of Mexico are not due to nitrogen eutrophication, but to masses of agricultural chemicals destroying aquatic systems
- Farms in the US where Monsanto’s Roundup® Ready crops are grown are biological deserts

### **The philanthropist James Martin funded The Oxford Martin School**

“It was made possible through the vision and generosity of [Dr James Martin](#) (1933-2013), who established the school with the largest benefaction made to Oxford in its history.”

The Oxford Martin School is a community of more than 200 academics based at the University of Oxford. Working in collaborative teams that cut across disciplines, they research complex, global issues that cannot effectively be understood and tackled by any single discipline alone. Martin’s vision was that the Oxford Martin School should be a unique, interdisciplinary research community designed to address the most pressing global challenges and opportunities of the 21st century, using rigorous interdisciplinary research to find solutions.

### **What is the Oxford Martin Commission for Future Generations?**

“A diverse group of highly respected global leaders has called for a radical shake-up in politics and business to deliver progress on climate change, reduce economic inequality, improve corporate practices and address the chronic burden of disease.”

The Commission was founded in 2005. In that case why has the Global Burden of Disease greatly increased in the UK and the US between 1990 and 2010?<sup>238</sup>

In the UK: “The performance of the UK in terms of premature mortality is persistently and significantly below the mean of EU15+ and requires additional concerted action... premature mortality from several major causes such as cardiovascular disease and cancers...In terms of premature mortality worsening ranks are most notable for men and women aged 20-54 years. Increases in Alzheimer’s disease, breast cancer, oesophageal cancer, congenital anomalies “and a growing burden of disability, particularly from mental disorders” are all acknowledged.

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<sup>234</sup> <http://www.sciencedirect.com/science/article/pii/S0890623811000566>

<sup>235</sup> <http://www.gatsby.org.uk/en/Neuroscience.aspx>

<sup>236</sup> <http://www.brainfacts.org/diseases-disorders/cancer/articles/2008/glioma-brain-tumors/>

<sup>237</sup>

<http://static1.squarespace.com/static/5515d9f9e4b04d5c3198b7bb/t/552d37bbe4b07a7dd69fcd9bb/1429026747046/An+Ecomodernist+Manifesto.pdf>

<sup>238</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23668584> UK health performance: findings of the Global Burden of Disease Study 2010



The Chairman of the Oxford Martin Commission is Pascal Lamy, Former Director-General of the World Trade Organization. It is of interest to note that in a case brought by the US, Canada, and Argentina in 2006, the World Trade Organization (WTO) ruled that the European moratorium on GM crops was illegal.

Sir John Beddington (former Chief Scientific Officer for England who supported GM crops to feed the world) is Senior Adviser and Professor of Natural Resources Management, and Lord Patten, Chairman of the BBC Trust, is a Commissioner. The BBC is promoting the agrochemical industry.

### **A new generation of population biologists began the science of mathematical ecology**

John Beddington was one of the first of a group of scientists that called themselves 'population biologists'. In fact, at a meeting in May 2010 in Dundee, some of Sir John's former students celebrated the fact that he had turned '*soft science into hard science*'. By this they meant he had led them away from studying organisms in the field to study them theoretically, in a far more comfortable place....in a University in front of a computer. They also said that he began '*the tradition of strong mathematical ecology in the UK*.' He also encouraged mathematics graduates to enter biology. He felt a biology degree wasn't necessary; just an ability to do statistics and mathematical modelling.

This new approach to studying biology has been heavily criticized in two recent papers:

Tewksbury *et al.* in Natural History's Place in Science and Society<sup>239</sup> the authors argue that natural history is of critical importance for learning about organisms, their links to communities and ecosystems and their biotic and abiotic interactions. Examples are provided of the vital importance of knowledge of natural history to many disciplines: human health, food security, conservation, management and recreation and the costs of mistakes of not having that knowledge.

An editorial in *Nature* in 2014<sup>240</sup> discussed the requirements to be awarded an undergraduate biology degree. Today a biology degree requires no courses in natural history, whereas in the US in 1950 it required two or more courses. Molecular biology, genetics, experimental biology, mathematical modelling, population biology and statistics have taken over. However, many of the fields rely on data, specimens and collections from natural history. The editors recommend that a biology diploma should not be awarded without a course in identifying organisms, learning the basic techniques for observing and recording data. (Thus, today there are senior entomologists who write papers about the effects of pesticides on pollinators, yet do not know the critical differences between the life cycles of bees and bumblebees).

This 'new order' of mathematical ecology in the UK has turned a whole generation of biologists away from field observations--- into an apocalyptic extinction crisis that they did not see coming---simply because they weren't looking at the environment.

### **Is the former Director General of the WTO there as Chairman to help the signing of TTIP? Pascal Lamy was a Bilderberger**

The purpose of the Transatlantic Trade and Investment Partnership apparently is to remove the regulatory differences between the US and European nations. In the Guardian on 05/11/2013 George Monbiot wrote: This US trade deal is a full frontal assault on democracy. To quote from his article:<sup>241</sup> "*the remarkable ability it would grant big business to sue the living daylights out of governments which try to defend their citizens. It would allow a secretive panel of corporate lawyers to overrule the will of parliament and destroy our legal protections.*" In a second article:<sup>242</sup> Chickens

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<sup>239</sup> [https://www.academia.edu/6565695/Natural\\_histories\\_place\\_in\\_science\\_and\\_society](https://www.academia.edu/6565695/Natural_histories_place_in_science_and_society)

<sup>240</sup> <http://www.nature.com/news/natural-decline-1.14966>

<sup>241</sup> <http://www.theguardian.com/commentisfree/2013/nov/04/us-trade-deal-full-frontal-assault-on-democracy>

<sup>242</sup> <http://www.theguardian.com/commentisfree/2013/dec/02/transatlantic-free-trade-deal-regulation-by-lawyers-eu-us>

in chlorine? That's what free trade's about. "Last month, while trying to defend the treaty, the British Minister Kenneth Clarke said something revealing: Investor protection is a standard part of free-trade agreements - it was designed to support businesses investing in countries where the rule of law is unpredictable, to say the least. George Monbiot asks: "**So what is it doing in an EU-US deal? Why are we using measures designed to protect corporate interests in failed states in countries with a functioning judicial system?**" There is widespread opposition in France to TTIP (TAFTA)<sup>243</sup> which is perceived as being advantageous to Corporations, but against the interest of the public. The German Magistrates Association rejects the proposal from the European Commission and sees neither a legal basis nor a need for such a court.<sup>244</sup>

So why is the British Government supporting it?

### **The Rockefeller/Lancet Report's only reference to potential loss of pollinators by neonicotinoid insecticides was the one from the Oxford Martin Commission, endorsing Syngenta studies<sup>245</sup>**

The first author, Prof Charles Godfray, was also Lead Author of The Future of Food and Farming Report (2011).<sup>246</sup> (Cooperation with Syngenta on GE wheat was discussed on Page 88.)

*"The experiments (on bees) described in Paras. 38 and 39 are true field experiments in the sense that the treatments involve the normal use of neonicotinoids, though only the Pilling et al.<sup>247</sup> study was successfully concluded and found no effects of neonicotinoids but with limited statistical power to detect differences."* The study by Pilling et al. that Godfray singled out for praise was the study conducted by scientists from Syngenta. They used a Syngenta product thiamethoxam. The other one was a Defra study by Thompson et al.,<sup>248</sup> in which the controls were contaminated by a third neonicotinoid. The Pilling Study was savaged by a group of independent scientists.<sup>249</sup> *"We conclude that the 4-year field study by Pilling et al. [2] exposing honeybees to thiamethoxam-treated crops has substantial scientific deficiencies. These include limited exposure periods, the use of pure thiamethoxam instead of a commercial preparation, the failure to quantify colony losses in winter and the fact that 70 % of colonies did not survive to the end of the experiment, as well as the lack of any statistical evaluation and a compromised reviewing process. Hence, the data and analyses presented do not allow any of the conclusions drawn by the authors concerning risks of systemic residues of thiamethoxam on honeybee colonies."*

None of the groups financed by philanthropists mention the word PESTICIDES, they all believe in intensive farming with GMO crops, which they say are needed in order to 'feed the world'.

## **There are doubts about the vaccine schedules and the safety of vaccines**

### **Are vaccines associated with autism?**

A study published in the September 2014 volume of the *Journal of Public Health and Epidemiology* reveals a significant correlation between autism disorder (AD) and MMR, Varicella (chickenpox) and Hepatitis-A vaccines. Using statistical analysis and data from the US Government, UK, Denmark and Western Australia, scientists at Sound Choice Pharmaceutical Institute (SCPI) found that increases in autistic disorder correspond with the introduction of vaccines using human fetal cell lines and retroviral contaminants.<sup>250</sup>

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<sup>243</sup> <http://rt.com/news/172012-france-celebrities-protest-tafta/>

<sup>244</sup> [https://www.foeeurope.org/sites/default/files/eu-](https://www.foeeurope.org/sites/default/files/eu-us_trade_deal/2016/english_version_deutsche_richterbund_opinion_ics_feb2016.pdf)

[us\\_trade\\_deal/2016/english\\_version\\_deutsche\\_richterbund\\_opinion\\_ics\\_feb2016.pdf](http://rspb.royalsocietypublishing.org/content/281/1786/20140558)

<sup>245</sup> <http://rspb.royalsocietypublishing.org/content/281/1786/20140558>

<sup>246</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/288329/11-546-future-of-food-and-farming-report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288329/11-546-future-of-food-and-farming-report.pdf)

<sup>247</sup> [http://www.thecre.com/oira\\_pd/wp-content/uploads/2013/11/PLOS-One-Syngenta.pdf](http://www.thecre.com/oira_pd/wp-content/uploads/2013/11/PLOS-One-Syngenta.pdf)

<sup>248</sup> <http://fera.co.uk/ccss/documents/defraBumbleBeeReportPS2371V4a.pdf>

<sup>249</sup> <http://link.springer.com/article/10.1186/s12302-015-0060-7>

<sup>250</sup> <http://soundchoice.org/scpiJournalPubHealthEpidem092014.pdf>

A review by the International Medical Council on Vaccination by Buttram & Frompovich:<sup>251</sup> Vaccines and Brain Inflammation: the effects of vaccinations on children's brains. In particular there was a prospective study of premature infants vaccinated and followed for three days; abnormal elevation of CRP level occurred in 85% of infants administered multiple vaccines and up to 70% of those given a single vaccine. Overall, 16% of infants had vaccine-associated cardiorespiratory events within 48 hours post-immunization. Furthermore, the Pourcyrus study noted that the DTaP vaccine was associated with the highest incidence of cardio-respiratory events in those infants given a single vaccine.<sup>252</sup> They found that the adjuvants aluminium, oils (such as peanut oil) and bacterial products could be responsible for inflammation. During the Congressional Hearings on Vaccine Safety (1999-Dec. 2004) an FDA panel was repeatedly asked, "*Where are your (safety) studies?*" The panel could only reply with unsatisfactory answers such as, "*They would be very expensive.*"

**Dr Andrew Wakefield: treated just like scientists who discovered problems with GM crops<sup>253</sup>**

In 1998 the *Lancet* published a case series on twelve children receiving treatment for bowel dysfunction at the Royal Free Hospital in London. The paper called for further study of a possible association between bowel disease and developmental delay, including cases of autism. It also noted that eight of the children's gastrointestinal and autistic symptoms began shortly after they received the MMR vaccination. There was a vigorous media campaign (and medical) to suggest that the paper was fraudulent and there were conflicts of interest. It was retracted from the *Lancet*. In 2010 at a GMC hearing, two of the authors Dr Andrew Wakefield and Prof John Walker-Smith, an eminent paediatric gastroenterologist, were struck off the Medical Register and Wakefield left for the US.

In 2012 Prof John Walker-Smith appealed and Justice John Mitting ruled on the appeal by Walker-Smith, saying that the GMC "*panel's determination cannot stand. I therefore quash it.*" He said that its conclusions were based on "*inadequate and superficial reasoning and, in a number of instances, a wrong conclusion.*" The verdict restored Walker-Smith's name to the medical register and his reputation to the medical community.<sup>254</sup> However, he had retired in 2001. In January 2012 Dr Wakefield sued the BMJ and the journalist Brian Deer for "false and defamatory allegations".<sup>255</sup> Needless to say the UK media did not report this. Were government agencies and the press (Brian Deer in The Sunday Times) protecting the interests of Merck and GlaxoSmithKline?

**Merck, the original manufacturer of vaccines, has a questionable record.**

Vaccine pioneer admits adding cancer-causing virus to Vaccine. In this interview, the late Dr. Maurice Hilleman (who died in 2005) the pioneer of vaccines working at Merck, makes some astounding revelations.<sup>256</sup> He admits that Merck drug company vaccines (Polio) had been deliberately contaminated with SV40, a cancer-causing monkey virus from 1953 - 63. According to two Merck scientists who filed a False Claims Act complaint in 2010 -- a complaint which has just now been unsealed -- vaccine manufacturer Merck knowingly falsified its mumps vaccine test data, spiked blood samples with animal antibodies, sold a vaccine that actually *promoted* mumps and measles outbreaks, and ripped off governments and consumers who bought the vaccine thinking it was "95% effective."<sup>257</sup>

In fact the Australian Government is making vaccinations mandatory in January 2016 and is punishing parents who refuse.<sup>258</sup>

<sup>251</sup> <http://www.vaccinationcouncil.org/2011/06/01/vaccines-and-brain-inflammation/>

<sup>252</sup> [http://www.jpeds.com/article/S0022-3476\(07\)00185-0/abstract](http://www.jpeds.com/article/S0022-3476(07)00185-0/abstract)

<sup>253</sup> [http://www.gmfreecymru.org/open\\_letters/Open\\_letter26Jan2011.html](http://www.gmfreecymru.org/open_letters/Open_letter26Jan2011.html)

<sup>254</sup> <http://healthimpactnews.com/2012/british-court-throws-out-conviction-of-autismvaccine-md-andrew-wakefields-co-author-completely-exonerated/>

<sup>255</sup> [http://www.naturalnews.com/034629\\_Andrew\\_Wakefield\\_BMJ\\_Brian\\_Deer.html](http://www.naturalnews.com/034629_Andrew_Wakefield_BMJ_Brian_Deer.html)

<sup>256</sup> [https://www.youtube.com/watch?v=13QiSV\\_lrDQ](https://www.youtube.com/watch?v=13QiSV_lrDQ)

<sup>257</sup> [http://www.naturalnews.com/036328\\_Merck\\_mumps\\_vaccine\\_False\\_Claims\\_Act.html#](http://www.naturalnews.com/036328_Merck_mumps_vaccine_False_Claims_Act.html#)

<sup>258</sup> <https://www.humanservices.gov.au/customer/news/immunisation-requirements-are-changing>

**In 2010 GSK Pandemrix vaccine was recommended for swine flu: narcolepsy was a rare complication: why did the Government underwrite it so the taxpayer has to pay the bill?**

*“Reports indicate that dozens of Pandemrix victims from the UK will be awarded about \$1.5 million each in British pounds for permanent health damage caused by GSK’s Pandemrix vaccine.<sup>259</sup> One in 16,000 people who took the vaccine, it turns out, are said to have developed narcolepsy and/or cataplexy, two neurological diseases that disrupt normal sleep patterns and muscle function. But rather than be held responsible, GSK is actually billing the UK government the equivalent of about \$92 million to pay for damages, which means taxpayers are footing the bill. The Work and Pensions Department (WPD) would only pay out for 60% disability.”* The WPD refused to pay until a [major study](#) of four- to 18-year-olds by the Health Protection Agency found that around one in every 55,000 vaccinations was associated with narcolepsy.<sup>260</sup> The conclusion of the BMJ article was that: *The increased risk of narcolepsy after vaccination with ASO3 adjuvanted pandemic A/H1N1 2009 vaccine indicates a causal association, consistent with findings from Finland. Because of variable delay in diagnosis, however, the risk might be overestimated by more rapid referral of vaccinated children.* A spokesman for GSK said it had details of around 900 people from 14 countries who had narcolepsy and were vaccinated.

**British Medical Journal questions the independence of the decision to market the Bexero vaccine**  
**[Big food, big pharma: is science for sale](#)<sup>261</sup>**

Editor’s Choice: Elizabeth Loder, acting head of research *The BMJ*. *“We have grown accustomed to allegations of conflicts of interest, biased research, and manipulative marketing on the part of the drug industry. Sadly, this is not the only area where there is reason to be concerned about corporate influences on public policy. Crowcroft and colleagues examine the controversy over the UK government decision on public funding for a new vaccine (Bexsero) for meningococcal disease.<sup>262</sup> The problems they outline are all too familiar: “lobbying may have influenced the alteration” of the original decision. Links between some “vocal clinicians” and the drug industry were not disclosed. The lack of transparency makes it unsurprising that “conspiracy theories emerged, including the idea of undue influence of industry.” Crowcroft et al had said: “Controversy about the evidence, economics, ethics, lobbying, and decision making surrounding a new vaccine for serogroup B meningococcal disease should trigger change in the way we develop recommendations for new vaccine.”*

**Merck and GlaxoSmithKline (GSF) donated vaccines Gardasil and Cevaxix to prevent cervical cancer through the Gates Foundation in India that have caused illnesses and seven deaths; the trial was done without valid consent forms**

Narayana Kumar, [‘Controversial vaccine studies: Why is Bill & Melinda Gates Foundation under fire from critics in India?’](#) 31 August 2014 *“Several months after the vaccines were administered, many girls started falling ill and by 2010 five of them died in Andhra Pradesh and two died in Gujarat.<sup>263</sup> A standing committee on health and family welfare that investigated the irregularities pertaining to the observation studies in India tabled its report a year ago, on August 30. The committee said it was “deeply shocked to find that in Andhra Pradesh out of the 9,543 [consent] forms, 1,948 forms have thumb impressions while hostel wardens have signed 2,763 forms. In Gujarat, out of the 6,217 forms 3,944 have thumb impressions and 5,454 either signed or carried thumb impressions of guardians. The data revealed that a very large number of parents or guardians are illiterate and could not even write in their local languages, Telugu or Gujarati.”*

<sup>259</sup> [http://www.naturalnews.com/050767\\_swine\\_flu\\_vaccine\\_GlaxoSmithKline\\_Pandemrix.html](http://www.naturalnews.com/050767_swine_flu_vaccine_GlaxoSmithKline_Pandemrix.html)

<sup>260</sup> <http://www.bmj.com/content/346/bmj.f794#aff-3>

<sup>261</sup> <http://www.bmj.com/content/350/bmj.h795>

<sup>262</sup> <http://www.bmj.com/content/350/bmj.h308>

<sup>263</sup> [http://articles.economictimes.indiatimes.com/2014-08-31/news/53413161\\_1\\_hpv-vaccine-cervarix-human-papilloma-virus](http://articles.economictimes.indiatimes.com/2014-08-31/news/53413161_1_hpv-vaccine-cervarix-human-papilloma-virus)

Earlier this month, taking a serious view of the death of seven tribal girls in the context of the observation studies, the Supreme Court asked the Drug Controller General of India (DCGI) and the Indian Council of Medical Research (ICMR) to explain how permissions were given.

In 2016, GlaxoSmithKline was fined £37.6m by the UK competition watchdog for paying drugmakers in return for delaying cheaper generic versions of Seroxat.<sup>264</sup>

## Many diseases in the UK and the US are spiralling out of control

Many diseases in the UK and the US are spiralling out of control; obesity, diabetes, congenital anomalies, cancers, etc. The Government and the NHS blame the people, but chemicals and corporations are to blame. Increasing obesity, autism, Alzheimer's, Diabetes, liver failure, kidney failure, heart disease, mental disorders, depression, suicide, hypercholesterolaemia and cancers have been acknowledged. They have been blamed on public lifestyle (such as overeating, lack of exercise, alcoholism and smoking), failures of GPs, isolation or global warming. The rest have been ignored. Congenital anomalies, Parkinson's, Motor Neurone Disease, multiple sclerosis, Brain Tumours, Lymphomas, leukaemia, infertility, cataracts, inflammatory bowel disease, degenerative joint disease are amongst the medical conditions that are increasing. Britain and the US, whose farming systems depend on chemicals. Britain must be the only country in the EU where the citizens haven't been told that glyphosate has been declared a probable carcinogen to humans, according to WHO International Agency for Research into Cancer (IARC).<sup>265</sup>

### Epidemics of diabetes, obesity and autism in Scotland (2013)

#### Global epidemics of diabetes

Ms Judson, Scottish Director of Diabetes UK, was quoted as saying: "Since 2006 the incidence of diabetes had increased by 25.6% and the consequences of diabetes such as blindness and the need for amputation were also increasing in younger age groups." She said people as young as 13 have been diagnosed with Type 2 diabetes.<sup>266</sup>

#### Global epidemic of obesity

A similar warning about obesity had come from Dr Andrew Fraser representing the Royal College of Physicians of Edinburgh on 10<sup>th</sup> March 2013.<sup>267</sup>

#### Global epidemics of Autism and Attention Deficit Hyperactivity Disorder (ADHD)

On June 12/13<sup>th</sup> 2013, an autism conference was held in Edinburgh.<sup>268</sup> Dr Martha Herbert, an expert on autism from Harvard Medical School, was an invited speaker. Dr Herbert believes the culprit is an environmental toxin in autistic children that interferes with nutrient absorption. "We need to get them built up again, getting the gut micro-flora sorted out". The US has had an even more dramatic (and earlier) rate of increase than in Scotland (261% for boys and 385% for girls between 1997 and 2008)<sup>269</sup>.

#### In the US:

- In 1970: one child in 10,000 was born with Autism
- In 2007: one child in 150 was born with Autism
- In 2009: one child in 100 was born with Autism
- In 2013: one child in 50 was born with Autism

<sup>264</sup> <http://www.theguardian.com/business/2016/feb/12/glaxosmithkline-fined-anti-competitive-behaviour-seroxat>

<sup>265</sup> [http://www.thelancet.com/pdfs/journals/lanonc/PIIS1470-2045\(15\)70134-8.pdf](http://www.thelancet.com/pdfs/journals/lanonc/PIIS1470-2045(15)70134-8.pdf) Carcinogenicity of tetrachlorvinphos, parathion, malathion, diazinon, and glyphosate.

<sup>266</sup> <http://www.thetimes.co.uk/tto/health/news/article3799473.ece>

<sup>267</sup> <http://www.scotsman.com/news/health/doctors-warn-obesity-is-lifestyle-choice-for-scots-1-2828840>

<sup>268</sup> <http://www.scotsman.com/lifestyle/autism-unlocking-a-generation-1-2944710>

<sup>269</sup> 87222060-CDC-Autism-Study-March-2012.pdf

If the rate continues to increase 'pro-rata' Dr Stephanie Seneff predicts that by 2025, one child in two in the US will develop Autism.<sup>270</sup> The increases in rates of autism have close correlations in the US with glyphosate sprayed on crops and percentage of GM crops grown.<sup>271</sup>

#### In the UK

- In 2012 one child in 100 was born with Autism

#### So, Britain is only 3 years behind the US.

The UK has been receiving glyphosate residues in staple foods since 1980 because farmers have been spraying pre-harvest and throughout the crop year.<sup>272</sup> Their advice on how and when to use glyphosate comes from <http://www.glyphosate.eu/>. The website produces advice via a series of downloads for farmers. [Glyphosate.eu](http://www.glyphosate.eu/) in turn receives advice straight from the European Glyphosate Task Force (GTF). This is a consortium of 24 companies joining resources and efforts in order to renew the European glyphosate registration with a joint submission.<sup>273</sup>

#### Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study<sup>274</sup>

The Centre for Longitudinal Studies based at the Institute of Education University of London published their latest report on 9 November 2013.

Their key findings of the cohort at age 42 were that:

- The generation born in 1970 is considerably more likely to be overweight or obese than those born 12 years earlier were at the same age.
- Men born in 1970 are far more likely to be overweight than women.<sup>275</sup>

#### **Obesity levels in England are second only to the US and are running a parallel course to the US Historical and projected overweight rates in OECD countries**<sup>276</sup>

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<sup>270</sup> <http://www.youtube.com/watch?v=JB4GFyjewHQ>

<sup>271</sup> <http://www.organic-systems.org/journal/92/abstracts/Swanson-et-al.html>

<sup>272</sup> [http://www.glyphosate.eu/system/files/sidebox-files/agronomic\\_benefits\\_of\\_glyphosate\\_for\\_european\\_agriculture.pdf](http://www.glyphosate.eu/system/files/sidebox-files/agronomic_benefits_of_glyphosate_for_european_agriculture.pdf)

<sup>273</sup> <http://www.glyphosetaskforce.org/>

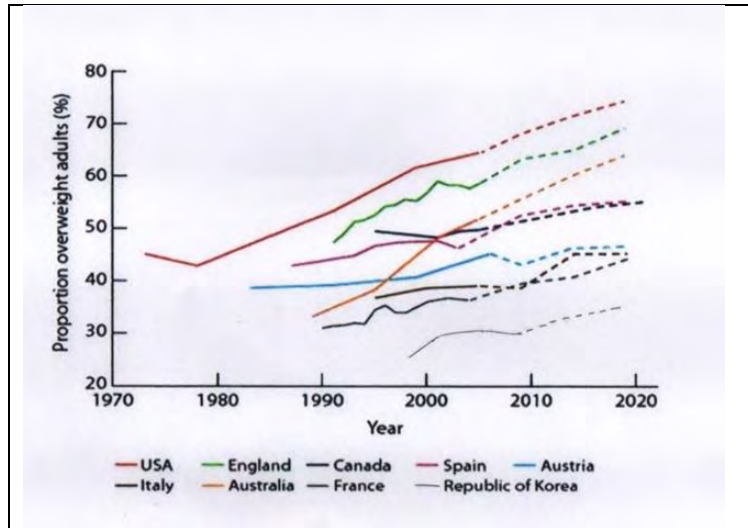
<sup>274</sup> [Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study at age 42](#)

<sup>275</sup> The use of glyphosate for desiccation on both barley and wheat was accepted by the brewing and distilling industries in 2007 therefore it is probable that men are more likely to be overweight because of the consumption of beer or whisky with glyphosate residues

<http://www.grainfarmers.co.uk/seeddownloads/Roundup%20on%20seed%20%20milling%20and%20malting.pdf>

<sup>276</sup> Healthy Choices OECD Health Ministerial Meeting, Paris, 7-8 October 2010

<http://www.oecd.org/health/ministerial/46098333.pdf>



Some of the UK population has been exposed to glyphosate residues in foods since 1980, even without growing GM Glyphosate-Tolerant crops.<sup>277</sup> The US has had GM crops since 1996. The third area with the most overweight adults is Australia, where obesity levels started to rise steeply in 1990 and by 2000 have overtaken Spain and Canada, both of which have GMs. There are 553 glyphosate products registered in Australia. Glyphosate use on GM crops is accelerating. GM canola was registered in 2003, but bans in NSW and Victoria were lifted in 2008.<sup>278</sup> Canola has been registered to be desiccated since October 2014<sup>279</sup> and sunflowers since 2012.<sup>280</sup> However, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is promoted as Australia's 'pre-eminent public scientific research body'. "Although ostensibly publicly funded, CSIRO has, in reality, been encouraged to get 30% of its funding from business, with the CSIRO top management encouraging its staff to go to 40%." According to John Stocker, CSIRO's former Chief Executive: "Working with the transnationals makes a lot of sense, in the context of market access. There are very few Australian companies that have developed market access in the United States, in Europe and in Japan, the world's major marketplaces. Yes, we do find that it is often the best strategy to get into bed with these companies."<sup>281</sup>

Children: Almost one in four Australian children (23%) is overweight or obese and one in three expected to be by 2025 (AIHW 2012). Children who are obese are more likely than other children to develop asthma, type 2 diabetes, cardiovascular conditions and some cancers. Cancer Research UK website shows similar trends for certain cancers.

**Parkinson's, Alzheimer's and other Dementias, and Motor Neurone Disease**

In the UK Statistics: Every hour, someone in the UK is told they have Parkinson's. One person in every 500 has Parkinson's. That's about 127,000 people in the UK.<sup>282</sup>

Substantial increase in neurological deaths 1979-2010

Ten major developed Western countries and 10 smaller Western countries were studied.<sup>283</sup> There was a major reduction in general mortality in all 20 countries, but total neurological deaths rose

<sup>277</sup> <http://www.hgca.com/media/185527/is02-pre-harvest-glyphosate-application-to-wheat-and-barley.pdf>

<sup>278</sup> <http://www.sbs.com.au/news/article/2012/11/15/factbox-gm-foods-australia>

<sup>279</sup> <http://www.farmweekly.com.au/news/agriculture/cropping/general-news/new-canola-weed-control-option/2714416.aspx>

<sup>280</sup> [http://www.australianoilseeds.com/about\\_aof/news/glyphosate\\_as\\_a\\_desiccant\\_in\\_sunflowers](http://www.australianoilseeds.com/about_aof/news/glyphosate_as_a_desiccant_in_sunflowers)

<sup>281</sup> <http://www.gmwatch.org/latest-listing/1-news-items/13325-csiro-in-bed-with-multinationals>

<sup>282</sup> <http://www.parkinsons.org.uk/content/facts-journalists#sthash.EPohX00v.dpuf>

<sup>283</sup> <http://dx.doi.org/10.1016/j.phe.2012.12.018> Pritchard, C. et al. Changing patterns in mortality from neurological deaths in the 10 major developed countries: 1979-2010 Public Health (2013)

substantially between 1980 and 2010 in both sexes in 16 out of 20 western countries; in particular early onset Parkinson's, Alzheimer's and other Dementias, and Motor Neurone Disease. Female neurological deaths in 9 out of 10 countries were greater than males. The authors thought the causes were likely to be epigenetic rather than hereditary. *"Moreover, looking back 30 or more years the concept of early dementia or the need for the creation of a Young Parkinson's Disease Society in Britain would have seemed a tautology."*

Another paper elucidated the pathological mechanisms by which the herbicide glyphosate could cause Parkinson's disease and other neurodegenerative disorders.<sup>284</sup>

### **Increase in Total Neurological Deaths (TND) in the US**

Pritchard & Rosenorn-Lanng published a paper in July 2015, using the most recent figures from the WHO: 'Neurological deaths of American adults (55-74) and the over 75's by sex compared with 20 Western countries 1989-2010: Cause for concern'.<sup>285</sup> The authors compared the rates for TNDs in the US with those from 20 Western countries. The diseases were divided into two categories: Alzheimer's and other dementias, and diverse neurological diseases such as Parkinson's, Motor Neurone Disease, neuromuscular diseases, Creutzfeldt-jakob Disease (CJD) and new variant CJD. Age ranges were 55-74 and 75+. Male were separated from female. TND deaths in males aged 55-74 in the US increased by 82% to 627 pm compared with an average in the 20 countries of 2% to 503 pm. TND deaths in females aged 55-74 in the USA increased by 48% to 560 pm.

The USA rate of TND deaths in the 75+ group in males increased from 3336 pm to 12,271 pm, a more than two-fold (368%) rise over the period. The USA rate for females 75+ rose from 3206 pm to 21,253 pm, a more than five-fold (663%) increase. This was the largest increase of all countries under review. In the over 75's group, TND rates ranged from the highest in Finland (24,797 pm), to the lowest in Greece at (1479 pm). The TND average rates for age 75+ for 20 countries increased by 185% with a doubling of rates in 17 countries. It should be noted that in every country female rates rose more than males over the years 1989-2010. As a control, the authors compared TND with cancer deaths and circulatory deaths for all countries, which had decreased. The funding for cancer and heart disease is greater than that for neurological diseases.

### **Congenital anomalies have increased in the UK compared with Sweden**

Even though GM Roundup Ready crops haven't yet been introduced into the UK, glyphosate has been sprayed pre-harvest on non-organic crops since 1980.

Deaths from in the under 5s in the UK are twice those of Sweden<sup>286</sup> and the three main causes are prematurity, congenital malformations and infections. The mortality rates for the three main causes of death in the UK (prematurity, congenital malformations and infections) were 138.5, 112.1 and 63.9, respectively, per 100 000 children for the three years 2006-2008. The mortality rates for the same three conditions in Sweden were 10.1, 88.6 and 34.8, respectively.

### **Neural tube defects (NTD) could have been reduced in the UK by introducing folate into flour**<sup>287</sup>

From 1991 to 2012, the prevalence of NTD pregnancies was 1.28 (95% CI 1.24 to 1.31) per 1000 total births (19% live births, 81% terminations and 0.5% stillbirths and fetal deaths  $\geq 20$  weeks' gestation). The authors state: *"If the USA levels of folic acid fortification from 1998 onwards had been adopted in the UK, an estimated 2014 fewer NTD pregnancies would have occurred."*

### **Diabetes, obesity and the gut microbiome: Monsanto's false claims about glyphosate**

<sup>284</sup> <http://www.sciencedirect.com/science/journal/08920362>

<http://www.activistpost.com/2012/04/roundup-herbicide-linked-to-parkinsons.htm>

<sup>285</sup> [http://surgicalneurologyint.com/surgicalint\\_articles/neurological-deaths-of-american-adults-55-74-and-the-over-75s-by-sex-compared-with-20-western-countries-1989-2010-cause-for-concern/](http://surgicalneurologyint.com/surgicalint_articles/neurological-deaths-of-american-adults-55-74-and-the-over-75s-by-sex-compared-with-20-western-countries-1989-2010-cause-for-concern/)

<sup>286</sup> <http://adc.bmj.com/content/early/2015/07/15/archdischild-2014-308059>

<sup>287</sup> <http://adc.bmj.com/content/early/2015/11/13/archdischild-2015-309226.full>



Since 1996, the number of people with diabetes in the UK has more than doubled from 1.4 million to 3.3 million; 90 per cent of people with diabetes have Type 2 diabetes.<sup>288</sup>

Monsanto and pesticide regulators say that glyphosate inhibits an enzyme that is essential for the biosynthesis of certain amino acids and claim that this enzyme is not found in animals and humans.<sup>289</sup>

- Humans and animals have exactly the same pathway as in plants; mammals can only absorb nutrients via the bacteria in their gut; the gut microbiome. **The gut microbiome is the collective genome of organisms inhabiting our body.** Glyphosate residues in food disrupt the pathway which involves 5-enolpyruvylshikimate-3-phosphate synthase. Beneficial bacteria are destroyed, causing inflammatory changes in the gut lining, destroying its absorptive capacity in humans and animals, chelating (extracting or grabbing) minerals, depleting micronutrients and interfering with multiple metabolic processes resulting in obesity, type 2 diabetes, autism, dementia, cancers, inflammatory bowel diseases (Ulcerative Colitis and Crohn's disease), celiac disease, hypercholesterolaemia and many other disorders associated with those on a Western diet.<sup>290</sup>

Chatelier, E.L. *et al.* Richness of human gut microbiome correlates with metabolic markers *Nature* 29 August 2013; **500**: 541-550.<sup>291</sup> *"We are facing a global metabolic health crisis provoked by an obesity epidemic."* In a multi-author study of obese and non-obese individuals, those with *"low bacterial richness in the gut (23% of the population) are characterized by more marked overall adiposity, insulin resistance and dyslipidaemia and a more pronounced inflammatory phenotype when compared with those with high bacterial richness...Low richness of gut microbiota has been reported in patients with inflammatory bowel disorder...Also notable diversity differences were observed between the urban US population and rural populations from two developing countries"*. Current research is underway to try to find the links between obesity, type 2 diabetes and cancers.

Diet rapidly and reproducibly alters the human gut microbiome<sup>292</sup> *"Long-term dietary intake influences the structure and activity of the trillions of microorganisms residing in the human gut" ... In concert, these results demonstrate that the gut microbiome can rapidly respond to altered diet, potentially facilitating the diversity of human dietary lifestyles.*

### **A Class Action Lawsuit taken out by Los Angeles County against Monsanto for false advertising**<sup>293</sup>

Monsanto has misled everyone, including the German Rapporteur Member State, the European Food Safety Authority and the UK Chemicals Regulation Directorate.

The Class Action Lawsuit taken out by Los Angeles County against Monsanto is for false advertising.

### **Global burden of disease study 2010 shows declines in the health of the UK and US**

Between 1990 and 2010, Britain and the US have slipped down the scale of health compared with other wealthy nations and the patterns of disease are remarkably similar.

In the US: *"However, morbidity and chronic disability now account for nearly half of the US health burden, and improvements in population health in the United States have not kept pace with advances in population health in other wealthy nations"*.<sup>294</sup>

<sup>288</sup> <https://www.diabetes.org.uk/Documents/Position%20statements/Facts%20and%20stats%20June%202015.pdf>

<sup>289</sup> [http://www.bfr.bund.de/en/press\\_information/2014/03/glyphosate\\_no\\_more\\_poisonous\\_than\\_previously\\_assumed\\_although\\_a\\_critical\\_view\\_should\\_be\\_taken\\_of\\_certain\\_co\\_formulants-188898.html](http://www.bfr.bund.de/en/press_information/2014/03/glyphosate_no_more_poisonous_than_previously_assumed_although_a_critical_view_should_be_taken_of_certain_co_formulants-188898.html)

<sup>290</sup> <http://www.mdpi.com/1099-4300/15/4/1416>

<sup>291</sup> <http://www.nature.com/nature/journal/v500/n7464/abs/nature12506.html>

<sup>292</sup> <http://www.nature.com/nature/journal/vaop/ncurrent/full/nature12820.html>

<sup>293</sup> <http://www.monsantoclassaction.org/>

<sup>294</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23842577> The state of US health, 1990-2010: burden of diseases, injuries, and risk factors

In the UK: “The performance of the UK in terms of premature mortality is persistently and significantly below the mean of EU15+ and requires additional concerted action... premature mortality from several major causes such as cardiovascular disease and cancers...In terms of premature mortality worsening ranks are most notable for men and women aged 20-54 years. Increases in Alzheimer’s disease, breast cancer, oesophageal cancer, congenital anomalies “and a growing burden of disability, particularly from mental disorders” are all acknowledged.<sup>295</sup>

### **Violent Behavior: A Solution in Plain Sight**

Why is there an increasing incidence in unsociable behaviour, disorder, aggression, gun crime, and brutality in the US and the UK? This paper by Sylvia Onusic, PhD, CNS, LDN, seeks reasons for the increase in violent behaviour in America, especially among teenagers. She identifies malnutrition, vitamin and micronutrient deficiency as potent causes of aberrant behaviour, crime and the spectrum of autistic diseases. She says: “Some children have been corrected by a proper diet free of junk food.”<sup>296</sup> These are precisely the effects of exposure to glyphosate and other chemicals.

### **The Health Care Doctors Forgot: Why Ordinary Food Will Be the Future of Medicine**

Prof T Colin Campbell also identifies our “neglect of the remarkable ability of nutrition to promote health and decrease illness.”<sup>297</sup> He quotes Hippocrates: “Let food be thy Medicine.” “Can diet cure disease, and not just prevent it? Scientific evidence is accumulating that diets which emphasize consumption of plants and which avoid meat and dairy products can rapidly reverse common and life-threatening chronic diseases such as diabetes and heart disease. For these and other common diseases research is showing that a diet-based cure is much more effective than current medical treatments which are largely ineffectual, expensive, and plagued by side effects. These important facts about the power of nutrition are not widely known, however. That is because they simultaneously challenge the food industry, the pharmaceutical industry, and the medical profession.” Professor Campbell also asked why cancer research has stalled.<sup>298</sup>

*The non-mutagenic nutrition effects we observed in our research on cancer development closely resemble the nutrition-based effects known to dramatically reverse other diseases, including advanced coronary heart disease and diabetes (Esselstyn 2014 and Barnard 2009). These nutrition-based effects have been observed as a result of the dietary lifestyle composed of whole plant-based foods without added oil and refined carbohydrates. The benefits are truly remarkable, broad in scope, and surprisingly rapid in response (Campbell and Campbell 2005; Campbell 2013).*

### **Increases in suicides, depression and anti-depressant medication**

Researchers from the Nuffield Trust and the Health Foundation identified a long-term trend of increasing prescriptions of antidepressants, rising from 15 million items in 1998 to 40 million items in 2012.<sup>299</sup> Suicides in males have increased steadily since 2007.<sup>300</sup> This was the first year that men aged 45 to 59 showed the highest suicide rate, 25.1 per 100,000, overtaking those aged 30 to 44, who had previously recorded the highest rate from 1995 to 2012. The rate among older men aged 60-74 also rose significantly from its 2012 level to 14.5 per 100,000. ONS records show 98 children under 15 killed themselves in the UK from 2005 to 2014, 59 boys and 39 girls.<sup>301</sup>

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<sup>295</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23668584> UK health performance: findings of the Global Burden of Disease Study 2010

<sup>296</sup> <http://www.westonaprice.org/environmental-toxins/violent-behavior-a-solution-in-plain-sight/pdf>

<sup>297</sup> <http://www.independentsciencenews.org/health/the-healthcare-doctors-forgot-ordinary-food-will-be-the-new-medicine>

<sup>298</sup> <https://www.independentsciencenews.org/health/why-cancer-research-has-stalled/>

<sup>299</sup> <http://www.theguardian.com/society/2014/may/28/-sp-antidepressant-use-soared-during-recession-uk-study>

<sup>300</sup> <http://www.theguardian.com/society/2015/feb/19/number-of-suicides-uk-increases-2013-male-rate-highest-2001>

<sup>301</sup> <http://www.theguardian.com/society/2016/feb/04/female-suicide-rate-in-england-highest-for-a-decade-in-2014-figures-reveal>

### **Link between mid-life obesity and dementia: a twin study<sup>302</sup>**

*Both overweight and obesity at midlife independently increase the risk of dementia, Alzheimer's disease and vascular dementia. Genetic and early-life environmental factors may contribute to the midlife high adiposity-dementia association.*

### **Cancer Research UK (CRUK) website shows increasing trends in cancers**

The Cancer Research UK (CRUK) website shows similarly increasing trends over time in graphs from 1975 for thyroid cancer,<sup>303</sup> breast cancer,<sup>304</sup> prostate cancer,<sup>305</sup> malignant melanoma,<sup>306</sup> liver cancer,<sup>307</sup> myeloma,<sup>308</sup> malignant brain tumours<sup>309</sup> and anal cancer.<sup>310</sup>

### **UK Brain Tumour Research Statistics<sup>311</sup>**

- Brain tumours kill more children and adults under 40 than any other cancer
- Between 1970 and 2014 brain cancer has increased by 23% for men and 25% for women
- Brain tumours kill more children than leukaemia or any other cancer

### **Survival rates: UK cancer survival rates trail 10 years behind other European countries**

Cancer survival rates in the UK are still lagging more than two decades behind those achieved in many European countries, according to new analysis by campaigners on 25<sup>th</sup> March 2015.<sup>312</sup> The Concord-2 global study looked at survival rates in 67 countries for patients diagnosed with lung, breast, colon and stomach cancers in 1995 to 1999, compared with levels in 2005 to 2009.

### **Cancers in farm workers, rural residents & those who use biocides at home and in school**

#### **Excess risk of cancers in those exposed to pesticides (farming, commercial, home and garden)<sup>313</sup>**

*Abstract: A growing number of well-designed epidemiological and molecular studies provide substantial evidence that the pesticides used in agricultural, commercial, and home and garden applications are associated with excess cancer risk. This risk is associated both with those applying the pesticide and, under some conditions, those who are simply bystanders to the application. In this article, the epidemiological, molecular biology, and toxicological evidence emerging from recent literature assessing the link between specific pesticides and several cancers including prostate cancer, non-Hodgkin lymphoma, leukemia, multiple myeloma, and breast cancer are integrated. Rather than wait for human carcinogens to be identified, several European countries, including Sweden, Denmark, the Netherlands, and others, have initiated pesticide use reduction policies that have resulted in substantially diminished pesticide use overall. In the United States, a nationwide use reduction policy has met with resistance politically because of disagreements about the net benefit to health and debate concerning the disproportionate economic impact of these policies on selected groups (e.g. farmers, food processors, and pesticide manufacturers) and on food prices. Nonetheless,*

<sup>302</sup> <http://www.ncbi.nlm.nih.gov/pubmed/21536637>

<sup>303</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/thyroid/incidence/>

<sup>304</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/breast/incidence/#trends>

<sup>305</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/prostate/incidence/uk-prostate-cancer-incidence-statistics#trends>

<sup>306</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/skin/incidence/uk-skin-cancer-incidence-statistics#trends>

<sup>307</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/liver/incidence/#trends>

<sup>308</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/myeloma/incidence/#trends>

<sup>309</sup> [http://www.cancerresearchuk.org/sites/default/files/cstream-node/inc\\_asr\\_gb\\_brain\\_2.pdf](http://www.cancerresearchuk.org/sites/default/files/cstream-node/inc_asr_gb_brain_2.pdf)

<sup>310</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/anal-cancer/Incidence/#Trends>

<sup>311</sup> [www.braintumourresearch.org/statistics](http://www.braintumourresearch.org/statistics)

<sup>312</sup> <http://www.theguardian.com/society/2015/mar/24/uk-cancer-survival-rates-trail-10-years-behind-those-in-european-countries>

<sup>313</sup> <http://onlinelibrary.wiley.com/doi/10.3322/caac.21170/full>

Michael C. R. Alavanja, Matthew K. Ross, Matthew R. Bonner Increased Cancer Burden Among Pesticide Applicators and Others Due to Pesticide Exposure. *CA Cancer J Clin* 2013 American Cancer Society

*the available scientific evidence does strongly suggest that pesticides do cause cancer in both those who use the pesticides directly and those who are exposed because of applications others make ... “...yet the identification of specific pesticides as human carcinogens has not yet been made.”*

**Georgina Downs Founder of UK Pesticides Campaign in 2001; RURAL RESIDENTS ARE NOT PROTECTED; rural resident’s complaints were dismissed by Government Committees and Defra**

Just as with aerial spraying of pesticides, the Government didn’t think it necessary to legislate in order to protect the people in the countryside from spraying multiple toxic pesticides, as its response to EU Directive (2009/128/EC) shows. Lord Henley said that the British had an “*ideological dislike of legislation*”, there were “*dangers of over-legislating*” and repeated his assertion that all decisions on the EU Directive (2009/128/EC) were based on “*robust scientific evidence.*”

Article 11 Use of pesticides in specific areas

**EU Directive Advice:** *Use of pesticides can be particularly dangerous in very sensitive areas such as Natura 2000 sites protected in accordance with Directives 79/409/EEC and 92/43/EEC. In other places such as public parks and garden, sports and recreation grounds, school grounds and children’s play grounds, and in the close vicinity of healthcare facilities, the risks from exposure to pesticides is high. In these areas, the use of pesticides should be minimised or prohibited. When pesticides are used, appropriate risk management measures should be established and low-risk pesticides as well as biological control measures should be considered in the first place.*

**Government Response:** *We do not consider it necessary to prohibit the use of pesticides in public spaces or conservation areas or to impose new statutory controls on pesticide use in these areas. We believe that the UK can meet its obligations under the Directive through existing statutory and voluntary controls and develop additional voluntary measures.*

Georgina Downs founded UK Pesticides Campaign in 2001.<sup>314</sup> She has campaigned fearlessly for rural residents. “*People move to the countryside thinking it will be a healthy environment to bring up their children and do not know about the dangers and risks inherent in the spraying of poisonous chemicals on surrounding fields, until they themselves suffer adverse effects on their health.*” She complained that Defra has only assessed bystander exposure (as discovered by the RCEP before it was closed down).

- Residents are **not** the same as transient *bystanders* because they are exposed all the year round not to just one pesticide but a cocktail of toxic pesticides. The guidelines **fail entirely** to address the chronic, long-term, repeated and cumulative exposure of residents to a cocktail of pesticides. Ms Downs argues: “*Yet residents are clearly a group with one of the highest levels of exposure to pesticides, considering the frequency and duration of exposure. This includes repeated acute exposures, as well as chronic exposures, all over the long-term, to mixtures of pesticides, regularly sprayed, in the locality of residents’ homes, as well as schools, playgrounds throughout every year, and in many cases for decades.*” **The existing UK Government policy and approvals system fundamentally fails to protect people in the countryside from pesticides, particularly rural residents.**
- There are serious flaws in the approach to exposure and risk assessment for public health.
- The fact that, to date, there has never been **any** assessment in the UK of the risks to health for the long term exposure for those who live in the locality of pesticide sprayed fields, and/or who go to school in the locality of sprayed fields, means that under EU law **pesticides should never have been approved for use in the first place for spraying in the locality of residents’ homes, schools, children’s playgrounds, among other areas.** This was confirmed in the Report of the Royal Commission on Environmental Pollution below.

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<sup>314</sup> <http://www.pesticidescampaign.co.uk/>

- In its Report on Crop Spraying and the Health of Residents and Bystanders, in 2006<sup>315</sup> the RCEP confirmed this. Amongst other criticisms of the Government lax policy, the Commission said: ***“We have been unimpressed by the arrangements for monitoring human health. We have significant concerns about the assessment of resident and bystander exposure. In the light of the lack of rigour in the underlying science, we have been surprised at the level of confidence expressed in advice to Ministers and the level of assurance given to the public about the safety of residents and bystanders potentially exposed to agricultural pesticides. We have concluded that the level of these assurances is not robustly founded in scientific evidence. Limitations in the data and alternative views of the science, as well as political and ethical judgements implicit in this advice, all need to be clearly acknowledged.”***

Ms Downs has fought legal battles against Defra. She had a landmark victory in the High Court in November 2008 that ruled that the UK Government’s policy on pesticides was not in compliance with European legislation. It was the first known legal case of its kind to reach the High Court to directly challenge the Government’s pesticide policy and approach regarding crop-spraying in rural areas. However, the Court of Appeal overturned the High Court Judgment in May 2009. Chief Executive, Kerr Wilson’s Witness Statements cited various reasons for preserving the *status quo*. They were related to alleged financial and economic impacts on manufacturers, farmers and distributors, or the impact on agricultural productivity. On behalf of Defra he did not display any concern whatsoever in relation to the protection of public health. His main concern was with protection of industry and business interests. *“The annual market value of pesticide sales is approximately £490m which delivers benefits to farmers, significantly improving agricultural productivity...If, as a result of the Declaration, new approvals could not be granted, there would be important ramifications.”* Press reports at the time supported the Government’s stance. That if the High Court Judgment stood then the *“Government’s pesticide policy would be fundamentally undermined”* and that the policy and approvals system *“might even grind to a halt.”*

Correspondence was found between Dave Bench, the Head of Policy at CRD, and Prof David Coggon Chairman of CoT. It was dated September 1<sup>st</sup> 2009.<sup>316</sup> *“Further to my letter dated 11 March 2009, you will be aware that a decision has now been delivered by the Court of Appeal. Although the decision of the Court confirms current policy is in line with EU requirements in this area, Ministers are still keen to continue their review of policy”*.

The fact that Defra was taking instructions from the Agricultural Industry is made very plain in this next response to the EU Directive Advice.

Article 10 Protection of water

**EU Directive Advice:** *The aquatic environment is especially sensitive to pesticides. It is very necessary for particular attention to be paid to avoiding pollution of surface water and groundwater by taking appropriate measures such as the establishment of buffer and safeguard zones, or planting hedges along surface water to reduce exposure of water bodies to spray drift, drain flow and run-off. The dimensions of buffer zones should depend in particular pesticide properties, as well as agricultural characteristics of the areas concerned.*

**Government Response:** *Current statutory and voluntary controls related to pesticides and the protection of water, if followed, afford a high degree of protection to water courses and cover specific measures detailed in the Directive. The Government will primarily seek to work with the pesticides industry to enhance voluntary measures.*

In December 2013, I wrote to Prof David Coggon, Chairman of CoT. *“When you were Chairman of the ACP, I recall that you whole-heartedly supported the government’s stance”*: You said: *“The*

<sup>315</sup> <http://www.rcep.org.uk/reports/sr-2006-cropspraying/documents/RCEP-crop-spraying.pdf>

<sup>316</sup> <http://cot.food.gov.uk/pdfs/tox200928addendum.pdf>

government is right in concluding that a statutory buffer zone would be a disproportionate response to scientific uncertainty.”

Ms Downs says: “The most common chronic long-term effects, illnesses and diseases reported to my campaign from residents living in the locality of crop sprayed fields include neurological conditions such as Parkinson’s disease, Motor Neurone Disease, multiple sclerosis and other neurological damage, as well as various cancers, especially those of the breast and brain, leukaemia, non-Hodgkin’s lymphoma, amongst many other chronic conditions.” The cancers are similar to those found in the above survey in the US amongst farming communities by Alavanja and Colleagues. Read Georgina’s article in the Ecologist:<sup>317</sup> **It’s not just glyphosate and neonicotinoids – we need a pesticide-free future.**

## **Lobbyists in Europe, the US and Latin America**

**In the EU, the more you spend and the more staff you have, the greater your chance of success**

In 2014, Volkswagen employed 43 staff in Brussels and spent €3.5 million on lobbying.<sup>318</sup> This is how they succeeded in getting away with the emissions scandal.

It was the same in the US for Monsanto. Elliott Negin writing in 2012 in the Huffington Post in the US wrote:<sup>319</sup> “Given the unvarnished facts, how has Monsanto been able to convince anyone that it is, according to its latest PR effort, “improving agriculture and improving lives”? In large part, by spending tens of millions of dollars annually on advertising, lobbying and campaign contributions. Last year, Monsanto spent \$100 million on the ad campaign, down slightly from the \$120 million it spent in 2010, according to Securities and Exchange Commission figures. The company also spent \$6.37 million on lobbying--more than any other agricultural company or trade group--and so far has contributed more than \$170,000 to political campaigns in the 2011-2012 election cycle, the third highest in the agricultural sector.”

### **The Innovation Principle should replace the Precautionary Principle**

The European Environment Agency had published two Reports on the Precautionary Principle: Late lessons from Early Warnings in 2001<sup>320</sup> and 2013.<sup>321</sup>

However, many pesticide lobbyists in Europe, in common with Prof Anne Glover,<sup>322</sup> were calling for the ‘precautionary principle’ to be abandoned and be replaced by the ‘innovation principle’ where risk-taking is acceptable (when it is for the benefit of businesses). Twelve of the largest corporations in Europe (the majority of which are Agrochemical Corporations) submitted an Open Letter to the President of the European Commission, Mr Jose Manuel Barroso, Mr Herman Van Rompuy, President of the European Council and Mr Martin Schulz, President of the European Parliament urging them to adopt an “**Innovation Principle**” to be taken into full consideration during policy and legislative processes in order to “*Stimulate Economic Recovery*”<sup>323</sup>

**A letter had been sent to Prof Anne Glover ex-Chief Scientific Officer to the European Commission protesting about the Draft Regulation on Endocrine Active Chemicals 18/06/2013**<sup>324</sup>

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<sup>317</sup>

[http://www.theecologist.org/News/news\\_analysis/2848400/its\\_not\\_just\\_glyphosate\\_and\\_neonicotinoids\\_why\\_we\\_need\\_a\\_pesticidefree\\_future.html](http://www.theecologist.org/News/news_analysis/2848400/its_not_just_glyphosate_and_neonicotinoids_why_we_need_a_pesticidefree_future.html)

[http://www.theecologist.org/News/news\\_analysis/2848400/its\\_not\\_just\\_glyphosate\\_and\\_neonicotinoids\\_why\\_we\\_need\\_a\\_pesticidefree\\_future.html](http://www.theecologist.org/News/news_analysis/2848400/its_not_just_glyphosate_and_neonicotinoids_why_we_need_a_pesticidefree_future.html)

<sup>318</sup> <http://corporateeurope.org/power-lobbies/2015/09/power-car-industry-lobby-makes-scandal-inevitable>

<sup>319</sup> [http://www.huffingtonpost.com/elliott-negin/monsantos-great-expectati\\_b\\_1267494.html](http://www.huffingtonpost.com/elliott-negin/monsantos-great-expectati_b_1267494.html)

<sup>320</sup> [http://www.eea.europa.eu/publications/environmental\\_issue\\_report\\_2001\\_22](http://www.eea.europa.eu/publications/environmental_issue_report_2001_22)

<sup>321</sup> <http://www.eea.europa.eu/publications/late-lessons-2>

<sup>322</sup> Professor Anne Glover, Former Scientific Adviser to President Barroso.

<sup>323</sup> <http://www.scienceindustries.ch/file/13682/erf-communication-innovation-principle.pdf>

<sup>324</sup> <http://www.rsc.org/suppdata/tx/c3/c3tx90013d/c3tx90013d.pdf>

Seventy three individuals writing under the umbrella of the Royal Society of Chemistry complained that the European Commission was ignoring scientific principles in the setting of a regulatory framework for endocrine disrupting chemicals.

### **Corporate Europe Observatory and Stéphane Horel Report: A Toxic Affair: How the Chemical Lobby Blocked Action on Endocrine Disrupting Chemicals<sup>325</sup>**

*“Brussels nowadays is the second capital of corporate lobbying in the world – after Washington DC. An estimated 20,000-30,000 lobbyists populate the EU quarter, the large majority of whom represents corporations. All big corporations have their own lobby offices and in-house lobbyists.”*

The National Union of Farmers, the Crop Protection and Agricultural Industries Confederation (AIC) launched *Healthy Harvest – safeguarding the crop protection toolbox* in June 2014.<sup>326</sup> The NFU and pesticide companies continually defend the use of pesticides for economic reasons and complain at any attempt by the European Commission to restrict the 320 at their disposal.

### **Lobbyists against labelling of GM foods in Washington State, US**

The Grocery Manufacturer’s Association (GMA) was the largest single donor to the “no” to GMO labelling campaign. The GMA tried to hide their actual donors from the public thus contravening state laws. They face a money-laundering lawsuit from the state Attorney General.<sup>327</sup> *“They dumped more than \$22 million into fighting against GMO labeling. Exactly \$550 of the “no” campaign’s dollars came from inside Washington State. This was a classic example of out-of-state corporate interests pouring massive money into maintaining control of our food systems.”* Attorney General Ferguson: Public Disclosure Commission: Cash Contributions for: Grocery Manufacturers Association against I-522.

### **Lobbyists for Hillary Clinton’s presidential election 2016 bid**

In May 2015, Natural News reported about Hillary Clinton’s close links with Monsanto, Bill Gates, Pfizer, Exxon Mobil, Dow Chemical, Goldman Sachs, Proctor & Gamble. *“It is a who’s who compilation of the most evil corporations and institutions on planet Earth, and they’ve all given huge money –tens of millions of dollars to Hillary Clinton”*<sup>328</sup> The top donors to Hillary Clinton’s fighting fund can be seen here.<sup>329</sup>

### **Bernie Saunders is the only US presidential candidate for the 2016 election bid who is voting for GM labelling<sup>330</sup>**

### **Lobbyists in Brazil’s elections for President**

*“In last year’s elections, agribusiness trailed only the construction industry as a source of donations for the re-election of leftist President Dilma Rousseff. Brazilian food and agricultural companies accounted for about a quarter of the money she received from big donors, or 89.5 million reais, electoral filings show. That figure is based on an analysis of the 118 largest donations to Rousseff’s campaign, equal to 1 million Brazilian reais (\$300,000) or more each.”*<sup>331</sup>

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<sup>325</sup> <http://corporateeurope.org/food-and-agriculture/2015/05/toxic-affair-how-chemical-lobby-blocked-action-hormone-disrupting>

<sup>326</sup> [https://www.nfuonline.com/healthyharvest\\_final\\_digital/](https://www.nfuonline.com/healthyharvest_final_digital/) The impact of losing plant protection products on UK Food Production

<sup>327</sup> <http://www.atg.wa.gov/uploadedFiles/Complaint-20131016-Conformed.pdf> Attorney General Ferguson. Public Disclosure Commission: Secret illegal donations to the Grocery Manufacturers Association from 180 corporations including Del Monte, the Coca-Cola Company, Pepsico, Nestle USA, Campbell Soup Company, Ocean Spray Cranberries, Kellogg’s and General Mills.

<sup>328</sup> [http://www.naturalnews.com/049755\\_Bride\\_of\\_Frankenfood\\_Hillary\\_Clinton\\_Monsanto.html](http://www.naturalnews.com/049755_Bride_of_Frankenfood_Hillary_Clinton_Monsanto.html)

<sup>329</sup> <http://www.naturalnews.com/Clinton-Foundation-Donors-State.html>

<sup>330</sup> <https://www.organicconsumers.org/news/bernie-sanders-only-us-presidential-candidate-supporting-gmo-labeling>

<sup>331</sup> <http://www.reuters.com/investigates/special-report/brazil-pesticides/>

## Massive declines in biodiversity

### **The systemic neonicotinoid insecticides; a disaster in the making**

On December 3<sup>rd</sup> 2010, we sent the CRD and Defra information (and later a pdf link) to Dr Henk Tennekes' book. Dr Tennekes, an independent Dutch toxicologist, first warned of the dangers of the systemic neonicotinoid insecticides to arthropods in a paper in *Toxicology*<sup>332</sup> and in his book: *The systemic neonicotinoid insecticides: A disaster in the making*. Dr Tennekes says that his book: "... catalogues a tragedy of monumental proportions regarding the loss of invertebrates and subsequent losses of the insect-feeding (invertebrate-dependent) bird populations in all environments in the Netherlands. The disappearance can be related to agriculture in general, and to the neonicotinoid insecticide imidacloprid in particular, which is a major contaminant of Dutch surface water since 2004." The relationship exists because of crucial (and catastrophic) disadvantages of the neonicotinoid insecticides: the damage to the central nervous system of insects is irreversible and cumulative. Tennekes showed that there is no safe level of exposure, and even minute quantities can have devastating effects in the long term. They leach into groundwater and contaminate surface water and persist in soil and water, chronically exposing aquatic and terrestrial organisms to these insecticides. "So, what, in effect, is happening is that these insecticides are creating a toxic landscape, in which many beneficial organisms are killed off." Tennekes and Sánchez-Bayo, in a more recent paper, demonstrated that chemicals that bind irreversibly to specific receptors (neonicotinoids, genotoxic carcinogens and some metalloids) will produce toxic effects in a time-dependent manner, no matter how low the level of exposure.<sup>333</sup>

### **Many independent scientists have measured chemicals and correlated them with biodiversity loss**

It has been shown that macrofauna abundance drops sharply between 13 and 67 ng L<sup>-1</sup> of imidacloprid.<sup>334</sup> The team combined 8 years of monitoring data on imidacloprid in surface water and 8 years of monitoring data on macrofauna abundance. The water quality standards applied in the Netherlands to achieve ecological protection are not met in many parts of the country, and especially in agricultural areas with greenhouses and crops like bulbs, where concentrations up to hundreds of µg L<sup>-1</sup> imidacloprid are being found in the surface water. "We are risking far too much to combat a few insect pests that might threaten agriculture," said Dr Jeroen van der Sluijs, the senior member of the team based at Utrecht University. "This substance should be phased out internationally as soon as possible. The pollution was so bad in some places that the ditch water in fields could have been used as an effective pesticide" he said. "As well as killing mayflies, midges and molluscs, the pollution could have a knock-on effect on birds such as swallows that rely on flying insects for food," he added. Half the 20 000 tonnes of the imidacloprid produced each year is not affected by the EU ban, because it is used not to treat crops, but to combat fleas and other pests in cattle, dogs and cats; much of it ends up in surface water.

### **The American Bird Conservancy (ABC) Report correlates measurements with the effects on birds**

The ABC produced a report on neonicotinoids and birds. They had commissioned world-renowned environmental toxicologist Dr Pierre Mineau to conduct the research. Cynthia Palmer, co-author of the report is an environmental lawyer and Pesticides Program Manager for ABC. The authors called for a ban on the use of the neonicotinoid insecticides as seed treatments and for the suspension of all applications pending an independent review of the products' effects on birds, terrestrial and

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<sup>332</sup> Tennekes HA. The significance of the Druckrey-Küpfmüller equation for risk assessment – The toxicity of neonicotinoid insecticides to arthropods is reinforced by exposure time. *Toxicology* 2010; 276(1): 1-4.  
<http://www.ncbi.nlm.nih.gov/pubmed/20803795>

<sup>333</sup> <http://www.farmlandbirds.net/en/content/human-health-and-global-biodiversity-lies-hands-pesticides-industry>

<sup>334</sup> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0062374>



aquatic invertebrates, and other wildlife. [The Report has been updated to 2015<sup>335</sup> to incorporate more measurement data, but the majority of quotations remain the same.]

April 2013 I sent this document to the Chairman of the UK Environment Agency (EA) asking him to read it and instruct the EA to measure neonicotinoids and glyphosate in water, but he declined.

Dr Jo Kennedy confirmed that the UK Environment Agency **could** measure neonicotinoids (although the limit of detection of the GCMS scan is approx. 0.5µg/l) but were not doing so because the European Water Frame Directive did not require it.

Some of the salient findings of the ABC Report are:

*"It is astonishing that EPA would allow a pesticide to be used in hundreds of products without ever requiring the registrant to develop the tools needed to diagnose poisoned wildlife. It would be relatively simple to create a binding assay for the neural receptor which is affected by this class of insecticides,"* said Dr Mineau. The ABC report calls on EPA to require that registrants of acutely toxic pesticides develop the tools necessary to diagnose poisoned birds and other wildlife.

Page 4: *A single corn kernel coated with a neonicotinoid can kill a songbird. Even a tiny grain of wheat or canola treated with the oldest neonicotinoid, imidacloprid, can poison a bird. As little as 1/10th of a corn seed per day during egg-laying season is all that is needed to affect reproduction with any of the neonicotinoids registered to date.*

Page 5: *It looks as if the USEPA and other regulatory agencies consistently approved registrations despite their own scientists' repeated and ever-growing concerns. It is relevant to ask why we conduct scientific evaluations of products if those evaluations have little or no bearing on the registration decisions that are made, and when staff scientists warning of 'major risk concerns' appear to be ignored.*

Page 7: *Of particular concern to birds are those compounds that are used as seed treatments, primarily imidacloprid, clothianidin, thiamethoxam and acetamiprid.*

Page 8: *"Impacts from the neonicotinoids may very well be further afield than the arable area on which they are used, and many of those impacts may be mediated through the aquatic environment"* Dr Mineau says that: *"for imidacloprid, we believe that a scientifically defensible reference level (a water concentration at which undesirable effects are likely to be seen in reasonably sensitive species) for acute invertebrate effects (following short term exposure) is approximately 0.2 µg/l. European regulators acknowledge that acute effects are likely at levels exceeding 0.5 µg/l. Similarly, a reasonable reference level for effects following chronic exposure is at least an order of magnitude lower, or between 0.01 and 0.03 µg/l."*

Page 9: *"It is clear that we are witnessing contamination of the aquatic environment at levels that will affect aquatic food chains. This has a potential to affect consumers of those aquatic resources, be they birds, fish or amphibians."*

Examples given in the paper by Chagnon *et al.*<sup>336</sup> demonstrate evidence of the negative impacts of systemic insecticides on decomposition, nutrient cycling, soil respiration and invertebrate populations valued by humans. Invertebrates, particularly earthworms that are important for soil processes, wild and domestic insect pollinators that are important for plant and crop production, and several freshwater taxa that are involved in aquatic nutrient cycling, were all found to be highly susceptible to lethal and sublethal effects of neonicotinoids at environmentally relevant concentrations. Environment Canada has shown that clothianidin was the most persistent neonicotinoid residue and was present in wetlands in agricultural fields as a result of either snowmelt run-off or other transport mechanisms. Clothianidin residues occurred primarily near fields where canola had been seeded the previous year, because it is very long acting.<sup>337</sup>

Neonicotinoid insecticides have, furthermore, come under scrutiny for their potential unintended effects on non-target organisms. Residues of clothianidin and thiamethoxam were detected during

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<sup>335</sup> [http://abcbirds.org/wp-content/uploads/2015/05/Neonic\\_FINAL.pdf](http://abcbirds.org/wp-content/uploads/2015/05/Neonic_FINAL.pdf)

<sup>336</sup> <http://link.springer.com/article/10.1007%2Fs11356-014-3277-x#page-1>

<sup>337</sup> [http://www.traceorganic.com/2013/presentations/JBailey%202013\\_WCTOW.pdf](http://www.traceorganic.com/2013/presentations/JBailey%202013_WCTOW.pdf)

and after planting maize, outside the fields and in conservation areas. They may move off target by wind erosion of contaminated soil.<sup>338</sup>

Another study sampled water in 136 wetlands in spring 2012, summer 2012, fall 2012 and spring 2013.<sup>339</sup> Prior to seeding, 36% of wetlands contained at least one neonicotinoid, 62% in summer 2012, 16% in fall, but increased to 91% spring 2013 after ice-off. Wetlands situated in barley, canola and oat fields consistently contained higher mean concentrations of neonicotinoids than grasslands. Distribution maps indicate neonicotinoid use is increasing and becoming more widespread with concerns for environmental loading. The reported concentrations of neonicotinoids in surface waters from 29 studies in 9 countries worldwide in tandem with published data on their acute and chronic toxicity to 49 species of aquatic insects and crustaceans spanning 12 invertebrate orders is synthesized to indicate the current state of knowledge.<sup>340</sup> Strong evidence exists that waterborne neonicotinoid exposures are frequent and long-term; levels are  $0.13 \mu\text{g L}^{-1}$  (geometric mean) and  $0.63 \mu\text{g L}^{-1}$  (maximum). Overall, neonicotinoids can exert adverse effects on survival, growth, emergence, mobility and behaviour of many sensitive aquatic invertebrate taxa at concentrations at or below  $1 \mu\text{g L}^{-1}$  under acute exposure, and  $0.1 \mu\text{g L}^{-1}$  for chronic exposure.

There is a wide range of sensitivities of aquatic invertebrates to neonicotinoids. *Daphnia magna*, the standard test species, appeared to be very tolerant, but the tests were found to be fraudulent.<sup>341</sup>

However the orders Ephemeroptera (mayfly), Trichoptera (caddis fly) and Diptera (midge) appear to be the most sensitive species, of the order of 10 000–100 000 times more sensitive than *D. magna*.

These three species are critical for supporting numerous aquatic and terrestrial food webs.

Developed to replace organophosphate and carbamate insecticides, the neonicotinoids are structurally similar to nicotine. Imidacloprid, clothianidin and thiamethoxam the three main neonicotinoid insecticides, are being evaluated by Health Canada's Pest Management Regulatory Agency (PMRA). The Canadian interim water quality guideline for imidacloprid is  $0.23 \mu\text{g L}^{-1}$  but there is currently insufficient use, fate and toxicological information available to establish guidelines for clothianidin and thiamethoxam. Based on concentrations of neonicotinoids reported in surface waters in Canada and globally, there is potential for aquatic invertebrates to be negatively impacted by neonicotinoids.<sup>342</sup> The current methods for measuring neonicotinoids are inadequate for trace measurements and passive sampling methods are not available<sup>343</sup> so the authors described a multi-residue analytical method for neonicotinoids in water. The limits of quantitation were in the range 0.6–1.0 ng for all compounds. Residues of five compounds were found in a survey around Sydney.

### **Loss of biodiversity also correlated with systemic neonicotinoids in streams in the USA**

Widespread occurrence of neonicotinoid insecticides in streams in a high corn- and soybean-producing region in the USA was reported and chemicals were persistent.<sup>344</sup> Pulses of elevated neonicotinoid insecticide concentrations were associated with rainfall events during and shortly after crop planting, which is consistent with the spring flushing of herbicides that has been documented in Midwestern US streams. The insecticides also were detected prior to their first use during the growing season, persisting from use during previous growing seasons. Based on correlations between loss of butterflies and moths and increases in agricultural pesticides over the same years, the chief of the Wildlife Refuges decided to ban the use of GMOs and neonicotinoids from the refuges by January 2016.<sup>345</sup>

### **US populations of a lepidopteran, the migrant Monarch Butterfly, have declined by 90%**

<sup>338</sup> <http://www.ncbi.nlm.nih.gov/pubmed/25710560>

<sup>339</sup> <http://www.ncbi.nlm.nih.gov/pubmed/24671127>

<sup>340</sup> <http://www.ncbi.nlm.nih.gov/pubmed/25454246>

<sup>341</sup> <http://www.amsi.ge/jbpc/31515/15-3-abs-1.htm>

<sup>342</sup> <http://www.ncbi.nlm.nih.gov/pubmed/25461043>

<sup>343</sup> <http://europepmc.org/abstract/MED/24296028>

<sup>344</sup> <http://ca.water.usgs.gov/pubs/2014/HladikKolpinKuivila2014.pdf>

<sup>345</sup> [http://www.centerforfoodsafety.org/files/agricultural-practices-in-wildlife-management\\_20849.pdf](http://www.centerforfoodsafety.org/files/agricultural-practices-in-wildlife-management_20849.pdf)

The results of mathematic modelling by EFSA GMO panel<sup>346</sup> appear to bear no relationship to what happens in the field: US populations of a 'real' lepidopteran, the migrant Monarch Butterfly, have declined by 90%. In the last 20 years, the populations of Monarch Butterflies in the eastern US have declined by 90 per cent.<sup>347</sup> With the introduction of genetically-modified crops like [Roundup®-Ready corn and soy](#) that are resistant to traditional herbicides, farmers have begun to spray more and more Roundup®--the Monsanto-made chemical-- over wider and wider areas, resulting in the loss of milkweed, the only plant upon which they lay eggs and their larvae feed.

In February 2015 the US Center for Food Safety produced an 88-page Report: *Monarchs in peril: Herbicide-Resistant Crops and the decline of Monarch Butterflies in North America*.<sup>348</sup> "Unlike many other weed killers, once absorbed it (glyphosate) is translocated (moved internally) to root tissue, where it kills milkweed at the root and so prevents regeneration. The increasingly common practice of growing Roundup Ready crops continuously on the same fields means that milkweed is exposed to glyphosate every year, with no opportunity to recover. In 1999, common milkweed was found in half of corn and soybean fields, but only 8% of them a decade later." Another paper has shown that clothianidin, a long-acting systemic neonicotinoid insecticide, contributes to the decline of Monarch Butterflies.<sup>349</sup> In February, a review by the Institute of Science in Society (I-SiS) showed that milkweed was massively reduced in Iowa farmland where GM Roundup Ready crops are grown but far less so on non-agricultural land.<sup>350</sup>

### **Repeated use of herbicides creates super-weeds (the US) or invasive weeds (the UK): Japanese knotweed in the UK is a glyphosate-resistant super weed**

The Pesticides Industry and the BBC found that it was convenient to perpetuate the myth that Japanese knotweed was brought into the UK by the Victorians. '*Fallopia japonica* was found in Japan by Phillippe von Siebold and brought back to Europe around 1829'.<sup>351</sup> In fact Japanese knotweed *Reynoutrie japonica* (syn. *Polygonum cuspidatum*) was introduced into Europe in the mid-16<sup>th</sup> Century by an amateur botanist from the Netherlands, Van Reynoutrie (syn. Karel van Sint Omaars).<sup>352</sup> For 500 years it caused no problems.

Historical and chronological evidence suggest that the herbicide glyphosate (or other herbicides that are used as alternatives) is responsible for the transformation of garden escapes into super-weeds (in the UK these are termed 'invasive species'). Glyphosate was used repeatedly in the same areas and Japanese knotweed developed resistance to it.<sup>353</sup> According to the author Richard Mabey in his book: *Weeds: The Story of Outlaw Plants*, "the rampaging spread across Britain in the late 1970s and 80s is regarded as a parable of the dangers of casually introducing alien species into the countryside." However in 1969 in the UK<sup>354</sup> it was still being promoted as a plant suitable for large gardens (as was a member of the Balsam species *Impatiens glandulifera (royalei)*). Glyphosate was introduced in 1974 and by 1981 both plants were classified in the Wildlife and Countryside Act as invasive species.<sup>355</sup> In the US, the first confirmed Glyphosate-Resistant weed, rigid ryegrass was reported in 1998 within two years of Genetically-Modified (GM) Roundup® Ready crops being grown. Super-weeds in the US in GM cropping systems are now a massive problem. Between 1996 and 2011, as a result of GM technology, twenty-two Glyphosate-Resistant super-weeds had

<sup>346</sup> <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2011.02083.x/pdf>

<sup>347</sup> <http://www.newsweek.com/monarch-butterflies-have-declined-90-conservationists-look-for-extra-protection-267094>

<sup>348</sup> [http://www.centerforfoodsafety.org/files/cfs-monarch-report\\_2-4-15\\_design\\_05341.pdf](http://www.centerforfoodsafety.org/files/cfs-monarch-report_2-4-15_design_05341.pdf)

<sup>349</sup> <https://www.sdstate.edu/nrm/publications/upload/Pecenka-and-Lundgren-2015.pdf>

<sup>350</sup> [http://www.i-sis.org.uk/Monarch\\_Butterfly\\_Decline\\_Linked\\_to\\_Glyphosate.php](http://www.i-sis.org.uk/Monarch_Butterfly_Decline_Linked_to_Glyphosate.php)

<sup>351</sup> <http://www.knotweed-removal.co.uk/history-and-biology-of-japanese-knotweed.php>

<sup>352</sup> Van Reynoutrie (or Karel van Sint Omaars) (1533-1569) H. Wille: The discovery of the scientific heritage of Karel van Sint Omaars (1533-1569). The Libri Picturati a 16-30 in the Jagiellon Library in Krakow. Scientiarum Historia 22 (1996) 2 67.

<sup>353</sup> <http://newsroom.dowagro.com/press-release/dow-agrosciences-statement-about-usda-announcement-regarding-draft-environmental-impac>

<sup>354</sup> Marshall Cavendish Illustrated Encyclopaedia of Gardening 1969.

<sup>355</sup> <http://www.legislation.gov.uk/ukpga/1981/69>

developed which required an additional 239 million kg of glyphosate.<sup>356</sup> By 2016, Benbrook reported that two thirds of the total volume of glyphosate applied in the US from 1974-2014 has been sprayed in just the last 10 years.<sup>357</sup> Much farmland has had to be abandoned in the US because weeds have to be removed by hand.



*Northern Indiana. Giant Ragweed (3 m) resistant to glyphosate. Farm workers have to weed it by hand. This is one of nine different weeds that commonly occur. (By 2014, 22 have been documented)*



*2012 Japanese knotweed invasion around a proposed building site in the Swansea Valley:<sup>358</sup> “They were 2-3 metres in height and formed a closed canopy.”*

Japanese knotweed grows profusely in the South Wales valleys in former mining areas. In a vain attempt to eradicate it, more and more Roundup® had been sprayed on it...for many years, but no one admitted to having records. It had become a glyphosate-resistant super weed. For three years we have sent samples of water for analysis of glyphosate to a laboratory in Leipzig. In 2013, we

<sup>356</sup> <http://www.enveurope.com/content/pdf/2190-4715-24-24.pdf>

<sup>357</sup> <http://enveurope.springeropen.com/articles/10.1186/s12302-016-0070-0>

<sup>358</sup> <http://www.swansea.gov.uk/index.cfm?articleid=15838>

found that glyphosate was present in river water that drained from an area where it had been sprayed on Japanese knotweed from April to September and in tap water. Under Freedom of Environmental Information 2004, we found that Contractors had sprayed 1440 kg of a form of Roundup® for professionals (Dakar pro) in 2015 in a period of six months around the Swansea area.



A photograph of a valley in Swansea taken in August 2015: a three-year programme of eradication of Japanese knotweed with Roundup® had been announced by the Council. The first Roundup® was sprayed in April, but by August, new shoots were emerging

## **Outbreaks of diseases and extinctions in wildlife from emerging pathogens - not reported in the media in the UK or the US**

### ***Nature* reported emerging pathogens as threats to animal and plant health**

Outbreaks of infectious diseases amongst species of wildlife around the world (such as amphibians, honey bees and wild bees, fish, birds and bats) have occurred over the last 30 years. Since the late 1990's scientists have written in increasingly desperate tones. In 2012 there were two papers in *Nature*: "Biodiversity loss and the impact on humanity"<sup>359</sup> and "Emerging fungal threats to animal, plant and ecosystem health"<sup>360</sup> Authors of this last review had appealed to scientists urgently to find "*the elusive magic bullet*": it is hardly a scientific term! Only one paper from California dared to mention pesticides. Davidson *et al.*<sup>361</sup> reported in 2002 spatial patterns of decline for four California ranid frogs and matched the declines with the distribution of agricultural lands (based on USGS land use maps and key predominant wind directions based on California Air Resources streamline wind maps). The authors stated that "*In California, the transport and deposition of pesticides from the agriculturally intensive Central Valley to the adjacent Sierra Nevada is well documented, and pesticides have been found in the bodies of Sierra frogs.*" The widespread use on agricultural crops of atrazine,<sup>362</sup> the systemic neonicotinoid insecticides<sup>363</sup> and glyphosate,<sup>364</sup> all of which cause immune

<sup>359</sup> [http://www.nature.com/nature/journal/v486/n7401/full/nature11148.html?WT.ec\\_id=NATURE-20120607](http://www.nature.com/nature/journal/v486/n7401/full/nature11148.html?WT.ec_id=NATURE-20120607)

<sup>360</sup> <http://www.ncbi.nlm.nih.gov/pubmed/22498624>

<sup>361</sup> <http://www.csus.edu/indiv/d/davidsonc/davidson-consbio-compressed-02.pdf>

<sup>362</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC126596/>

suppression, make species vulnerable to emerging infectious pathogens, driving large-scale amphibian extinctions.

### **Chytrid fungus has wiped out amphibian populations over five continents.**

Chytrid fungus, *Batrachochytrium dendrobatidis* has wiped out amphibian populations over five continents. A spokesman for the International Union for Nature Conservation (IUCN) said: “*The IUCN Red List currently considers 31% of the earth’s amphibians are threatened with extinction...it’s thought that 159 species have vanished forever in recent years.*” Amphibians, particularly tadpoles, are considered to be environmental indicators of indirect ecosystem effects because of their unique niche at the boundary of the aquatic-terrestrial ecosystems as well as their sensitivity to pollutants. While tadpoles feed on periphyton, adult amphibians are strictly insectivorous. Amphibians were the first group of vertebrates to be affected by the epidemics of diseases caused by uncommon pathogens. In the US in 2001, there were reports of wild frogs with grotesque limb deformities in at least 43 US States and five Canadian provinces in areas of pesticide run-off. Kiesecker (2002)<sup>365</sup> found that atrazine (herbicide) and malathion (insecticide) made frogs more susceptible to a parasite, a burrowing trematode worm, which affected tadpoles. Even very low levels of exposure (“at concentrations considered safe for drinking water by the US Environmental Protection Agency”) could produce “dramatic effects on the immune response of the animals”. Field studies showed “considerably higher rates of limb deformities where there was pesticide exposure”. Atrazine is the second largest selling herbicide in the world (the largest up until 2001 when glyphosate took over). Atrazine ( $\geq 0.1$  ppb) induced hermaphroditism and demasculinized the larynges of exposed male *Xenopus laevis* frogs ( $\geq 1.0$  ppb). In addition, when sexually mature males were exposed to 25 ppb atrazine there was a 10-fold decrease in testosterone levels.<sup>366</sup> Thus atrazine as well as glyphosate is an endocrine disrupting chemical and an immune suppressant.

In 2011, a joint study from four Centres (Copenhagen, Spain, Portugal and the US) showed that amphibian population declines far exceed those of other vertebrate groups, with 30% of all species listed as threatened by the IUCN. The authors’ thought that the probable causes of these declines included climate change, land-use change and spread of the pathogenic fungal disease *chytridiomycosis*.<sup>367</sup> However the WWF Living Planet Report 2010 has shown that biodiversity is declining faster in freshwater, than in any other biome, including coral reefs and tropical forests.<sup>368</sup> Joseph Mendelson an amphibian taxonomist wrote in 2011:<sup>369</sup> “*The reality of amphibian declines and extinctions has shifted the ecological baseline in so many ecosystems, that an entire generation of biologists is conducting their research in a framework that has been very recently remodelled. I am a taxonomist and I have seen my career vacillate between the thrill of discovering new species and the chill of tracking extinction events—including species that I described.*”

### **Some other pathogens involved in wiping out wild species<sup>370</sup>**

*Geomyces destructans* (White nose syndrome) in bats, *Lepeophtheirus salmonis* (parasitic sea lice) in wild salmon, *Trichodina* ectoparasite in Japanese medaka fish in rice paddy fields, *Mycoplasma gallisepticum* in wild house finches in the US, avian pox in the tit family, *Trichomonas gallinae* in

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[https://www.researchgate.net/publication/264050824\\_Widespread\\_occurrence\\_of\\_neonicotinoid\\_insecticides\\_in\\_streams\\_in\\_a\\_high\\_corn\\_and\\_soybean\\_producing\\_region\\_USA](https://www.researchgate.net/publication/264050824_Widespread_occurrence_of_neonicotinoid_insecticides_in_streams_in_a_high_corn_and_soybean_producing_region_USA)

<sup>364</sup> [http://www.fs.fed.us/foresthealth/pesticide/pdfs/seratr01\\_43\\_08\\_04.pdf](http://www.fs.fed.us/foresthealth/pesticide/pdfs/seratr01_43_08_04.pdf)

<sup>365</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC126596/>

<sup>366</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC122794/>

<sup>367</sup> <http://www.nature.com/nature/journal/v480/n7378/nature10650/metrics/news>

<sup>368</sup> WWF Report: Biodiversity, biocapacity and development: Living Planet Report 2010.

<sup>369</sup> [http://nationalzoo.si.edu/support/volunteer/documents/HR\\_Mar2011\\_JoeM\\_proofs.pdf](http://nationalzoo.si.edu/support/volunteer/documents/HR_Mar2011_JoeM_proofs.pdf)

<sup>370</sup> <http://www.stmconnect.com/sites/default/files/3-12%20%20JEIT-2014.pdf>

greenfinch, *Suttonella ornithicola* in tits, tropical Usutu virus in blackbirds, *Nosema ceranae* and *Varroa destructans* in honeybees, *Crithidia bombi* in wild bumble bees and Rana virus in amphibians. Many have been shown by independent scientists to have these diseases as a result of suppression of their immune systems.

### **Plant immune systems are similar to those of animals. Is that why we are plagued with diseases of trees?**

Prof Jeff L Dangl of North Carolina, Chapel Hill is an expert on the plant immune systems. *“Many of these proteins (in plants) fall into a class of proteins that has related members which function in innate animal immunity...Thus activation of plant immune systems is akin to that of animal immune systems where ‘modified self’ can be recognised to trigger an appropriate response...”*

Salicylic acid modulates colonization of the root microbiome by specific bacterial taxa<sup>371</sup>

*Abstract: Immune systems distinguish “self” from “nonself” to maintain homeostasis and must differentially gate access to allow colonization by potentially beneficial, non-pathogenic microbes. Plant roots grow within extremely diverse soil microbial communities but assemble a taxonomically limited root-associated microbiome. We grew isogenic Arabidopsis thaliana mutants with altered immune systems in a wild soil and also in recolonization experiments with a synthetic bacterial community. We established that biosynthesis of, and signaling dependent on, the foliar defense phytohormone salicylic acid is required to assemble a normal root microbiome. Salicylic acid modulates colonization of the root by specific bacterial families. Thus, plant immune signaling drives selection from the available microbial communities to sculpt the root microbiome.*

### **Birth defects in animals in Montana correlate with those in humans in the US**<sup>372</sup>

A recent study by Hoy *et al.* found alarming increases in congenital malformations in wildlife in Montana that Hoy has been documenting for the past 19 years. Similar birth defects have occurred in humans in the US. Their graphs illustrating human disease patterns over the twelve-year period correlate remarkably well with the rate of glyphosate usage on corn, soy, and wheat crops, which has increased due to Roundup® Ready crops. While the animals’ exposure to the herbicide is through food, water and air, the authors believe that human exposure is predominantly through food, as the majority of the population does not reside near agricultural fields and forests. They conclude: *“Our over-reliance on chemicals in agriculture is causing irreparable harm to all beings on this planet, including the planet herself. Most of these chemicals are known to cause illness, and they have likely been causing illnesses for many years. But until recently, the herbicides have never been sprayed directly on food crops, and never in this massive quantity. We must find another way.”*

## **Glyphosate residues in farm animals fed GM soya and maize: relationship to botulism and other diseases**

### **Research from Europe on diseases in dairy herds, pigs and chickens fed GM soya and maize**

A Danish farming newspaper *Effektivt Landbrug* devoted a sizeable part of its 13/04/2012 edition to the discoveries by pig farmer Ib Borup Pedersen that GM soy has a damaging effect both on his animals and on his farming profitability.<sup>373</sup> In the previous 2 years, the farm had experienced piglet diarrhoea and 35 sows had died of stomach problems. In the previous 9 months he had had 13 malformed, but live-born, piglets. Another colleague had had similar experiences. In April 2011 Mr Pedersen changed to GM-free soya, without telling his stockman. Within days the stockman noticed that the piglet diarrhoea had stopped.

<sup>371</sup> <http://www.sciencemag.org/content/349/6250/860.abstract>

<sup>372</sup> <http://www.esciencecentral.org/journals/the-high-cost-of-pesticides-human-and-animal-diseases-2375-446X-1000132.pdf>

<sup>373</sup> <http://www.non-gmoreport.com/articles/june2012/farmerpigshealthgmonongmofeed.php>

The incidence of *Clostridium botulinum*-associated diseases had increased over the previous 10-15 years in Germany. Prof Monika Krüger and her colleagues (Leipzig Veterinary Laboratory) demonstrated the toxicity of glyphosate to the most prevalent *Enterococcus spp.* in the gut<sup>374</sup> and suggested that ingestion of the herbicide might be a predisposing factor.

Forty-one dairy farms in Schleswig Holstein were sampled for *C. Botulinum* from fecal specimens in diseased in cows, from farmers and their families, 35 animal feed specimens and 7 of house dust.<sup>375</sup> Four of the humans showed symptoms of visceral botulism. The toxin types were different for cows and humans. Type A toxin was dominant in cows and type E was found in humans. Type E was also found in some animal feeds, but Type A was prevalent in house dust therefore the feeds must have been the source of human colonization with *C. botulinum*.

In a mega dairy in Wales 160 cows died from an outbreak of botulism in May 2014.<sup>376</sup> About 20 incidents of botulism in the UK are recorded each year, the agency added, “*but because botulism is not a notifiable disease, this figure is unlikely to be truly representative of the disease’s incidence.*”

Thirty Danish dairy cows were studied from eight farms.<sup>377</sup> All cows excreted glyphosate in their urine but in varying concentrations. Increased levels of GLDH, GOT and CK and increased lipid profile marker cholesterol in cows from some farms demonstrate a possible effect of glyphosate on liver and muscle cells. High urea levels in some farms could be due to nephrotoxicity of glyphosate. Also the unexpected very low levels of Mn and Co were observed in all animals that could be explained due to a strong mineral chelating effect of glyphosate. In contrast the mean levels of Cu, Zn and Se were within the normal reference range.

Glyphosate in other species: “*In the present study*<sup>378</sup> *glyphosate residues were tested in urine and different organs of dairy cows as well as in urine of hares, rabbits and humans using ELISA and Gas Chromatography-Mass Spectroscopy (GC-MS). The correlation coefficients between ELISA and GC-MS were 0.96, 0.87, 0.97 and 0.96 for cattle, human, and rabbit urine and organs, respectively.*

*Glyphosate excretion in German dairy cows was significantly lower than Danish cows. Cows kept in genetically modified free area had significantly lower glyphosate concentrations in urine than conventional husbandry cows. Also glyphosate was detected in different organs of slaughtered cows as intestine, liver, muscles, spleen and kidney. Fattening rabbits showed significantly higher glyphosate residues in urine than hares. Moreover, glyphosate was significantly higher in urine of humans with conventional feeding. Furthermore, chronically ill humans showed significantly higher glyphosate residues in urine than healthy population. The presence of glyphosate residues in both humans and animals could haul the entire population towards numerous health hazards, studying the impact of glyphosate residues on health is warranted and the global regulations for the use of glyphosate may have to be re-evaluated.*”

### **Analysis of glyphosate residues in malformed piglets**

Glyphosate residues in different organs and tissues as lungs, liver, kidney, brain, gut wall and heart of malformed euthanized one-day-old Danish piglets (N= 38) were tested using ELISA. All organs or tissues had glyphosate in different concentrations. The highest concentrations were seen in the lungs (Range 0.4-80 µg/ml) and hearts (Range 0.15-80 µg/ml).<sup>379</sup> The authors gave an overview of reports of malformations in children of families living few meters from where this herbicide was sprayed. The risk of malformation in human embryos is very high when their mothers are contaminated at 2 to 8 weeks of pregnancy.

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<sup>374</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23396248>

<sup>375</sup> <http://www.ncbi.nlm.nih.gov/pubmed/22200452>

<sup>376</sup> <http://www.fwi.co.uk/news/rare-botulism-outbreak-kills-160-dairy-cows.htm>

<sup>377</sup> <http://www.omicsonline.org/field-investigations-of-glyphosate-in-urine-of-danish-dairy-cows-2161-0525.1000186.php>

<sup>378</sup> <http://www.omicsonline.org/open-access/detection-of-glyphosate-residues-in-animals-and-humans-2161-0525.1000210.pdf>

<sup>379</sup> <http://www.omicsonline.org/open-access/detection-of-glyphosate-in-malformed-piglets-2161-0525.1000230.pdf>





*A deformed piglet; Siamese twins. Photograph by kind permission of Ib Borup Pedersen, Denmark.*

### **Evidence of GMO harm in pig study**

This was a combined study between the US and Australia.<sup>380</sup> GM-fed females had on average a 25% heavier uterus than non-GM-fed females, a possible indicator of disease that requires further investigation. Also, the level of severe inflammation in stomachs was markedly higher in pigs fed on the GM diet. The research results were striking and statistically significant.

Lead researcher Dr Judy Carman, adjunct associate professor at Flinders University, Adelaide, Australia, said: *"Our findings are noteworthy for several reasons.*

- *First, we found these results in real on-farm conditions, not in a laboratory, but with the added benefit of strict scientific controls that are not normally present on farms.*
- *Second, we used pigs. Pigs with these health problems end up in our food supply. We eat them.*
- *Third, pigs have a similar digestive system to people, so we need to investigate if people are also getting digestive problems from eating GM crops.*
- *Fourth, we found these adverse effects when we fed the animals a mixture of crops containing three GM genes and the GM proteins that these genes produce. Yet no food regulator anywhere in the world requires a safety assessment for the possible toxic effects of mixtures. Regulators simply assume that they can't happen.*

*Our results provide clear evidence that regulators need to safety assess GM crops containing mixtures of GM genes, regardless of whether those genes occur in the one GM plant or in a mixture of GM plants eaten in the same meal, even if regulators have already assessed GM plants containing single GM genes in the mixture."* Iowa-based farmer and crop and livestock advisor Howard Vlieger, one of the coordinators of the study, said: *"For as long as GM crops have been in the feed supply, we have seen increasing digestive and reproductive problems in animals. Now it is scientifically documented. In my experience, farmers have found increased production costs and escalating antibiotic use when feeding GM crops. In some operations, the livestock death loss is high, and there are unexplained problems including spontaneous abortions, deformities of new-born animals, and an overall listlessness and lack of contentment in the animals."*

## **Insect vectors of congenital malformations and diseases: are insects being made scapegoats to protect industry and governments?**

<sup>380</sup> <http://www.organic-systems.org/journal/81/8106.pdf>

**Many diseases in farm animals over the last 30 years are blamed on insects and global warming but could it be immune suppression from glyphosate residues in GM feed?**

**Schmallenberg Disease** came out of the blue December 2011. It had never been seen before so it was named after the town in which it started. It was associated with congenital malformations in newborn sheep, goats and calves. The disease was confirmed as present in the UK on 22 January 2012, on being formally identified in four sheep farms in Norfolk, Suffolk and East Sussex. Defra said it was probably carried to Eastern England by midges from mainland Europe. Strangely enough, as reported above, a Danish pig farmer Ib Pedersen had similar deformities in his piglets. In the previous 2 years, the farm had experienced piglet diarrhoea and 35 sows had died of stomach problems. In the previous 9 months he had had 13 malformed, but live-born, piglets. Another colleague had had similar experiences. Other Danish farmers reported malformations in cattle and chickens. In April 2011 Mr Pedersen changed to GM-free soya, without telling his stockman. Within days the stockman noticed that the piglet diarrhoea had stopped. Mr Pedersen put the one-day old euthanized piglets in the freezer and took them over to Dr Monika Krüger in Leipzig. She analysed them for glyphosate residues and published the results in a paper; glyphosate was detected in all organs of one-day-old malformed Danish piglets (N=38).<sup>381</sup>

**Tropical Usutu Virus from Africa:** In September 2011, mass deaths of Blackbirds (*Turdus merula*) were reported in the Rhine-Neckar area of Germany. The Bernhard-Noct Institute for Tropical Diseases and the Friedrich-Loeffler Institute examined four birds and confirmed that it was the tropical Usutu Virus from Africa,<sup>382</sup> most probably carried by mosquitoes. It was first seen in Austria in 2001, then Italy, Hungary and Switzerland. In blackbirds it causes apathy then signs of a central nervous system disorder, with unnatural movements of the head.

**Is there a link between Mad Cow Disease, new variant CJD and agricultural chemicals?  
Mad Cow Disease 1980s-2000; how reassurances by Ministers undermined precaution**

From the European Environment Agency Report 2001: The Precautionary Principle: Late lessons from Early Warnings.<sup>383</sup>

Monsanto scientists were recommending pre-harvest glyphosate use in 1980. By 1985 ADAS (Monsanto) was promoting the use of glyphosate on grassland; they declared it to be good practice to graze the grass or preserve it as hay or silage after treatment.<sup>384</sup> The compulsory treatment of warble fly with OP Pesticides was 1978-1981. The cattle that contracted Bovine Spongiform Encephalopathy were born 1986-1988. Humans started to develop new variant CJD in 1995. It could have been a combination of chemicals.

**Defra denied a link between organophosphate use as a sheep dip in the 1980s and neurological problems in farmers: Chemical Concern published 23/02/2015: Incriminating sheep dip poisoning: Health & Safety Executive Report (1990) – officially destroyed –but has now been revealed**<sup>385</sup>

Farmer Tom Rigby, Sheep Dip Sufferers' Support Group, requested a Fol. He said: "*The information I want is HSE advice given to the government minister just before he decided to abandon compulsory dipping and the science behind and date of a government order that Ministry of Agriculture, Fisheries and Food inspectors must not go within 14ft of a sheep dip.*" The HSE responded to the Fol request

<sup>381</sup> <http://omicsonline.org/open-access/detection-of-glyphosate-in-malformed-piglets-2161-0525.1000230.pdf>

<sup>382</sup> Friedrich-Loeffler-Institute. Federal Research Institute for Animal Health. *News*16/09/2011.

<sup>383</sup> [http://www.eea.europa.eu/publications/environmental\\_issue\\_report\\_2001\\_22](http://www.eea.europa.eu/publications/environmental_issue_report_2001_22) Chapter 15 page 384 Patrick van Zwanenberg and Erik Millstone. 'Mad cow disease' 1980s–2000: how reassurances undermined precaution. The Precautionary Principle. Late lessons from early warnings.

<sup>384</sup> Stride CD, Edwards RV, Seddon JC. Sward destruction by application of glyphosate before cutting or grazing; 1985. pp. 771–778. British Crop Protection Conference – Weeds 7B–6.

<sup>385</sup> <https://politicalcleanup.wordpress.com/2015/02/23/secret-state-14-incriminating-sheep-dip-poisoning-hse-report-officially-destroyed-has-now-been-revealed/>

by telling Mr Rigby: “The information you requested is no longer held by the Health & Safety Executive, having been destroyed in accordance with HSE’s corporate retention policy”. A ‘well-wisher’ sent a copy to Mr Rigby.

More than 500 farmers are affected by neurological disease, but Defra and the UK NHS do not recognise this as a condition.<sup>386</sup> In 2015 some MPs and Lords have asked for a public enquiry.

**Foot and Mouth Disease** In 2001 in Britain it closed many farms, shows and the countryside. It is an infectious and sometimes fatal viral disease that affects cloven-hoofed animals, including domestic and wild bovinds. The virus causes a high fever for approximately two to six days, followed by blisters inside the mouth and on the feet that may rupture and cause lameness.

**Blue tongue** In September 2007, the UK reported its first ever suspected case of the disease, in a Highland cow on a rare breeds farm near Ipswich, Suffolk. Since then the virus has spread from cattle to sheep in Britain. Although the disease is not a threat to humans the most vulnerable common domestic ruminants in the UK are cattle, goats and, especially, sheep. This potentially fatal disease in sheep and cattle is very likely to arrive in the England in 2016, according to the government’s Animal and Plant Health Agency. The virus, which does not affect humans or food, flared up in France in 2015 and the [scientists estimate there is an 80% chance](#) that the biting midges that transmit the disease will be blown across the channel this summer.<sup>387</sup>

#### **Tuberculosis in Cattle and Foot & Mouth Disease outbreaks**

Farmers have been spraying glyphosate pre-harvest and throughout the crop year since 1980. Some cattle and pigs are being fed with GM Roundup®-Ready Soya and Maize. Defra should send some of its scientists to Germany to learn the ELISA technique for testing for glyphosate in humans and animals. Cows and pigs with diseases should be tested for glyphosate in their urine. The USDA reported that between 20% and 40% of US dairy herds are infected with paratuberculosis alone.<sup>388</sup>

**Zika virus outbreak:** In Brazil mosquitos are blamed for carrying the Zika virus, that is allegedly causing an epidemic of microcephaly in infants. “Brazil is now considered the epicenter of the Zika outbreak, which coincides with at least 4,000 reports of babies born with the birth defect microcephaly just since October.” As the WHO [statement](#) said: “A causal relationship between Zika virus infection and birth malformations and neurological syndromes ... is strongly suspected. [These links] have rapidly changed the risk profile of Zika, from a mild threat to one of alarming proportions.

#### **The Physicians of Crop sprayed Towns of Argentina say that it is the chemical larvicide pyroproxyfen that is the cause and Brazilians doctors agree<sup>389</sup>**

*“1. However, they fail to recognise that in the area where most sick persons live, a chemical larvicide producing malformations in mosquitoes has been applied for 18 months, and that this poison (pyroproxyfen) is applied by the State on drinking water used by the affected population.*

*2. Previous Zika epidemics did not cause birth defects in newborns, despite infecting 75% of the population in those countries. Also, in other countries such as Colombia there are no records of microcephaly; however, there are plenty of Zika cases.*

*3. The pyroproxyfen being used (as recommended by WHO) is manufactured by Sumimoto Chemical, a Japanese subsidiary of Monsanto. “*

*4. Brazilian doctors (Abrasco) are claiming that the strategy of chemical control is contaminating the environment as well as people, that it is not decreasing the amount of mosquitoes, and that this*

<sup>386</sup> <http://www.theguardian.com/environment/2015/apr/27/cross-party-support-from-mps-for-inquiry-into-sheep-dip-poisoning>

<sup>387</sup> <http://www.theguardian.com/environment/2016/feb/12/farmers-warned-bluetongue-disease-likely-to-arrive-in-england-this-year>

<sup>388</sup> <http://www.ncbi.nlm.nih.gov/pubmed/15694685>

<sup>389</sup> [http://www.reduas.com.ar/wp-content/uploads/downloads/2016/02/Informe-Zika-de-Reduas\\_TRAD.pdf](http://www.reduas.com.ar/wp-content/uploads/downloads/2016/02/Informe-Zika-de-Reduas_TRAD.pdf)

strategy is in fact a commercial manoeuvre from the chemical poisons industry, deeply integrated into Latin American ministries of health as well as WHO and PAHO.

5. Massive spreading using planes, as the governments of Mercosur are considering, is criminal, useless, and a political manoeuvre to simulate that actions are taken. The basis of the progress of the disease lies in inequality and poverty, and the best defence are community-based actions.

6. The last strategy deployed in Brazil, and which might be replicated in all our countries, is the use of **GM mosquitoes — a total failure, except for the company supplying mosquitoes!**<sup>390</sup>

**This area of Brazil has been a target for pesticides companies to use pesticides banned elsewhere** Cal Crilly wrote the following:<sup>391</sup> "The farmers of Brazil have become the world's top exporters of sugar, orange juice, coffee, beef, poultry and soybeans. They've also earned a more dubious distinction: In 2012, Brazil passed the United States as the largest buyer of pesticides. This rapid growth has made Brazil an enticing market for pesticides banned or phased out in richer nations because of health or environmental risks...According to the latest figures available from Brazil's health ministry, published on 20 January, 3,893 cases of microcephaly have been recorded since the start of 2015. **Pernambuco accounts for 1,306 of those, around a third of the total.** In 2014, there were 150 cases across the whole of Brazil."

Even as early as 1999, a Pesticides Action Network<sup>392</sup> Report singled out Pernambuco as having the highest rate of pesticide usage and the poorest population: "A study of pesticide use on tomatoes in the Northern State of Pernambuco, Brazil, indicates high exposure to pesticide workers and poor application methods which threaten the ecology of the area. Researchers Adelia Araujo and Lia Augusto report on their findings which show high levels of banned pesticide residues in many tomato samples."

Glyphosate, which is widely used on GM crops, causes birth defects.<sup>393</sup> The release of GM crops in Brazil has helped make it the largest consumer of agrochemicals in the world, according to a hard-hitting new report from Brazil's National Cancer Institute José Alencar Gomes da Silva (INCA), part of the country's Ministry of Health.<sup>394</sup> The report says that national consumption of agrochemicals is equivalent to 5.2 litres of agrochemicals per year for each inhabitant. Agrochemical sales increased from USD 2 billion in 2001 to 8.5 billion in 2011. The report names GM crops as a key cause of the trend: "Importantly, the release of transgenic seeds in Brazil was one of the factors responsible for putting the country in first place in the ranking of agrochemical consumption – since the cultivation of these modified seeds requires the use of large quantities of these products."

A special investigative report by Reuters in April 2015:<sup>395</sup> "This rapid growth has made Brazil an enticing market for pesticides banned or phased out in richer nations because of health or environmental risks. At least four major pesticide makers – U.S.-based FMC Corp., Denmark's Cheminova A/S, Helm AG of Germany and Swiss agribusiness giant Syngenta AG – sell products here that are no longer allowed in their domestic markets, a Reuters review of registered pesticides found. Among the compounds widely sold in Brazil: paraquat, which was branded as "highly poisonous" by U.S. regulators. Both Syngenta and Helm are licensed to sell it here.

Brazilian regulators warn that the government hasn't been able to ensure the safe use of 'agrotóxicos', as herbicides, insecticides and fungicides are known in Portuguese. In 2013, a crop duster sprayed insecticide on a school in central Brazil. The incident, which put more than 30

<sup>390</sup> Oxitec, Oxford, UK. The firm has been heavily criticized by scientists and geneticists:

<http://www.nature.com/nbt/journal/v29/n1/full/nbt0111-9a.html>

<http://www.econexus.info/publication/cso-statement-planned-field-release-gm-mosquitos>

<sup>391</sup> <http://www.sott.net/article/311368-Microcephaly-Is-it-the-Zika-Virus-or-pesticides-birth-defects>

<sup>392</sup> <http://www.pan-uk.org/pestnews/Issue/pn46/pn46p12.htm>

<sup>393</sup> <http://www.amsi.ge/jbpc/31515/jbpc31515.html>

<sup>394</sup> <http://sustainablepulse.com/2015/04/10/brazils-national-cancer-institute-names-gm-crops-as-cause-of-massive-pesticide-use/#.VrDkU7fhDct>

<sup>395</sup> <http://www.reuters.com/investigates/special-report/brazil-pesticides/>

*schoolchildren and teachers in the hospital, is still being investigated. But with its equatorial sunlight, steady temperatures and year-round harvests, Brazil is also a fertile place for insects, fungi and weeds. To keep them at bay, farmers are applying more and more pesticides.”*

This accelerating use of pesticides each year is happening in the UK and the US.

## **The Battle in Europe over Endocrine Disruptive Chemicals (EDCs)**

**What are EDCs? Theo Colborn’s crucial research in the early 1990s into the chemicals that were changing humans and the environment was ignored**

The late Theo Colborn<sup>396</sup> (1927-1914) was the first to research and write about EDCs, man-made chemicals that became widespread in the environment after WW II. In a book published in 1996, *The Pesticide Conspiracy*, Colborn, Dumanoski and Peters revealed the full horror of what was happening to the world as a result of contamination with EDCs.<sup>397</sup> There was emerging scientific research about how a wide range of man-made chemicals can disrupt delicate hormone systems in humans. These systems play a critical role in processes ranging from human sexual development to behaviour, intelligence, and the functioning of the immune system. In 1996, polychlorinated biphenyls (PCBs), pesticides DDT, chlordane, lindane, aldrin, dieldrin, endrin, toxaphene, heptachlor, dioxin, atrazine and dacthal had been shown to be EDCs. Colborn illustrates the problem by constructing a diagram (page 105) of the journey of a PCB molecule from a factory in Alabama into a polar bear in the Arctic. Colborn says: *“The concentration of persistent chemicals can be magnified millions of times as they travel to the ends of the earth...Many chemicals that threaten the next generation have found their way into our bodies. There is no safe, uncontaminated place.”*

### **Endocrine Disrupting Chemicals (EDC) – 2012 Commissioned by WHO and UNEP**

An assessment of the State of Science of Endocrine Disruptors was prepared for the United Nations Environment Program and the World Health Organization by a group of approximately 50 expert scientists led by Professor Åke Bergman, University of Stockholm.<sup>398</sup>

The authors outlined the current evidence of: 1) a high incidence, and increasing trends, of many endocrine-related disorders in humans; 2) observations of endocrine-related effects in wildlife populations; 3) identification of chemicals with endocrine disrupting properties linked to disease outcomes in laboratory studies.

*“Endocrine-related disorders in humans are manifest by:*

- *Increases in low semen quality in young men (up to 40%)*
- *Incidence of genital malformations has increased over time*
- *Adverse pregnancy outcomes and birth defects has increased in many countries*
- *Neurobehavioural disorders related to thyroid dysfunction has increased*
- *Endocrine-related cancers (breast, endometrial, ovary, prostate, testicular and thyroid cancers) have been increasing over the past 40 -50 years*
- *Earlier onset of breast development in young girls which leads to breast cancer*
- *The prevalence of obesity and type 2 diabetes is increasing. The WHO estimates that 1.5 billion adults worldwide are overweight or obese and that the number with type 2 diabetes increased from 153 million to 347 million between 1980 and 2008”*

The conclusion was: *“It is essential to evaluate associations between EDC exposures and health outcomes by further developing methods for which proof of concept is currently under development.”* An Editorial in the *Lancet*<sup>399</sup> concluded: *“there is currently no widely agreed system for assessing the*

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<sup>396</sup> <http://endocrinedisruption.org/about-tedx/theo-colborn>

<sup>397</sup> Colborn, T., Myers, J.P., & Dumanoski, D. *Our Stolen Future. How Man-made Chemicals are Threatening our Fertility, Intelligence and Survival.* Little, Brown and Company: London; 1996.

<sup>398</sup> [http://unep.org/pdf/9789241505031\\_eng.pdf](http://unep.org/pdf/9789241505031_eng.pdf)

<sup>399</sup> [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(13\)60564-4/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60564-4/fulltext)

*strength of associations between exposure to chemicals (including EDCs) and adverse health outcomes.”*

Glyphosate was not even considered as a candidate for an Endocrine Disrupting Chemical: **why was that?** Several independent scientists have shown that glyphosate is an endocrine disrupter.<sup>400</sup> The evidence produced in the Report that atrazine was also an EDC was overwhelming; why was atrazine not named as one? The reason is that atrazine is still used extensively in many countries, including the US and Australia and Syngenta relentlessly pursues anyone who says it is harmful.<sup>401</sup>

### **Hot dispute between endocrinologists and toxicologists about the dose required in order to disrupt mammalian hormones and what precisely constitutes a hormone<sup>402</sup>**

*“In 2002, the relevance of EDCs to people and their biological mechanisms were poorly understood”* says Andrea Gore (Professor of Pharmacology and Toxicology, University of Texas at Austin in the USA). But a flood of papers since then by *“academic researchers and epidemiologists with no conflicts of interests”*, Gore emphasises, has led to a radical reappraisal of the hazards posed by EDCs. Standard toxicology assumes that as the dose of a chemical increases, so does its effect, and vice versa. This is a monotonic dose response. Safe exposure standards are usually set by exposing an experimental animal to a high dose of a chemical, and then successively decreasing doses until the effects of the chemical are no longer detectable. But this logic falls apart if the compound under investigation happens to cause a non-monotonic dose response—i.e., there is no linear relation between dose and response, and a significant response can be caused at a low dose despite there being no or little response at a high dose. *“Hormones act at extremely low doses; furthermore, actions of hormones (or EDCs) at one dose may not predict outcomes at another dose”*, Gore points out.

Linda Birnbaum, the straight-talking Director of the US National Institute of Environmental Health Sciences (NIEHS), one of the National Institutes of Health, sums up the mood of frustration. *“There are some people still stuck in the last century”*, she says. And although she stresses that the EPA can *“only do so much”*, she continues that *“the EPA’s focus on endocrine disruption is very much on oestrogen, androgen, and thyroid. Well guess what, there are lots of other endocrine systems. Ten years ago we were thinking things were pretty simple, it turns out to be a lot more complicated”*, and many regulators, in Birnbaum’s opinion, are not capturing that complexity. *“Context is everything”*, she says. *“You can have a completely different response to the same hormone, possibly going through the same receptor system, in one tissue than you’d have in another tissue. And that response can be very time dependent; not only chronic versus acute but developmentally.”*

For example one study<sup>403</sup> found that breast cancer cell proliferation is accelerated by glyphosate in extremely low concentrations. *“The present study used pure glyphosate substance at log intervals from  $10^{-12}$  to  $10^{-6}$  M. These concentrations are in a crucial range which correlated to the potential biological levels at parts per trillion (ppt) to parts per billion (ppb) which have been reported in epidemiological studies.”*

### **Séralini’s study exposed glyphosate as a being an endocrine disruptor: the CRIIGEN 2-year feeding study provoked chronic hormone and sex dependent pathologies in rats; males developed tumours at 4 months and females at 7 months<sup>404</sup>**

*“The health effects of a Roundup®-tolerant genetically modified maize (from 11% in the diet), cultivated with or without Roundup®, and Roundup® alone (from 0.1 ppb in water), were studied for 2 years in rats. In females, all treated groups died 2–3 times more than controls, and more rapidly. This difference was visible in 3 male groups fed GMOs. All results were hormone and sex dependent,*

<sup>400</sup> <http://www.ncbi.nlm.nih.gov/pubmed/19539684>

<sup>401</sup> [www.newyorker.com/reporting/2014/02/10/140210fa\\_fact\\_aviv](http://www.newyorker.com/reporting/2014/02/10/140210fa_fact_aviv)

<sup>402</sup> [http://www.thelancet.com/journals/landia/article/PIIS2213-8587\(13\)70057-3/fulltext](http://www.thelancet.com/journals/landia/article/PIIS2213-8587(13)70057-3/fulltext)

<sup>403</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23756170>

<sup>404</sup> <http://dx.doi.org/10.1016/j.fct.2012.08.005>

and the pathological profiles were comparable. Females developed large mammary tumours almost always more often than and before controls, the pituitary was the second most disabled organ; the sex hormonal balance was modified by GMO and Roundup® treatments. In treated males, liver congestions and necrosis were 2.5–5.5 times higher. This pathology was confirmed by optic and transmission electron microscopy. Marked and severe kidney nephropathies were also generally 1.3–2.3 greater. Males presented 4 times more large palpable tumors (kidney) than controls which occurred up to 600 days earlier. Biochemistry data confirmed very significant kidney chronic deficiencies; for all treatments and both sexes, 76% of the altered parameters were kidney related. These results can be explained by the non-linear endocrine-disrupting effects of Roundup®, but also by the overexpression of the transgene in the GMO and its metabolic consequences.”

Authors’ highlights:

- A Roundup®-tolerant maize and Roundup® provoked chronic hormone and sex dependent pathologies.
- Female mortality was 2–3 times increased mostly due to large mammary tumours and disabled pituitary.
- Males had liver congestions, necrosis, severe kidney nephropathies and large palpable tumours.
- This may be due to an endocrine disruption linked to Roundup® and a new metabolism due to the transgene.
- GMOs and formulated pesticides must be evaluated by long-term studies to measure toxic effects.

**Endocrine Disrupting Chemicals: Owen Paterson former UK Environment Minister in a secret letter to Syngenta about neonicotinoids (April 2013) in which EDCs were mentioned<sup>405</sup>**

*“You raise the point that this issue is one of several that impacts on the availability of pesticides in agriculture. We are well aware of this point and you will know that amongst other things, the UK has been arguing hard for a proportionate approach to regulating Endocrine Disrupting Chemicals.”*

**Why is the UK Government so sensitive about Julian Assange?**

**It might ruin their special relationship with the US: Wikileaks exposures had embarrassed both governments because the cables weren’t just about security as they had claimed**

**Wikileaks exposed information about US targeting the EU over GM crops<sup>406</sup>**

When France made moves to ban Monsanto in 2007, US embassy cable recommends drawing up list of countries for retaliation over opposition to genetic modification.<sup>407</sup> Ambassador Craig Stapleton wrote on 14/12/2007: *“Country team Paris recommends that we calibrate a target retaliation list that causes some pain across the EU since this is a collective responsibility, but that also focuses in part on the worst culprits. The list should be measured rather than vicious and must be sustainable over the long term, since we should not expect an early victory. Moving to retaliation will make clear that the current path has real costs to EU interests and could help strengthen European pro-biotech voices,”* said Stapleton, who with Bush co-owned the Dallas/Fort Worth-based Texas Rangers baseball team in the 1990s. The cables show that US diplomats were working directly for GM companies such as Monsanto.

**Margaret Thatcher’s special relationship with Ronald Reagan**

*“Poison Spring, the Secret History of the (US) Environmental Protection Agency (EPA) documents, in devastating detail, the corruption and misuse of science and public trust that has turned the (US)*

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<sup>405</sup> <http://www.guardian.co.uk/environment/interactive/2013/apr/29/environment-secretary-letter-syngenta-in-secticide-ban>

<sup>406</sup> <http://wikileaks.org/cable/2007/12/07PARIS4723.htm>

<sup>407</sup> <http://www.theguardian.com/world/2011/jan/03/wikileaks-us-eu-gm-crops/print>

EPA from a watchdog into a “polluters’ protection agency”.<sup>408</sup> One of the authors, EG Vallianatos, worked for the EPA for 25 years, and wrote a book about his time there: “Rarely has our government allowed and encouraged the actions of the chemical industry so openly as it did during Reagan’s tenure in Office. He opened the door wide to corporate influence throughout the government, and especially at the Environmental Protection Agency, which began a precipitous functional decline. Reagan gave corporations the reins of power at the agency and they immediately began tearing the EPA apart.” Margaret Thatcher took a leaf out of Reagan’s book.

### **Tony Blair, Monsanto and the Royal Society combine to discredit Dr Arpad Pusztai when he found that rats fed GM potatoes had complications; his lab was closed down**

This scandal involved Tony Blair and the Royal Society.<sup>409</sup> On 10 August 1998 in a Granada ‘World in Action’ broadcast<sup>410</sup> Dr Arpad Pusztai (a GM expert leading the team at the Rowett Institute) explained his research that showed that rats fed with genetically modified potatoes had suffered immune damage. He raised questions about the safety of GM food in the human diet on the basis of the study. The news flashed around the world. Professor Robert Orskov OBE who had worked at the Rowett Institute for 33 years was told that phone calls went from Monsanto, the American firm that produces 90% of the world’s GM food, to Clinton and then to Blair. “Clinton rang Blair and Blair rang James” (Professor James, Director of the Rowett Institute). “There is no doubt he was pushed by Blair to do something. It was damaging the relationship between the USA and the UK, because it was going to be a huge blow for Monsanto.” Dr Pusztai lost his job and his Laboratory in the Rowett Institute was closed down.

In 2006, Tony Blair, Lord David Sainsbury as Minister for Trade, Industry and Science and the Natural Environment Research Council (NERC) presided over the closure of the Wildlife Research Sites.

### **Land ownership in Britain**

*“Barely two centuries ago, most of the world’s productive land was owned either communally or by the monarchy or the church. But that pattern was consigned to history as a result of the most creative and destructive cultural force in the modern era: the idea of individual land ownership.”*<sup>411</sup>  
Andro Linklater: *Owning the Earth: The transforming history of land ownership.*

George Monbiot said: “At the moment the owners of only 26% of the land in Scotland have been identified. The number of holdings in England is now falling by 2% a year, which is possibly the fastest concentration of ownership since the acts of enclosure.”<sup>412</sup> He says that the European Commission wanted to impose a cap of £26,000 on what an individual farmer should receive...but David Cameron fought this and as a result the biggest 174 landowners in England take £120 m between them. It is impossible to find out the holdings of each landowner are; until it comes to farm subsidies...even then it is hidden from the public. Landowners also get paid for managing the grouse moors that will contribute to flooding downstream. Sporting estates – where the richest people in Britain, or oil sheikhs and oligarchs from elsewhere, shoot grouse and stags – are exempt from business rates. Monbiot says: “Walk into any mairie in France or ayuntamiento in Spain and you will be shown the cadastral registers on request, on which all the land and its owners are named. What sort of nation is this, in which you cannot discover who owns the ground beneath your feet?”

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<sup>408</sup> [http://www.theecologist.org/reviews/2767951/poison\\_spring\\_the\\_secret\\_history\\_of\\_the\\_epa.html](http://www.theecologist.org/reviews/2767951/poison_spring_the_secret_history_of_the_epa.html)

<sup>409</sup> <http://www.psrastr.org/pusztblair.htm>

<sup>410</sup> <http://news.bbc.co.uk/1/hi/health/149882.stm>

<sup>411</sup> Andro Linklater: *Owning the Earth: The Transforming History of Land Ownership.* Bloomsbury 2015

<sup>412</sup> <http://www.monbiot.com/2014/12/02/breaking-the-silence/>



### Wealth inequality in Britain

The UK is the only G7 country to record **rising wealth inequality** in 2000-14. Wealth inequality has risen four times faster in the seven years after the crash compared with the seven years before. The rich in the UK are becoming richer faster than ever.<sup>413</sup>

There are 820 members of the House of Lords. If they all attended at the same time there wouldn't be room for them. In 2006, Lord David Sainsbury left under a shadow because of the 'cash for peerages' scandal. In 2015, the fact that someone donates large sums of money to a party and then gets a peerage (or is made a Minister) is unremarkable.

### Strong links between Parliament and the City

According to John Rees:<sup>414</sup> *"Support for the banking sector in France was just 20% of national wealth; in Germany, 25%. Even in the US where the crisis began, it was only 35%. But in the UK, the government pumped money into the banks that was worth nearly 90% of our national wealth...The links between the City and Parliament are as strong as ever... Some 68 MPs and Lords have controlling interests or directorships in corporations linked to tax havens. At a time when privatisation of the NHS is being debated, over 75 MPs have business interests directly linked to private pharmaceutical firms...The City is crash-prone debt generator. It is an engine of inequality. It blights the city."*

### Are pesticides associated with coral bleaching, aquatic invertebrate declines, and birth defects in Hawaii?

#### **Australia-- The 27-year decline of coral cover on the Great Barrier Reef and its causes**<sup>415</sup>

Extracts: Based on the world's most extensive time series data on reef condition (2,258 surveys of 214 reefs over 1985–2012), we show a major decline in coral cover from 28.0% to 13.8% (0.53% y<sup>-1</sup>), a loss of 50.7% of initial coral cover. Tropical cyclones, coral predation by crown-of-thorns starfish (COTS), and coral bleaching accounted for 48%, 42%, and 10% of the respective estimated losses amounting to 3.38% y<sup>-1</sup> mortality rate. Importantly, the relatively pristine northern region showed no overall decline. Thus, reducing COTS populations, by improving water quality and developing alternative control measures, could prevent further coral decline and improve the outlook for the Great Barrier Reef. Such strategies can, however, only be successful if climatic conditions are stabilized, as losses due to bleaching and cyclones will otherwise increase.

#### **Glyphosate persistence in samples of seawater extracted from the Great Barrier Reef**<sup>416</sup>

Extracts: Glyphosate is one of the most widely applied herbicides globally but its persistence in seawater has not been reported. Here we quantify the biodegradation of glyphosate using standard "simulation" flask tests with native bacterial populations and coastal seawater from the Great Barrier Reef. The half-life for glyphosate at 25 °C in low light was 47 days, extending to 267 days in the dark at 25 °C and 315 days in the dark at 31 °C, which is the longest persistence reported for this herbicide. AMPA, the microbial transformation product of glyphosate, was detected under all conditions, confirming that degradation was mediated by the native microbial community. This study demonstrates glyphosate is moderately persistent in the marine water under low light conditions and is highly persistent in the dark. Little degradation would be expected during flood plumes in the tropics, which could potentially deliver dissolved and sediment-bound glyphosate far from shore. ***'Glyphosate has not often been included in regular monitoring programs as the stand-***

<sup>413</sup> <http://www.theguardian.com/commentisfree/2014/oct/15/wealth-inequality-uk-ticking-timebomb-credit-suisse-crash>

<sup>414</sup> <http://thepeoplesassembly.org.uk/john-rees-on-the-today-programme-edited-by-pj-harvey/>

<sup>415</sup> <http://www.pnas.org/content/109/44/17995.full>

<sup>416</sup> <http://www.sciencedirect.com/science/article/pii/S0025326X14000228>

*alone analytical methods are often cost-prohibitive, resulting in a long-term deficiency in global datasets’.*

**Advice for Cane Sugar farmers (sugarresearch.com.au) is the first organisation that has admitted that herbicides are being detected in the Great Barrier Reef Lagoon (GBR)**<sup>417</sup>

They state that: “Products of major concern are atrazine, ametryn, hexazinone and diuron (all Group C or PSII herbicides). These products and others are being detected in waterways and in the Great Barrier Reef Lagoon (GBR)” Page 108. Even though glyphosate is one of the most widely applied herbicides globally, it is evident that very few studies had been done because it is expensive.

Herbicides such as glyphosate, atrazine and dicamba were recommended by sugarresearch.com.au (2013) for weed control: pre-emergent or post-emergent, sometimes by aerial spraying. Aerial spraying is commonly used for the control of vines at the out-of-hand stage or in the mature crop, particularly in the areas when extreme crop lodging occurs. *“These products and others are being detected in waterways and in the Great Barrier Reef Lagoon (GBR).” ... “Control of weed growth in tidal drains should be carried out in accordance with the guidelines in the SmartCane Riparian and Wetlands Area practice booklet or with an individual permit. All other watercourses in Queensland are protected under the Water Resources Act 1989.”*

Instructions for using Roundup® Advance AG Herbicide by Monsanto include: *“Protection of Wildlife, Fish, Crustacea and Environment. Do not contaminate dam, river or stream with the product.”*<sup>418</sup>

Clothianidin (Sumitomo Shield a systemic neonicotinoid insecticide) has also been granted registration by APVMA for use on very low-lying sugar cane plantations. Instructions: PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT<sup>419</sup>

*DO NOT apply under weather conditions, or from spraying equipment, that may cause spray drift onto nearby or adjacent areas, particularly wetlands, water-bodies or watercourses. **This product is highly toxic to aquatic invertebrates.** DO NOT contaminate streams, rivers or waterways with the chemical or used containers. DO NOT apply when there are aquatic and wetland areas including aquacultural ponds or surface streams and rivers downwind from the application area and within the mandatory no-spray zone shown in table 1.*

**Two pieces of vital evidence that the devastating deterioration in the Great Barrier Reef is man-made and not due to natural disasters came from two papers:**

- *“Importantly, the relatively pristine northern region showed no overall decline.”*<sup>420</sup>
- *“Glyphosate has not often been included in regular monitoring programs as the stand-alone analytical methods are often cost-prohibitive, resulting in a long-term deficiency in global datasets.”*<sup>421</sup>

### **Flooding causes run-off of pesticides from farming areas**

Two further ecological disasters have occurred down the Queensland Coast after the floods in December 2010 and January 2011. In July 2011 *“the northern coast of Queensland has become littered with sick and dying turtles and dugongs (sea cows).”* It was attributed to run-off of nutrients into the ocean *“potentially killing the sea grass that both turtles and dugongs feed on.”*<sup>422</sup>

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<sup>417</sup>

<http://www.sugarresearch.com.au/content/FlippingBooks/Sugarcane%20Advisors%20Information%20Kit/files/assets/common/downloads/Sugarcane%20Advisor%20Information%20Kit%20FINAL.pdf>

<sup>418</sup> <http://websvr.infopest.com.au/LabelRouter?LabelType=L&ProductCode=70096>

<sup>419</sup> [http://www.sumitomo-chem.com.au/sites/default/files/pdf/labels/shield\\_label.pdf](http://www.sumitomo-chem.com.au/sites/default/files/pdf/labels/shield_label.pdf)

<sup>420</sup> <http://www.pnas.org/content/109/44/17995.full>

<sup>421</sup> <http://www.sciencedirect.com/science/article/pii/S0025326X14000228>

<sup>422</sup> <http://www.telegraph.co.uk/news/worldnews/australiaandthepacific/australia/8753630/Mass-starvation-of-dugongs-and-turtles-on-Great-Barrier-Reef.html>

### **Hawaii to experience worst-ever coral bleaching due to high ocean temperatures**

Warmer-than-normal ocean temperatures around Hawaii this year will likely lead to the worst coral bleaching the islands have ever seen, scientists said.<sup>423</sup> Many corals are only just recovering from last year's bleaching, which occurs when warm waters prompt coral to expel the algae they rely on for food, said Ruth Gates, the director of the Hawaii Institute of Marine Biology. The phenomenon is called bleaching because coral lose their color when they push out algae.

The island chain experienced a mass bleaching event in 1996, and another one last year. This year, ocean temperatures around Hawaii are about 3F to 6F warmer than normal, said Chris Brenchley, meteorologist for the US National Weather Service (NWS) in Honolulu.

Bleaching makes coral more susceptible to disease and increases the risk they will die. This is a troubling for fish and other species that spawn and live in coral reefs. It is also a concern for Hawaii's tourism-dependent economy.

### **Birth defects and GMOs in Hawaii: Pesticides in paradise**

Carla Nelson, Californian pediatrician says that in Waimea, there have been at least nine babies born with congenital cardiac malformations in five years; that's more than 10 times the national rate, according to analysis by local doctors. They find themselves in the eye of a storm swirling for the past three years around the Hawaiian archipelago over whether a major cash crop on four of the six main islands, corn that's been genetically modified to resist pesticides, is a source of prosperity, as the companies claim – or of birth defects and illnesses, as the doctors and many others suspect.

### **Gastroschisis: a major congenital defect of the abdominal wall**

Sidney Johnson, a pediatric surgeon at the Kapiolani Medical Center for Women and Children who oversees all children born in Hawaii with major birth defects and operates on many, says he's been thinking about pesticides a lot lately. The reason: he's noticed that the number of babies born here with their abdominal organs outside, a rare condition known as gastroschisis, has grown from three a year in the 1980s to about a dozen now.

### **Atrazine does appear to be linked with developmental abnormalities despite denials**

Gastroschisis is a major congenital defect in the abdominal wall, almost always to the right of the navel, through which the abdominal contents freely protrude and requires multiple operations. A Daily Mail journalist reported nine cases of gastroschisis in one street in Northfleet, Kent over 12 years (from 1999-2012) in an area where high levels of atrazine had been noted.<sup>424</sup> Gastroschisis had been reported in association with atrazine in the US. In 2010, researchers at the University of Washington released a landmark study analysing almost 20 years of medical and agricultural data for Eastern Washington. It linked the rising rate of gastroschisis to exposure to atrazine-contaminated waters, particularly for women who conceived in spring - the peak spraying time.<sup>425</sup>

The investigators into the cluster of babies in Waterdales Road had found this scientific study, but for some unknown reason had dismissed it. The Director of Public Health who finally published the Report on 5/3/2013 concluded that they did not find evidence of higher rates of gastroschisis than could be considered normal in the Waterdales Road area.<sup>426</sup>

Syngenta said: *"There is no proven link between atrazine and these defects. Atrazine does not cause developmental abnormalities."*

In May 2013 a Case-control study of maternal residential atrazine exposure and male genital malformations in their offspring was undertaken in Texas.<sup>427</sup>

Extracts from Abstract: *"Exposure to endocrine disrupting chemicals has been associated with risk for male genital malformations. However, residential prenatal exposure to atrazine, an endocrine*

<sup>423</sup> <http://www.theguardian.com/us-news/2015/sep/13/hawaii-coral-bleaching-scientists-predict-worst-ever>

<sup>424</sup> <http://www.dailymail.co.uk/news/article-2142106/One-street-Nine-babies-born-horrific-rare-deformity-And-troubling-question--mothers-poisoned-weedkiller.html>

<sup>425</sup> <http://www.ncbi.nlm.nih.gov/pubmed/20207240> Agricultural-related chemical exposures, season of conception, and risk of gastroschisis in Washington State.

<sup>426</sup> Investigation into gastro~ cases final amended.pdf

<sup>427</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23494929>

*disrupting pesticide, has not been evaluated... Previous literature from animal and epidemiological studies supports our findings. Our results provide further evidence of a suspected teratogenic role of atrazine."*

The incidence of abdominal wall defects is related to surface water atrazine and nitrate in Indiana<sup>428</sup> appeared and a further paper confirmed the link: Maternal residential atrazine exposure and gastroschisis by maternal age.<sup>429</sup>

### **Australia had a similar cluster of cases of gastroschisis to the UK in a small community in NSW in 2011, but industry and the APVMA denied a link**

The global incidence of gastroschisis is one in 5,000, but data from the Australian Bureau of Statistics puts the incidence for NSW's Northern Rivers region at one in 950 births. In the past three years there have been at least seven babies born with the defect around the community of Wadeville.<sup>430</sup> In a population-based study of 122 cases in Western Australia between 1980 and 2001 there was a sustained increase in incidence of gastroschisis and a significant fetal death rate in the third trimester.<sup>431</sup> Another 2010 study from the University of California found one in 10 male frogs exposed to Atrazine turned into females, while 75 per cent were rendered sterile.

### **The manufacturer of Atrazine and Regulators did not come to the same conclusions**

The Australian Pesticides and Veterinary Medicines Authority (APVMA) is the regulator of pesticides. *"The APVMA has reviewed in detail scientific studies that suggest possible links between Atrazine and gastroschisis and Atrazine and Hermaphroditism in frogs. While the studies are interesting, they do not satisfy internationally accepted standards of scientific rigour, relevance and reliability, which regulators rely upon to make decisions,"* the APVMA said in a statement.

### **Summary of Center for Food Safety Pesticide Report for Hawaii: Agrochemical corporations have bought land on Hawaii for intensive testing of GE Crops which are not relevant to local needs** GENETICALLY ENGINEERED (GE) CROPS IN HAWAII (SECTION 3)

Hawaii leads the nation in GE crop field trials, with tests on 1,141 sites in 2014 alone, representing a far higher density of field tests than on larger mainland states (3.1).

The majority of GE crops tested in Hawaii are corn (67%) or soybeans (24%), while virtually no GE crops relevant to Hawaii's food needs are being tested (3.2).

The most commonly tested GE "trait" is herbicide-resistance (82% of field releases over the past two years), which permits heavier and more frequent spraying of herbicides than is otherwise possible (3.2 & 3.4).

### PESTICIDE USE ON HAWAII (SECTION 4)

GE seed corn in Hawaii involves much more intensive use of pesticides than mainland field corn, for instance, 17 times more restricted use insecticides (4.1 to 4.4).

From 2007-2012 on Kauai, DuPont-Pioneer alone applied 90 different pesticide formulations representing 63 active ingredients on 2/3 of the days each year, with on average 8.3 to 16 applications per application day in various years of this period (4.3).

Large agricultural users of more hazardous "restricted use pesticides" (RUPs) – mostly seed firms – account for 99.8% of agricultural RUP sales on the Islands (4.6).

### ADVERSE IMPACTS OF PESTICIDES REPORTED IN HAWAII (SECTION 5)

Pesticide drift frequently sickens Hawaii's schoolchildren, triggering nausea, vomiting, dizziness and difficulty breathing, among other symptoms, and in some cases necessitating decontamination showers, school evacuations and hospitalization.

<sup>428</sup> <http://www.ncbi.nlm.nih.gov/pubmed/17560200>

<sup>429</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23184502>

<sup>430</sup> <http://www.abc.net.au/news/2011-05-14/birth-defect-cluster-sparks-investigation/2715546>

<sup>431</sup> [http://www.ajog.org/article/S0002-9378\(03\)00819-6/abstract](http://www.ajog.org/article/S0002-9378(03)00819-6/abstract)

Children and adults in Waimea, Kaua'i, downwind of DuPont-Pioneer fields, have been particularly hard hit by pesticide drift and "fugitive dust;" Kaua'i physicians report "almost daily" respiratory complaints, as well as nose bleeds and dermatitis; and they suspect pesticides as a possible cause of high cancer and birth defect rates.

Hawai'i's lack of a pesticide poisoning surveillance system, as found in 11 other states, means that pesticide drift is likely far more common than realized.

#### HEALTH IMPACTS OF PESTICIDE EXPOSURE (SECTION 6)

Farmworkers and children are at greatest risk from pesticides, due to high exposure and greater sensitivity, respectively. Fetuses (via maternal exposure) are the most vulnerable.

In a major review of the medical literature, the American Academy of Pediatrics found strong evidence linking pesticide exposure of kids to childhood cancers, neurobehavioral and cognitive deficits, adverse birth outcomes, and asthma. Many of the implicated pesticides (e.g. chlorpyrifos, atrazine) are heavily used in Hawai'i (6.2).

Adults exposed to pesticides have higher risk of various cancers, Parkinson's disease, depression, and reproductive problems, such as low sperm counts (6.1).

Studies suggest that even one-time (acute) pesticide poisoning episodes can sometimes have long-term health impacts (6.4).

#### ENVIRONMENTAL IMPACTS OF PESTICIDES IN HAWAI'I (SECTION 7)

Hawai'i's incredible biodiversity and many threatened and endangered species are at risk from intensive pesticide use on the Islands.

For instance, atrazine contamination of surface water threatens amphibian life, while many insecticides heavily used in seed corn operations are toxic to bees.

#### **Worldwide Fund for Nature's (WWF) Report on the state of the world's oceans**

WWF Living Blue Planet Report - an updated study of marine mammals, birds, reptiles and fish - shows that marine populations have declined by 49% between 1970 and 2012.<sup>432</sup>

It was published in September 2015 and painted a bleak picture of the state of the world's oceans: marine populations, including reef ecosystems, have halved in size since 1970 and some species are teetering on the brink of extinction.<sup>433</sup> Coral reef cover has declined by 50% in the last 30 years and reefs could disappear by as early as 2050, the report says if current rates of ocean warming and acidification continue. WWF estimates that 850 million people depend directly on coral reefs for their food security - a mass die-off could trigger conflict and human migration on a massive scale. 100 million of these reef-reliant peoples live in the Coral Triangle— singled out in the report as "richer in marine natural capital" than anywhere else on earth. Currently, fisheries exports from the Coral Triangle – which encompasses the waters of Indonesia, Malaysia, Philippines, Papua New Guinea, Solomon Islands and Timor Leste – amount to around \$5bn (£3.3bn), including 30% of the global tuna catch, and a lucrative trade in live reef fish for food markets, which is worth nearly \$1bn (£655m). But there are serious questions about the sustainability of these fisheries.

But the severest threat is to the reef ecosystems themselves: 85% of reefs in the Coral Triangle are classified as threatened, significantly higher than the global average of 60%.

More than 40 per cent of coral loss has been caused by outbreaks of the coral-eating crown-of-thorns starfish, which are fuelled by nutrient run-off from farms (De'ath et al., 2012). WWF is working with farmers, governments and companies to cut pollution so coral can recover.

#### **Dead zones in the Gulf of Mexico are due to accumulation of pesticides destroying marine life**

Dead zones are defined as large areas of ocean water that are mostly devoid of oxygen.<sup>434</sup> These are a growing problem worldwide. They are claimed by the journalist from earthsky.org to be 'nutrient-

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<sup>432</sup> [http://assets.wwf.org.uk/downloads/living\\_blue\\_planet\\_report\\_2015.pdf](http://assets.wwf.org.uk/downloads/living_blue_planet_report_2015.pdf)

<sup>433</sup> <http://www.theguardian.com/global/the-coral-triangle/2015/sep/25/wwf-worlds-richest-reef-system-could-soon-succumb-to-climate-change>

<sup>434</sup> <http://earthsky.org/earth/large-2015-gulf-of-mexico-dead-zone>

rich discharges from farms, sewage treatment plants, and other sources,' and pose a major threat to marine life. "Of the more than 550 dead zones that form each year around the world, the dead zone in the Gulf of Mexico is thought to be the second largest one caused by humans. Scientists have been tracking the size of the dead zone in the Gulf of Mexico for the past 30 years. Data from this year's survey indicate that the dead zone that formed in 2015 is above average in size, likely because of heavy rains in June. The 2015 dead zone in the Gulf Mexico was measured at 6,474 square miles (16,768 square kilometers) during a July 28 to August 3 survey cruise. For the past five years, the dead zone has averaged about 5,500 square miles (14,245 square kilometers). Hence, this year's dead zone is above average in size."

**These so-called 'dead zones' are created by massive pesticide run-off, which kills aquatic vertebrates and invertebrates, but PESTICIDES HAVE NEVER ONCE BEEN MENTIONED.**

These US maps will show the massive usage of multiple pesticide products and the magnitude of the cover-up and collusion between the Agrochemical lobby and the majority of the press.

### **Pesticide usage maps in the US; Defra does not have any maps for the UK**

Glyphosate is the most widely used 'herbicide' globally. This is a link to the distribution map of estimated agricultural use in millions of pounds in the US in 2012. It has increased from 25 million pounds since 1996 (when GM crops started) to 300 million pounds in 2012.<sup>435</sup> This is the distribution of estimated agricultural use of the systemic neonicotinoids clothianidin,<sup>436</sup> imidacloprid<sup>437</sup> and thiamethoxam<sup>438</sup> in millions of pounds. In 2012 it was a total of 5.8 million pounds. There are usage graphs for 456 other agrochemicals used by US farmers. But only in 39 are the levels being monitored. These 39 do not include glyphosate or the neonicotinoid insecticides. The UK HSE website for pesticides<sup>439</sup> and the Defra statistics for usage,<sup>440</sup> show how many new chemicals are being registered each year, approved by the Advisory Committee on Pesticides and being applied to UK farmland. Defra has not constructed maps for applications of imidacloprid (Bayer CropScience), thiamethoxam (Syngenta) or clothianidin (Bayer CropScience) on farmland, but the statistics show the use has increased in a similar manner to that in the US. From 2009 and 2010 the usage of thiamethoxam on crops increased ten-fold. The Fera statistics have been tabulated and show a steady increase from 1988 to 2014 in amounts of pesticides and numbers of times crops have been treated (see page 42).

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435

[https://water.usgs.gov/nawqa/pnsp/usage/maps/show\\_map.php?year=2012&map=GLYPHOSATE&hilo=L&disp=Glyphosate](https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2012&map=GLYPHOSATE&hilo=L&disp=Glyphosate)

436

[http://water.usgs.gov/nawqa/pnsp/usage/maps/show\\_map.php?year=2012&map=CLOTHIANIDIN&hilo=L&disp=Clothianidin](http://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2012&map=CLOTHIANIDIN&hilo=L&disp=Clothianidin)

437

[https://water.usgs.gov/nawqa/pnsp/usage/maps/show\\_map.php?year=2012&map=IMIDACLOPRID&hilo=L&disp=Imidacloprid](https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2012&map=IMIDACLOPRID&hilo=L&disp=Imidacloprid)

438

[https://water.usgs.gov/nawqa/pnsp/usage/maps/show\\_map.php?year=2012&map=THIAMETHOXAM&hilo=L&disp=Thiamethoxam](https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2012&map=THIAMETHOXAM&hilo=L&disp=Thiamethoxam)

<sup>439</sup> <https://secure.pesticides.gov.uk/pestreg/ProdSearch.asp>

<sup>440</sup> <http://pusstats.csl.gov.uk/>

## **Monsanto and the US Environmental Protection Agency: how the EPA protected Monsanto and other chemical corporations**

**On December 3<sup>rd</sup> 2015 it was announced that Monsanto, the US-based transnational corporation, is to be put on trial in the International Criminal Court in The Hague for ecocide<sup>441</sup>**

PARIS – The Organic Consumers Association (OCA), IFOAM International Organics, Navdanya, Regeneration International (RI), and Millions Against Monsanto, joined by dozens of global food, farming and environmental justice groups announced today that they will put Monsanto, a US-based transnational corporation, on trial for crimes against nature and humanity, and ecocide, in The Hague, Netherlands, next year on World Food Day, October 16, 2016. This International Criminal Court, established in 2002 in The Hague, has determined that prosecuting ecocide as a criminal offense is the only way to guarantee the rights of humans to a healthy environment and the right of nature to be protected.

*The tribunal's website says: "According to its critics, Monsanto is able to ignore the human and environmental damage caused by its products and maintain its devastating activities through a strategy of systemic concealment: by lobbying regulatory agencies and governments, by resorting to lying and corruption, by financing fraudulent scientific studies, by pressuring independent scientists, by manipulating the press and media, etc. The history of Monsanto would thereby constitute a textbook case of impunity, benefiting transnational corporations and their executives, whose activities contribute to climate and biosphere crises and threaten the safety of the planet."*

*In addition to Monsanto, the tribunal intends to mount a "best case" to denounce: "all multinational companies which are driven by the profit motive and thereby threaten human health and the safety of the planet".*

### **Monsanto claimed that glyphosate & GM crops have a positive effect on wildlife and biodiversity**

Despite having been convicted of false claims in 1996, Monsanto repeated similar but worse lies in a document published 2010 entitled: "The agronomic benefits of glyphosate in Europe: Benefits per market use February 2010."<sup>442</sup> It stated that glyphosate has an "excellent safety profile to operators, the public and the environment." On page 4 Monsanto makes a further claim about the use of glyphosate to increase wildlife and biodiversity: "Use of glyphosate instead of mechanical weed control techniques on non-cropped/amenity land preserves wildlife like small mammals and birds. Adoption of Conservation agriculture encourages earthworms and other invertebrates as well as birds. Judicious use of glyphosate to control excessive plant growth and invasive weeds on or around waterways and lakes encourages wildfowl and much other wildlife." An additional claim was made for GM Crops (p. 4): "Use of glyphosate tolerant crops allows later control of weeds providing early food sources for many invertebrates and birds and thus increases animal numbers."

### **Monsanto: A Corrupt History of Inhumane Abuse: New York Times is at boiling point about GMOs and Dan Quayle and Michael Taylor's part in the conspiracy**

In Combatting Monsanto<sup>443</sup> the largest collection of evidence about the human abuses of the Global Corporations has been compiled. Pages 2-5 describe the top 10 corporations' market share of the global seed market. Twenty years of GMO policy that keeps Americans in the Dark about their

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<sup>441</sup> <http://www.monsanto-tribunal.org/>

<sup>442</sup> <http://www.monsanto.com/products/Documents/glyphosate-background-materials/Agronomic%20benefits%20of%20glyphosate%20in%20Europe.pdf>

<sup>443</sup> <http://www.viacampesina.org/downloads/pdf/en/Monsanto-Publication-EN-Final-Version.pdf>

food.<sup>444</sup> This front-page story from the New York Times describes the part that Dan Quayle<sup>445</sup> and Michael Taylor<sup>446</sup> played in the development of GMOs.

Michael Delaney of the FDA US Food and Drug Administration<sup>447</sup> who knew about the toxic effects of aspartame said: *So What?!! We have to Depopulate!!*"

Monsanto's abuse of illegal workers in slave-like conditions in Argentina is revealed.<sup>448</sup> Illegal slave workers forced to work in the cornfields for 14 hours a day and buying food at highly inflated prices. Monsanto has been running these slave rings for an 'unknown' number of years. The political corruption of Monsanto has been documented in this admirable article.<sup>449</sup> Since 1991, many Monsanto employees have rotated in and out of influential positions in the US Government: Margaret Miller, Clarence Thomas, Michael Taylor, Rufus Yerxa, Michael Kantor, Carol Tucker Foreman, Anne Veneman, Donald Rumsfeld<sup>450</sup> (former CEO of Searle, a pharmaceutical company, later to be acquired by Monsanto. Donald Rumsfeld was infamous as the one who persuaded the FDA to register the poison aspartame and was the US Secretary of Defense during 9/11 and the war on terror), Linda Fisher, George Poste.

With regard to GM crops, Obama has been little better: he appointed Michael Taylor to the FDA, Roger Beachy as head of USDA and Tom Vilsack as the Commissioner of USDA. He has (as yet) failed to implement GM labelling of foods, and under the Obama administration the USDA approved GMO alfalfa and sugar beets. However, Mitt Romney would have been far worse: *"The presidential candidate helped Monsanto transform from teetering, scandal-plagued chemical firm into shiny new ag-biotech giant."*<sup>451</sup>

The GMO nightmare began with Dan Quayle<sup>452</sup> who said that GMO foods did not have to be labelled or safety tested. S.D Wells reports: *"The one man who may be responsible for more food related illnesses and deaths than anyone in history, Michael R. Taylor, has just (Feb 2012) been promoted from US Food Safety Czar to Senior Advisor to the Commissioner of the FDA, a position which would enable the giant biotech company Monsanto to silently and legally feed cancer causing vegetables to every living person who is not 100% strictly organic." Michael Taylor is the epitome of everything Monsanto represents. Taylor is like a vehicle for Monsanto's patenting of seeds and global domination of farming. He implements the government's "favorable" agricultural biotech policies because it's much more of a financially sure shot to use RoundUp in food than to farm organically and ethically."*

#### The 4-headed Administration of thieves

Wells writes: *"This marks the pinnacle so far of a long ascent of evil profiteering and corporate executives making it to the top. It's like one big 4-headed company of thieves: The FDA, EPA, Supreme Court, and Monsanto's Board of Executives, and these organization hoppers include Clarence Thomas, Michael R. Taylor, Ann Veneman, and Linda Fisher, who conveniently bounce back and forth between positions at Monsanto and the EPA.*

*Monsanto has the money to win in court and/or settle with anyone who opposes them and money to sweeten various congressmen."*

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<sup>444</sup> [http://www.huffingtonpost.com/dave-murphy/dan-quayle-and-michael-taylor-b\\_1551732.html?view=print&comm\\_ref=false](http://www.huffingtonpost.com/dave-murphy/dan-quayle-and-michael-taylor-b_1551732.html?view=print&comm_ref=false)

<sup>445</sup> [http://www.naturalnews.com/034847\\_Michael\\_Taylor\\_Monsanto\\_FDA.html](http://www.naturalnews.com/034847_Michael_Taylor_Monsanto_FDA.html)

<sup>446</sup> [http://www.naturalnews.com/034847\\_Michael\\_Taylor\\_Monsanto\\_FDA.html](http://www.naturalnews.com/034847_Michael_Taylor_Monsanto_FDA.html)

<sup>447</sup> [http://www.mpwhi.com/fda\\_says\\_so\\_what.htm](http://www.mpwhi.com/fda_says_so_what.htm)

<sup>448</sup> <http://naturalsociety.com/monsanto-abusing-illegal-workers-in-slave-like-conditions/>

<sup>449</sup> <http://www.seattleorganicrestaurants.com/vegan-whole-food/political-corruption-Monsanto.php>

<sup>450</sup> [http://www.huffingtonpost.com/robbie-gennet/donald-rumsfeld-and-the-s\\_b\\_805581.html](http://www.huffingtonpost.com/robbie-gennet/donald-rumsfeld-and-the-s_b_805581.html)

<sup>451</sup> <http://www.motherjones.com/tom-philpott/2012/09/romney-monsanto-bain>

<sup>452</sup> [http://www.naturalnews.com/034847\\_Michael\\_Taylor\\_Monsanto\\_FDA.html](http://www.naturalnews.com/034847_Michael_Taylor_Monsanto_FDA.html)



### **Monsanto employed Total Intelligence Solutions to protect the Corporation's name<sup>453</sup>**

Spooky Business: Corporate Espionage Against Nonprofit Organizations Published on 20/11/2013.

Page 33 gives information about the biotech giant, Monsanto:

The following information came from Jeremy Scahill reported in the *Nation* magazine that the security firm "Blackwater, through Total Intelligence, sought to become the 'intel arm' of Monsanto, offering to provide operatives to infiltrate activist groups organizing against the multinational biotech firm."<sup>454</sup> In recent years, Blackwater has twice been re-named: first as XE Services and again as Academi.<sup>455</sup> According to documents he obtained, Scahill reported in the *Nation* that: Through Total Intelligence and the Terrorism Research Center, Blackwater also did business with a range of multinational corporations. According to internal Total Intelligence communications, biotech giant Monsanto—the world's largest supplier of genetically modified seeds—hired the firm in 2008–09. The relationship between the two companies appears to have been solidified in January 2008 when Total Intelligence chair Cofer Black traveled to Zurich to meet with Kevin Wilson, Monsanto's security manager for global issues. After the meeting in Zurich, Black sent an e-mail to other Blackwater executives, including to [Blackwater owner and founder Erik] Prince and [coordinator of Blackwater's CIA business Enrique 'Ric' Prado at their Blackwater e-mail addresses. Black wrote that Wilson "understands that we can span collection from internet, to reach out, to boots on the ground on legit basis protecting the Monsanto [brand] name.... Ahead of the curve info and insight/heads up is what he is looking for." Black added that Total Intelligence "would develop into acting as intel arm of Monsanto." Black also noted that Monsanto was concerned about animal rights activists and that they discussed how Blackwater "could have our person(s) actually join [activist] group(s) legally." Black wrote that initial payments to Total Intelligence would be paid out of Monsanto's "generous protection budget" but would eventually become a line item in the company's annual budget. He estimated the potential payments to Total Intelligence at between \$100,000 and \$500,000. According to documents, Monsanto paid Total Intelligence \$127,000 in 2008 and \$105,000 in 2009."

The techniques used in corporate espionage against non-profits are outlined on page 47.

*"Computer hacking. There are many different techniques available to corporate spies who wish to hack a computer or a computer network. Some of the more obvious ones include vulnerability scanning (checking computers and networks for known security flaws), persistent software scanning implants and creation of custom malware, password cracking, phishing (obtaining passwords by posing as a trustworthy entity), Trojan horses (establishing a back door into a computer or network that can be exploited later and key loggers (recording of all keystrokes on a computer for later retrieval)."*

Further discussion about the Report by the Center for Corporate Policy Spooky Business by Dr Nafeez Ahmed (Executive Director of the Institute for Policy Research and Development)

The War on Democracy: How corporations and spy agencies use 'security' to defend profiteering and crush activism.<sup>456</sup>

### **Was this the sort of event that Total Intelligence Solutions would be required to organise?**

On 7<sup>th</sup> August 2010 Professor Andrés Carrasco, lead embryologist at the University, Buenos Aires Medical School and the Argentine National Research Council, came to give a talk about his research to community activists and residents gathered in La Leonesa. His research showed that glyphosate, an agrochemical used on genetically modified soy and rice in Argentina, causes birth defects in animal embryos at levels far below those frequently used in agricultural spraying. A delegation of

<sup>453</sup> <http://www.corporatepolicy.org/spookybusiness.pdf>

<sup>454</sup> Jeremy Scahill, "Blackwater's Black Ops." *The Nation*, September 15, 2010.

<sup>455</sup> Academi has received \$2.1 billion in federal contracts, including \$1.5 billion with the State Department and \$607 million with the Defense Department, according to [USASpending.gov](http://USASpending.gov) (accessed October 28, 2013).

<sup>456</sup> <http://www.theguardian.com/environment/earth-insight/2013/nov/28/war-on-democracy-corporations-spy-profit-activism>

public officials and residents from the nearby community of Resistencia also came to La Leonesa to hear the talk.<sup>457</sup> *“But it never took place. As the delegation walked towards the school where the talk was to be held, it was attacked by a violent mob of approximately 100 people. Three people were seriously injured. Carrasco and a colleague shut themselves in a car and were surrounded by people beating the vehicle for two hours. Witnesses believe that a local rice producer and officials had organised the attack to protect agribusiness interests. As the police seemed reluctant to intervene, Amnesty International subsequently called for an investigation.”*

The Amnesty International investigation<sup>458</sup> established that: *“One person has since suffered from lower body paralysis after being hit on his spine, and another is undergoing neurological examinations after receiving blows to the head. The former provincial Sub-Secretary of Human Rights, Marcelo Salgado, was struck in the face and left unconscious. Dr Carrasco and his colleague shut themselves in a car, and were surrounded by people making violent threats and beating the car for two hours. Members of the community were injured and a journalist's camera equipment was damaged.*

*Members of the community who witnessed the incident have implicated local officials in the attack, as well as a local rice-producer and his workers and security guards. They strongly believe that the violence was promoted by them, and motivated by the powerful economic interests behind local agro-industry. Despite calls to local authorities asking for help, the police were slow to respond and failed to send sufficient reinforcements to stop the violence.”*

### **Supreme Court Judges in the US find in favour of Monsanto**

The US Government and US Monsanto have control of judgements by the Supreme Court.<sup>459</sup> *“WASHINGTON (Reuters Report 13 January 2014) - The U.S. Supreme Court upheld Monsanto Corporation's biotech seed patents on Monday, dealing a blow to a group of organic farmers and other activists trying to stop the biotech company from suing farmers if their fields contain a few plants containing the company's genetically modified traits.”* Supreme Court Justice, Clarence Thomas, served as a lawyer for Monsanto for several years.<sup>460</sup>

### **Monsanto's pocket is deep and its reach and influence extends far and wide: an Australian organic farmer sued his neighbour (effectively Monsanto) and finally lost<sup>461</sup>**

This was to be a landmark world's first trial against Monsanto that began on February 10 2014. Steve Marsh, an organic farmer from Kojonup, south of Perth, lost organic certification for most of his farm when pollen from GM canola (Oil Seed Rape) from the neighbouring farm blew over and contaminated his crop in 2010. He sued his neighbour<sup>462</sup> in the Supreme Court of WA. However, Marsh lost the lawsuit in a May 2014 [ruling from the Supreme Court of Western Australia](#) and was ordered instead to pay court costs of about \$804,000. Disclosure was asked for and it was found that Monsanto had paid some of Baxter's costs: *"Monsanto Australia contributed to the Baxters' legal costs to ensure they could defend themselves in court."* Marsh appealed the decision to the West Australian court of appeal but in September, the court instead ruled in favor of Baxter. Steve Marsh lost his appeal on 12/02/2016 and can go no further.<sup>463</sup>

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<sup>457</sup>

[http://www.theecologist.org/blogs\\_and\\_comments/commentators/other\\_comments/686959/revealed\\_the\\_glyphosate\\_research\\_the\\_gm\\_soy\\_lobby\\_doesnt\\_want\\_you\\_to\\_read.html](http://www.theecologist.org/blogs_and_comments/commentators/other_comments/686959/revealed_the_glyphosate_research_the_gm_soy_lobby_doesnt_want_you_to_read.html)

<sup>458</sup> <http://www.amnesty.org/en/library/asset/AMR13/005/2010/en/303e9ee6-9138-405f-97fc-ed58965b76d0/amr130052010en.html>

<sup>459</sup> <http://www.scientificamerican.com/article/monsanto-critics-denied-us-supreme/>

<sup>460</sup> <http://www.biography.com/people/clarence-thomas-9505658#supreme-court-justice>

<sup>461</sup> <http://sustainablepulse.com/2013/12/08/australian-farmers-gain-mass-consumer-support-gmo-pollution/#.UqIkFPRdU64>

<sup>462</sup> Monsanto has the money to win in court and/or settle with anyone who opposes them.

[http://www.naturalnews.com/034847\\_Michael\\_Taylor\\_Monsanto\\_FDA.html](http://www.naturalnews.com/034847_Michael_Taylor_Monsanto_FDA.html)

<sup>463</sup> <http://www.abc.net.au/news/2016-02-12/gm-contamination-farmer-loses-bid-for-high-court-review/7163506>

### **An entire department in Monsanto is devoted to discrediting science against GMOs<sup>464</sup>**

*"For the first time, a Monsanto employee [admits that](#) there is an entire department within the corporation with the simple task of 'discrediting' and 'debunking' scientists who speak out against GMOs. The Discredit Bureau will not be found on their official website."*

### **United States of America Environmental Protection Agency serving industry**

*"[Poison Spring, the Secret History of the \(US\) EPA](#) documents, in devastating detail, the corruption and misuse of science and public trust that has turned the (US) EPA from a watchdog into a "polluters' protection agency".<sup>465</sup> In its half-century of existence, the agency has repeatedly reinforced the chemical-industrial complex by endorsing deadly chemicals, often against the continued advice of its own scientists. It has botched field investigations, turned a blind eye to toxic disasters, and unblinkingly swallowed the self-serving claims of industry." *Rarely has our government allowed and encouraged the actions of the chemical industry so openly as it did during Reagan's tenure in Office. He opened the door wide to corporate influence throughout the government, and especially at the Environmental Protection Agency, which began a precipitous functional decline. Reagan gave corporations the reins of power at the agency and they immediately began tearing the EPA apart.* One of the authors, E.G.Vallianatos, had worked for the US EPA for 25 years.*

### **Failure to regulate data fraud comes home to roost Carol Van Strum 9 April 2015**

Extracts:<sup>466</sup> Within the first decade of the EPA's existence, it became obvious that nearly all the "safety" tests supporting pesticide registrations were faked, with either fraudulent or non-existent data. The massive lab fraud uncovered at Industrial Bio-Test Laboratories (IBT) revealed that 99 percent of long-term studies (for cancer, birth defects, mutagenicity, reproductive damage etc.) supporting some 483 pesticide registrations were invalid. For 25 years, in what US Food and Drug Administration (FDA) officials called "*the most massive scientific fraud ever committed in the United States, and perhaps the world,*" all major chemical and pharmaceutical companies had paid IBT to produce the test data they needed to register their products. A laboratory that IBT scientists called "*The Swamp,*" with a faulty water system that drenched the entire room, cages, rodents and all, in a continuous spray of water, drowning the test animals in droves. "*Dead rats and mice, technicians later told federal investigators, decomposed so rapidly in the Swamp that their bodies oozed through wire cage bottoms and lay in purple puddles on the dropping trays...*" read on...

### **US EPA allows conditional registration: 'Conditional' means that they are allowed to sell it on condition that they fulfil all the data gaps within a year: Conditional registration of clothianidin**

On May 30, 2003, Daniel C Kenny of the US EPA Registration Division granted conditional registration for *clothianidin* to be used for seed treatment on corn and canola (oil seed rape) to Bayer Corporation.<sup>467</sup> In the 19-page document, EPA scientists (as opposed to the Registration Division) had assessed the risks as: "*Clothianidin is highly toxic to honey bees on an acute contact basis. It has the potential for toxic chronic exposure to honey bees, as well as other non-target pollinators, through the translocation of clothianidin residues in nectar and pollen. In honey bees, the effects of this toxic chronic exposure may include lethal and/or sub-lethal effects in the larvae and reproductive effects in the queen. The fate and disposition of clothianidin in the environment suggest a compound that is a systemic insecticide that is persistent and mobile, stable to hydrolysis, and has potential to leach into ground water, as well as run-off to surface waters. There is evidence of effects on the rat immune system and juvenile rats appear to be more susceptible to these effects.*"

<sup>464</sup> <http://naturalsociety.com/monsanto-employee-admits-an-entire-department-exists-to-discredit-scientists/>

<sup>465</sup> <http://www.theecologist.org/reviews/2767951/poison-spring-the-secret-history-of-the-epa.html>

<sup>466</sup> <http://www.truth-out.org/news/item/30097-failure-to-regulate-pesticide-data-fraud-comes-home-to-roost>

<sup>467</sup> <http://www.epa.gov/opprd001/factsheets/clothianidin.pdf>

Summary of Data Gaps. Page 18. There were gaps in Toxicology; Residue Chemistry; Environmental Fate Data and Ecological Effects Data. These included: Additional studies on *Developmental Immunotoxicity and Mutagenicity. Data on aerobic aquatic metabolism and a Seed leaching study. Whole sediment acute toxicity to freshwater invertebrates. Field test for pollinators.*

**A leaked document from the US Environmental Protection Agency (EPA) Environmental Risk Branch provided independent confirmation of the devastating effects on biodiversity that Dr Tennekes had described with imidacloprid, but with another neonicotinoid, *Clothianidin*.**<sup>468</sup>

To: Kable Davis, Risk Manager Reviewer, Venus Eagle, Risk Manager, Meredith Laws, Branch Chief, Insecticide-Rodenticide Branch Registration. November 2nd 2010.

Memo: *Clothianidin* Registration of Prosper T400 seed treatment on Mustard seed and Poncho/Votivo seed treatment on cotton

From: Joseph DeCant, Ecologist, Michael Barrett, Chemist, Environmental Risk Branch V, Environmental Fate and Effects Division

Through: Mah T Shamim, Branch Chief, Environmental Risk Branch V

*(Excerpts from the 101-page attached document, which can be read in full)*. Pages 1-5 is a summary sent in the form of a memo on November 2nd 2010.

The memo summarizes the Environmental Fate and Effects Division screening level Environmental Risk Assessment for *clothianidin*. The Registrant, Bayer CropScience is submitting a request for registration of *clothianidin* to be used as a seed treatment on cotton and mustard seed...The major risk concerns are with aquatic free-swimming and benthic invertebrates, terrestrial invertebrates, birds and mammals...Major risk concern is to non-target insects (that is honey bees). *Clothianidin* is a neonicotinoid insecticide that is both persistent and toxic. Acute toxicity studies to honey bees show that *clothianidin* is highly toxic on both a contact and an oral basis... Information from standard tests and field studies, as well as other incident reports involving other neonicotinoids, suggests the potential toxic risk to honey bees and other beneficial insects. An incident in Germany already illustrated the toxicity of *clothianidin* when allowed to drift off site from treated seed during planting... Poses an acute and chronic risk to small birds and mammals when *clothianidin* treated seeds are applied with no incorporation method... Acute risk to freshwater invertebrates: Acute lethal toxicity to benthic invertebrates also suggests this conclusion...

**No mention of human health or the environment in the US EPA Office of Pesticides Programs (OPP) Workshop: 'Streamline the Risk Assessment Process of Pesticides Registration'**

On December 13<sup>th</sup> 2010 the EPA OPP ran a Workgroup to 'Streamline the Risk Assessment Process of Pesticides Registration.'<sup>469</sup> Robert Schultz won the OPP competition by designing an e-dossier to make it easier and faster for the registrants. The benefits were said to be "*reduced costs to the EPA associated with primary reviews and quicker processing.*" There were 67 (updated to 77) slides without a mention of either human health or the environment. Slide 35 showed that: "*since 2002 no pesticide products had been suspended by the EPA.*" At that time Administrator Lisa Jackson's mission statement on the US EPA website was: "***We have greater opportunity to protect human health and the environment than before***".

**A new paper reveals Monsanto's secret studies: Monsanto knew that glyphosate caused cancer in animals but manipulated the data**<sup>470</sup>

Monsanto has known since the 1970s that glyphosate causes cancer, according to a new paper by researchers Anthony Samsel and Stephanie Seneff. Samsel is the first independent researcher to examine Monsanto's sealed, secret toxicology studies on glyphosate. Samsel obtained the studies

<sup>468</sup> [http://www.panna.org/sites/default/files/Memo\\_Nov2010\\_Clothianidin.pdf](http://www.panna.org/sites/default/files/Memo_Nov2010_Clothianidin.pdf)

<sup>469</sup> <http://www.epa.gov/oppfead1/cb/ppdc/pria/2010/december/update-presenta.pdf>

<sup>470</sup>

[https://www.academia.edu/17751562/Glyphosate\\_pathways\\_to\\_modern\\_diseases\\_IV\\_cancer\\_and\\_related\\_pathologies](https://www.academia.edu/17751562/Glyphosate_pathways_to_modern_diseases_IV_cancer_and_related_pathologies)

through a request to his Senator. With Dr Stephanie Seneff of MIT, he reviewed Monsanto's data. Samsel and Seneff concluded that: "*significant evidence of tumours was found during these investigations*".

Extract: *Glyphosate has a large number of tumorigenic effects on biological systems, including direct damage to DNA in sensitive cells, disruption of glycine homeostasis, succinate dehydrogenase inhibition, chelation of manganese, modification to more carcinogenic molecules such as N-nitrosoglyphosate and glyoxylate, disruption of fructose metabolism, etc. Epidemiological evidence supports strong temporal correlations between glyphosate usage on crops and a multitude of cancers that are reaching epidemic proportions, including breast cancer, pancreatic cancer, kidney cancer, thyroid cancer, liver cancer, bladder cancer and myeloid leukaemia.*

### **In 1985 the US EPA classified glyphosate as a Group C carcinogen but changed to Group E in 1991<sup>471</sup>**

The original Panel comprised of members of the Toxicology Branch of the Hazard Evaluation Division that examined the carcinogenic potential of glyphosate. In a consensus review on March 4 1985 the Committee classified glyphosate as a Group C carcinogen. It was based on the incidence in rats/mice of **renal tumours, thyroid C-cell adenomas and carcinomas, pancreatic islet cell adenomas, hepatocellular adenomas and carcinomas** in males. However, in 1991 The Health Effects Division Carcinogenicity Peer Review Committee met on June 26 1991 to discuss and evaluate the weight of evidence on glyphosate with particular emphasis to its carcinogenic potential. In a review of the data the Committee concluded that glyphosate should be classified as Group E (evidence of non-carcinogenicity for humans). In order to cover themselves they declared: "*It should be emphasized, however, that the designation of an agent in Group E is based on the available evidence at the time of evaluation and should not be interpreted as a definitive conclusion that the agent will not be a carcinogen under any circumstances*"

There were signatures of the 11 members present, six members signed *in absentia* but three members refused to sign because they "did not concur." Presumably they knew that the change of classification of glyphosate from Group C to Group E was fraudulent.

## **Dr Don Huber has been warning about GM and Roundup® Ready Crops as a disastrous failed experiment**

### **Dr Don Huber Professor Emeritus of Plant Pathology at Purdue University**

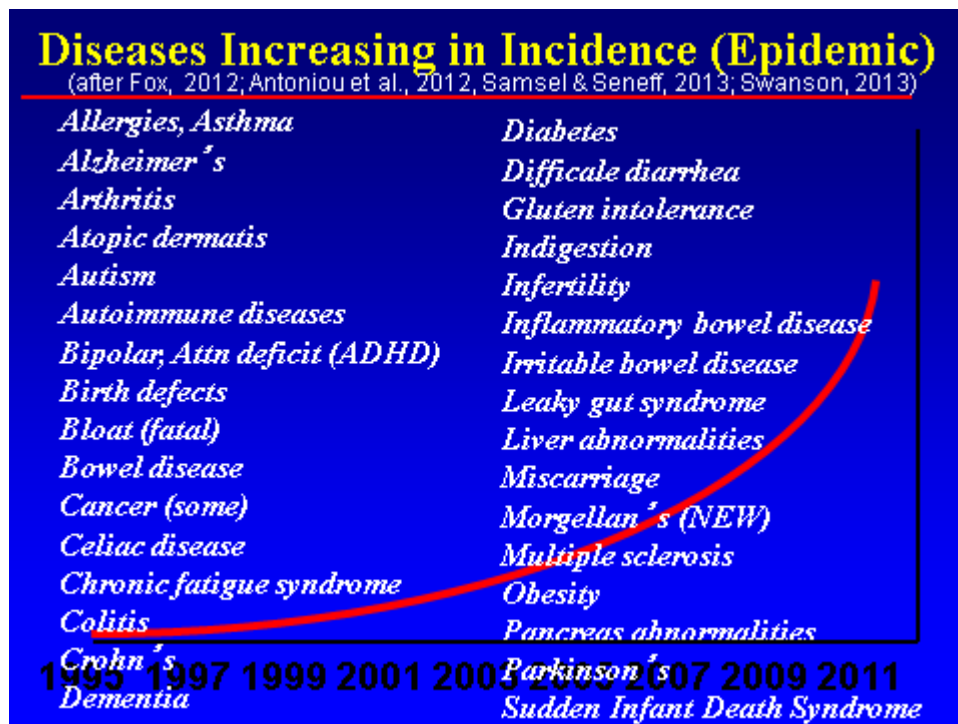
Dr Don Huber Professor Emeritus of Plant Pathology at Purdue University is a world expert on glyphosate and its actions. For many years he has been lecturing about glyphosate's dangers and writing to many officials in the US warning them of the hazards of glyphosate.

The All-Party Parliamentary Group (APPG) on Agroecology met in the Houses of Parliament in London on June 18, 2014 to discuss the harm caused by the world's most popular herbicide – Roundup®. In what was one of the most comprehensive meetings ever held in Europe on Glyphosate and Roundup®, experts from around the World gathered in London to share their expertise with the media, members of a number of UK political parties, NGO representatives and members of the general public. Experts had travelled from as far away as Russia, China and the U.S., to listen to the four speakers (Dr Don Huber US, Professor Malcolm Hooper, UK, Dr John Peterson Myers, Chief Scientist of Environmental Health Sciences, US and Dr Michael Antoniou, UK) give detailed presentations on how the unanswered questions surrounding the possible harm caused by Glyphosate and Roundup® should be approached. Here is a link to a Power Point lecture given by Dr Huber.<sup>472</sup> With his kind permission I have reproduced two of the slides on the next page.

<sup>471</sup> [http://www.epa.gov/opp00001/chem\\_search/cleared\\_reviews/csr\\_PC-103601\\_30-Oct-91\\_265.pdf](http://www.epa.gov/opp00001/chem_search/cleared_reviews/csr_PC-103601_30-Oct-91_265.pdf)

<sup>472</sup> [Dr. Don M. Huber – Professor Emeritus of Plant Pathology at Purdue University](#)

The China Development Strategy Research Society Committee of Cultural Strategy also organized a unique event with world experts in Beijing China, during the last week of July 2014 to discuss the global harm caused by GMOs and glyphosate-based herbicides.<sup>473</sup> Neither of these meetings appeared to attract the attention of the British Media!



<sup>473</sup> <http://sustainablepulse.com/2014/08/09/chinese-international-experts-slam-gmos-glyphosate-beijing-conference/#.VsIHftCG7ww>

**Dr Huber had written to the US Secretary of Agriculture Hon Tom Vilsack in 2011, in confidence first, about a pathogen new to science**

January 17<sup>th</sup> 2011: Extracts: *A team of senior plant and animal scientists have recently brought to my attention the discovery of an electron microscopic pathogen that appears to significantly impact the health of plants, animals, and probably human beings. Based on a review of the data, it is widespread, very serious, and is in much higher concentrations in Roundup Ready (RR) soybeans and corn - suggesting a link with the RR gene or more likely the presence of Roundup. This organism appears NEW to science!*

*... We are informing the USDA of our findings at this early stage, specifically due to your pending decision regarding approval of RR alfalfa. Naturally, if either the RR gene or Roundup itself is a promoter or co-factor of this pathogen, then such approval could be a calamity. Based on the current evidence, the only reasonable action at this time would be to delay deregulation at least until sufficient data has exonerated the RR system, if it does.*

*...Laboratory tests have confirmed the presence of this organism in a wide variety of livestock that have experienced spontaneous abortions and infertility. Preliminary results from on going research have also been able to reproduce abortions in a clinical setting... It is found in high concentrations in Roundup Ready soybean meal and corn, distiller's meal, fermentation feed products, pig stomach contents, and pig and cattle placentas...*

*...This previously unknown organism is only visible under an electron microscope (36,000X) with an approximate size range equal to a medium size virus. It is able to reproduce and appears to be a micro-fungal-like organism. If so, it would be the first such micro-fungus ever identified. There is strong evidence that this infectious agent promotes diseases of both plants and mammals, which is very rare.*

*... The organism is prolific in plants infected with two pervasive diseases that are driving down yields and farmer income—sudden death syndrome (SDS) in soy, and Goss' wilt in corn. The pathogen is also found in the fungal causative agent of SDS (*Fusarium solani fsp glycines*).*

*...The pathogen may explain the escalating frequency of infertility and spontaneous abortions over the past few years in US cattle, dairy, swine, and horse operations. These include recent reports of infertility rates in dairy heifers of over 20%, and spontaneous abortions in cattle as high as 45%. For example, 450 of 1,000 pregnant heifers fed wheatlege experienced spontaneous abortions... Over the same period, another 1,000 heifers from the same herd that were raised on hay had no abortions. High concentrations of the pathogen were confirmed on the wheatlege, which likely had been under weed management using glyphosate...*

*For the past 40 years, I have been a scientist in the professional and military agencies that evaluate and prepare for natural and manmade biological threats, including germ warfare and disease outbreaks. Based on this experience, I believe the threat we are facing from this pathogen is unique and of a high-risk status. In layman's terms, it should be treated as an emergency."*

The letter was leaked to the press; lobbyists 'put it about that it was a fake'. Dr Huber's letter of explanation (and confirmation) on 25<sup>nd</sup> March 2011 and his original letter can be seen here together with illustrations of Goss's wilt in a field of GM RR Maize, next to a green field of non-GMO maize.<sup>474</sup>

It did not deter Vilsack from approving GM Roundup®-Ready alfalfa. **N.B. Dr Huber says that his letter was sent to the UK and EU officials at their request.**<sup>475</sup>

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<sup>474</sup> <http://www.greenpasture.org/documentFiles/5.pdf>

<sup>475</sup> <http://www.cbsnews.com/news/mystery-science-more-details-on-the-strange-organism-that-could-destroy-monsanto/>

## Vilsack's relationship with the Biotech Industry

Vilsack had lobbied for Monsanto and had passed laws to their advantage.<sup>476</sup> The Biotechnology Industry Organization, named Vilsack Governor of the Year. He was also the founder and former chair of the Governor's Biotechnology Partnership.

## Will Monsanto win and humans and the environment finally be destroyed?

**Monsanto Co filed a lawsuit in January 2016 against California's Office of Environmental Health Hazard Assessment<sup>477</sup> in an attempt to block the agency's stated intent to list glyphosate as a possible human carcinogen<sup>478</sup>**

Lawyer Dr Graciela Gomez, who has sought to protect the rural residents of Argentina from cancer, birth defects, and other reproductive harm from glyphosate, sent me this grave news on 23/01/2015.

Monsanto wrote: "The application seeks to add the herbicide to the list of carcinogens under Proposition 65, which requires the state to publish a list of chemicals known to cause cancer, birth defects or other reproductive harm. The announcement came on 4 September 2015. If glyphosate is added to the list, Monsanto would be required to provide a warning on the labels to consumers that the chemical is a recognized carcinogen. Monsanto says this is a violation of their First Amendment rights and, according to the complaint, "would cause irreparable damage to Monsanto and the public and negatively affect the reputation of Monsanto for making safe and reliable herbicides would be potentially a loss of Sales and force the company to spend large sums of money to re-label their products."...

## The sixth mass extinction and chemicals in the environment: our environmental deficit is now beyond nature's ability to regenerate<sup>479</sup>

The following paper about the future of the planet appeared in June 2015: Accelerated modern human-induced species losses: Entering the sixth mass extinction.<sup>480</sup> The six authors calculated the average rate of vertebrate losses over the last century and compared it with the background rate of losses. They estimated it to be up to 114 times the background rate and asserted that this rate of losses of biodiversity indicated that a sixth mass extinction is already under way. The authors described themselves variously as ecologists, field biologists, paleobiologists or population biologists, but all held two beliefs in common: that the conservation of natural ecosystems is essential to human health; but that the accelerated losses of biodiversity are a result of human activity.

## Sustaining Life: How Human Health Depends on Biodiversity<sup>481</sup>

Dr Eric Chivian founded the Center for Health and the Global Environment at Harvard Medical School in 1996: "To help people understand that our health, and that of our children, depends on the health of the environment and that we must do everything we can to protect it"

Eric Chivian and Aaron Bernstein co-edited the above book, which includes contributions from more than 100 leading biodiversity and health scientists. It was published in June 2008 by Oxford University Press and was co-sponsored by the United Nations Development Programme, the United

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<sup>476</sup> <https://www.organicconsumers.org/news/six-reasons-why-obama-appointing-monsantos-buddy-former-iowa-governor-vilsack-usda-head-would>

<sup>477</sup> <http://www.monsanto.com/files/documents/monvoehha.pdf>

<sup>478</sup> <http://news.monsanto.com/news/monsanto-takes-legal-action-prevent-flawed-listing-glyphosate-under-californias-prop-65>

<sup>479</sup> <http://www.amsi.ge/jbpc/31515/15-3-abs-5.htm>

<sup>480</sup> <http://advances.sciencemag.org/content/advances/1/5/e1400253.full.pdf>

<sup>481</sup> <https://global.oup.com/academic/product/sustaining-life-9780195175097?cc=gb&lang=en&>



Nations Environment Programme, the Secretariat of the Convention on Biological Diversity and the World Conservation Union.

### **Natural history is critically important for learning about organisms**

Tewksbury *et al.* in their paper Natural History's Place in Science and Society<sup>482</sup> the authors argue that natural history is of critical importance for learning about organisms, their links to communities and ecosystems and their biotic and abiotic interactions. Examples are provided of the vital importance of knowledge of natural history to many disciplines: human health, food security, conservation, management and recreation. The authors give instances of the costs of mistakes of not having that knowledge.

### **Natural decline: Few biology degrees still feature natural history. Is the naturalist a species in crisis?**

An editorial in *Nature* in 2014<sup>483</sup> discussed the requirements to be awarded an undergraduate biology degree. Today it requires no courses in natural history, whereas in the US in 1950 it required two or more courses. Molecular biology, genetics, experimental biology, mathematical modelling, population biology and statistics have taken over. However, many of the fields rely on data, specimens and collections from natural history. The editors recommend that a biology diploma should not be awarded without a course in identifying organisms, learning the basic techniques for observing and recording data.

### **Humans need invertebrates; without them they cannot survive**

Prof E.O. Wilson the eminent field entomologist from Harvard, who in his book *Naturalist*,<sup>484</sup> has documented massive global declines of ant colonies at the hand of man, said: *"The one process now going on that will take millions of years to correct is the loss of genetic and species diversity by the destruction of natural habitats. This is the folly our descendants are least likely to forgive us."*

### **The human race has learned nothing since 'Silent Spring'**

The global pesticides industry has been allowed to dominate the regulatory agencies and destroy human health and biodiversity. They have created chemicals of mass destruction that can no longer be controlled. Furthermore, successive British governments have allowed themselves to be persuaded that only a chemical-based agricultural system can feed the world. Fifty three years ago Rachel Carson's description of systemic pesticides was correct; nothing has changed apart from the fact that the industry has devised more powerful and persistent weapons. Rachel Carson wrote: *"The world of systemic insecticides is a weird world, surpassing the imaginings of the brothers Grimm. It is a world where the enchanted forest of the fairy tales has become a poisonous forest. It is a world where a flea bites a dog and dies...where a bee may carry poisonous nectar back to its hive and presently produce poisonous honey"*.

### **Cancers that were once only found in farming communities are starting to affect people in towns**

Old people are dying from old age. However, many of the middle and younger generations are not reaching their "three-score-years-and-ten" because they are dying of cancers and other diseases as a result of exposure to biocidal chemicals.

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<sup>482</sup> [https://www.academia.edu/6565695/Natural\\_historys\\_place\\_in\\_science\\_and\\_society](https://www.academia.edu/6565695/Natural_historys_place_in_science_and_society)

<sup>483</sup> <http://www.nature.com/news/natural-decline-1.14966>

<sup>484</sup> Wilson, E.O. *Naturalist: New Edition for a New Generation*. Washington, DC: Island Press (2006).

### **Monsanto CEO Hugh Grant (CEO of the Year 2010)**

Grant told Bloomberg that genetically modified foods are good for poor people who can't afford organic.<sup>485</sup> He said: "*Opponents of GM who want to block genetically modified foods are guilty of 'elitism' that's fanned by social media and fail to consider the needs of the rest of the world.*"<sup>486</sup>

### **Will the global élite survive the contamination of the environment with pesticides?**

The global élite may be able to survive by eating organic food, but not the pollution of water, soil and air by genotoxic and teratogenic herbicides and insecticides. The chemical industries from around the world have created a toxic environment from which none can escape. The devastating effects of these silent killers do not distinguish between farmers or city dwellers; the wealthy or the poor; between media Moguls or their reporters; Monsanto, Bayer or Syngenta Executives; Philanthropists, Prime Ministers or Presidents. Episodes of extreme weather and severe flooding caused by climate change merely spread the chemicals further.

Rosemary Mason

16/02/2016

Quoted by Argentinian Lawyer Graciela Gomez:

**"*Quien sabe que se comete un crimen y no lo denuncia es un CÓMPLICE*"** (José Martí).  
(Whosoever knows that a crime was committed and denounces it not is an ACCOMPLICE)

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<sup>485</sup> <http://2paragraphs.com/2013/05/monsanto-ceo-says-gmo-food-good-for-poor-people/>

<sup>486</sup> <http://www.bloomberg.com/news/2013-05-15/monsanto-sees-elitism-in-social-media-fanned-opposition.html>