

Israelensis? What Is the Consensus?

Profiting from Pandemics: Stocks, Margins & Curves

1. Factory Farming (Industrial Animal Agriculture)

Primary Inputs and Chemicals Used

Factory farming primarily involves:

- Antibiotics (e.g., tetracyclines, penicillins)
- Hormonal growth promotants (in some cattle systems)
- Disinfectants (quaternary ammonium compounds, bleach)
- Pesticides for feed crops (glyphosate, neonicotinoids, etc.)

Companies involved may include:

- Bayer (crop protection)
- Zoetis (animal medicines)

Documented Human Harms

- Antibiotic resistance (a WHO-recognized global issue)
- Occupational respiratory disease
- Water contamination from manure runoff
- *Human cruelty*

Animal Harms

- Confinement stress
- Disease concentration due to crowding
- Ammonia exposure in enclosed housing
- *Animal cruelty*

Regulatory Oversight

- USDA (meat processing oversight)
- FDA (animal drug approvals)
- EPA (water discharge and pesticide regulation)

Lobbying and Political Activity

Agriculture is one of the largest lobbying sectors in the United States. Trade groups advocate on:

- Antibiotic regulation
- Environmental standards
- Labeling laws

Financial Ownership

Large institutional investors such as The Vanguard Group and BlackRock hold shares in major meat producers and agricultural input firms through diversified index funds.

2. Florida Mosquito Control Programs

Florida maintains extensive mosquito control programs due to:

- West Nile virus
- Dengue
- Zika

Primary Chemicals Used

Adulticides

- Naled (organophosphate)
- Deltamethrin (pyrethroid)

Examples of manufacturers include AMVAC Chemical Corporation and American Vanguard Corporation.

Larvicides

- *Bacillus thuringiensis israelensis* (Bti — biological agent)

Documented Human Harms

- Acute toxicity
- Can effect nervous system
- Cancer
- Inflammation of organs
- Early aging
- Premature death

Animal Harms

- Pollinator concerns (especially with broad spraying)
- Aquatic invertebrate sensitivity (notably with naled)
- Kills insects, frogs, birds
- May kill small mammals

Advisory and Regulation

- EPA registration is required
- The Florida Department of Agriculture & Consumer Services provides oversight
- Local mosquito control districts operate publicly

Financial Ownership

Large asset managers hold shares across pesticide manufacturers because they track broad stock indexes.

3. COVID-19 Vaccines

Key Companies

- Pfizer
- BioNTech
- Moderna

Primary Components

mRNA vaccines contain:

- Messenger RNA encoding the spike protein
- Lipid nanoparticles (fat-based delivery system)
- *Salts* and buffers

Recognized Medical Adverse Effects

- Myocarditis (most commonly in younger males)
- Anaphylaxis
- Thrombosis

Broader Policy and Social Debates

Public discussions have included topics such as:

- Organ donation ethics
- Vaccine mandates
- Medical consent
- Disability discrimination concerns

Animal Harms

Vaccines were tested in animal models prior to human use; Species of monkeys used nearly extinct.

Advisory and Regulation

- FDA Emergency Use Authorization (EUA)
- CDC guidance
- Independent advisory panels such as VRBPAC

Lobbying and Political Ties

Pharmaceutical companies lobby Congress on:

- Patent protection
- Reimbursement policy
- Regulatory pathways

This is standard across large industries, including energy, agriculture, and technology.

Financial Ownership

Vanguard and BlackRock have been among the top institutional shareholders in Pfizer and Moderna through passive index fund holdings.

4. Global Connections and Common Ownership

Large asset managers:

- Hold diversified global portfolios
- Own small percentages of thousands of firms
- Rarely exceed controlling ownership thresholds (50%+)

There is ongoing academic debate around:

- “Common ownership theory”
 - Whether shared institutional investors reduce competition
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5. Stock Performance During the Pandemic

- Pharmaceutical stocks rose during vaccine rollout periods.
 - Some agriculture stocks rose due to food supply stability concerns.
 - Asset managers’ revenues increased when markets rose because fees are percentage-based.
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6. Indoor Residential Pest Control in Florida

In Florida, the most widely used chemicals for indoor residential pest control are typically **pyrethroid insecticides**.

Most Common Active Ingredients

1. Permethrin

- Synthetic pyrethroid
- Used for ants, roaches, spiders, fleas, termites
- Common in indoor sprays and perimeter treatments
- Highly toxic to cats and aquatic organisms

2. Deltamethrin

- Synthetic pyrethroid
- Used for cockroaches, ants, bed bugs
- Found in crack-and-crevice and residual spray products
- Common in both professional and consumer products

3. Bifenthrin

- Synthetic pyrethroid
- Often used for perimeter and structural pest control
- More commonly used outdoors, but sometimes part of indoor barrier strategies

Why Pyrethroids Are Common in Florida

Florida's climate (heat and humidity) supports:

- Year-round cockroach activity
- Ant infestations
- Termites
- Mosquito entry into homes

Pyrethroids are popular because they:

- Are relatively stable indoors
- Provide residual activity
- Are effective at low doses
- Replaced many older organophosphates that were phased out for indoor use due to toxicity

Other Indoor Chemicals Used (Less Frequently)

- Fipronil (often in baits for ants and roaches)
- Hydramethylnon (roach baits)
- Boric acid (low-toxicity dust)
- Indoxacarb (bait formulations)

Regulatory Oversight

Indoor pesticide use in Florida is regulated by:

- The U.S. Environmental Protection Agency (EPA)
- Florida Department of Agriculture & Consumer Services (FDACS)

Licensed pest control operators must follow label directions and state certification requirements.

7. Major Corporations Selling Pest Control Products Used in Florida

Major Pesticide Manufacturers

1. American Vanguard Corporation
 - Parent company of AMVAC Chemical Corporation
 - Produces insecticides used in agriculture and mosquito control
2. BASF SE
 - Manufactures structural pest control and mosquito products
3. Syngenta AG
 - Produces professional pest control formulations
4. Bayer / Bayer Environmental Science
 - Historically developed many insecticide products
 - Continues to influence pest control markets
5. FMC Corporation
 - Produces pyrethroid and professional pest control products

6. Corteva Agriscience

- Manufactures agricultural and structural pesticide products

7. MGK (McLaughlin Gormley King)

- Produces specialty insecticides and synergists

Common Brands Used in Florida

Structural / Indoor:

- Maxforce
- Delta Dust
- Advion
- Alpine
- Contrac Blox
- Suspend
- Cy-Kick
- Demand CS
- MGK Pyrocide

Mosquito Control Products:

- Vectobac
- Vetolex
- Altosid
- Dibrom
- Natular
- FourStar BTI

Public mosquito abatement also uses organophosphate adulticides (naled, malathion) and synthetic pyrethroids (permethrin, sumithrin, prallethrin) registered by the EPA.

8. The Name “israelensis” — Meaning and Origin

The bacterium used in mosquito control is:

Bacillus thuringiensis israelensis (Bti)

The subspecies *israelensis* was named in 1976 after its discovery in Israel. The strain was isolated from soil samples in the Negev Desert.

Taxonomic structure:

- Genus: *Bacillus*
- Species: *thuringiensis*
- Subspecies: *israelensis*

The Latin suffix “-ensis” means “originating from” or “belonging to.” Thus, *israelensis* literally means “from Israel.”

9. Legislative Efforts and Pesticide Liability

Recent legislative efforts supported by industry groups, including Bayer, have sought to limit certain pesticide-related lawsuits.

Key elements include:

- Proposed immunity provisions tied to EPA-compliant labeling
- Industry arguments regarding federal preemption
- State-level liability reforms
- Opposition concerns about reduced consumer legal remedies
- Introduction of the Pesticide Injury Accountability Act of 2025 (S.2324)

The debate reflects tensions between corporate liability, federal regulation, and public health protections.

10. Historical Context: I.G. Farben, Bayer, and Zyklon B

During the Nazi era (1933–1945), Bayer operated as part of I.G. Farben, formed in 1925.

The conglomerate included:

- Bayer
- BASF
- Hoechst

- Agfa

I.G. Farben:

- Produced synthetic fuel
- Manufactured synthetic rubber
- Operated facilities using forced labor

Zyklon B, originally developed as a pesticide, contained hydrogen cyanide and was used in Nazi extermination camps.

After World War II:

- I.G. Farben was dissolved
- Executives were prosecuted
- Component companies were later re-established



