



Turkey Science and  
Production Conference

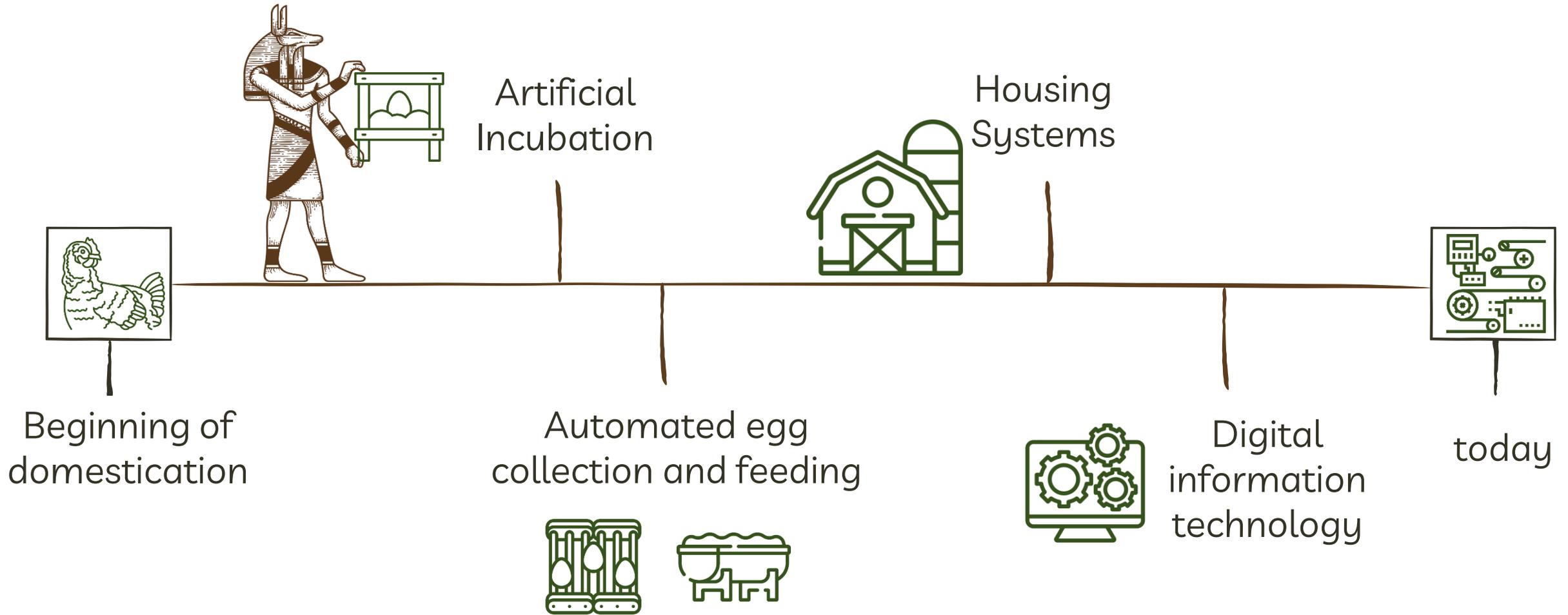
# **Advanced technologies and animal welfare go hand in hand – Producing for the Future**

**Jörg Hurlin**

**8<sup>th</sup> Turkey Science and Production Conference**

**March 12<sup>th</sup>, 2026**

# Innovations in Poultry Husbandry



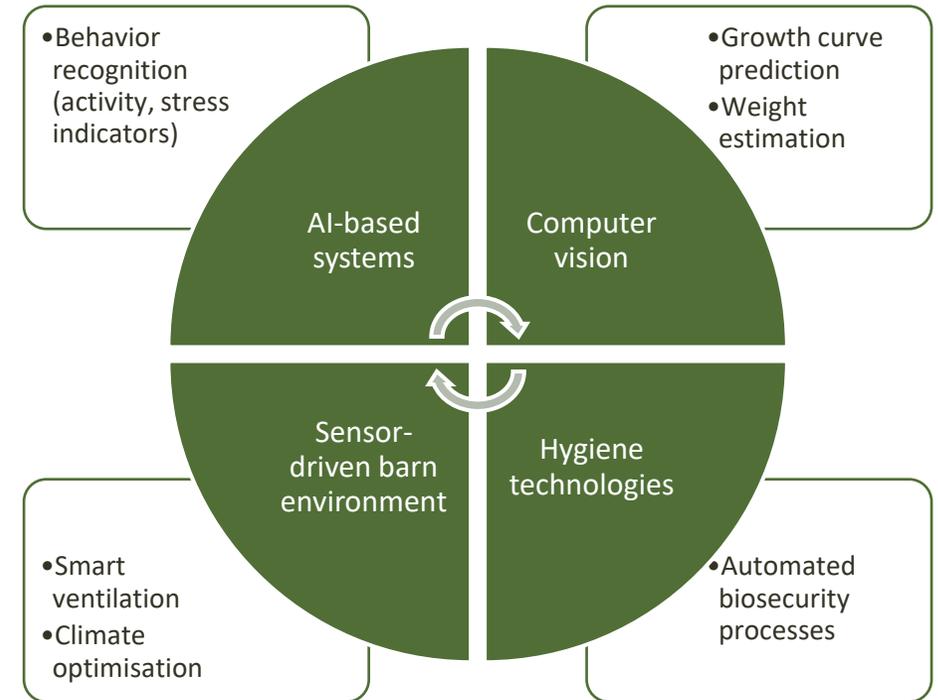
**Technical progress is needed to increase efficiency!**

# New technologies are already shaping (turkey) production

Technology is not replacing care — it is enabling better care.

Where advanced technologies can fit in:

- AI sees patterns humans cannot
- Helps reduce stress, improve welfare, and support workers
- Enables more consistent, data-driven decisions



# Agenda



## Company Information



## Technologies AAT:

- **Grading & Vaccination**
- **Hatching Egg Disinfection**
- **In-ovo sex determination**



## Future opportunities

# Key Facts AAT



**Idea**



**Planning phase**  
Proof of concept



**Realization phase**  
Prototype:  
Proof in practice



**Transfer phase**  
From  
Prototype to  
final testing



**Market ready product**

**Founded in 2015**

**4 market ready products**

**Cooperations with universities and research institutes**

**Specialized in niche markets**



**R&D**  
Focus on  
advanced  
technologies for  
the poultry sector



**EW Group**  
Global EW  
network



**Think Thank**  
From idea to  
market ready  
product

# Why is technology and automation so important?



Structure processes and make them efficient



Counteracting against rising wage costs and availability of labor



Biosecurity and animal welfare aspects



Digital transformation



Innovation and technology leadership

# Agenda



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## Future opportunities



Farm equipment: Fully automated grading and vaccination

# GRADY & Vaccybot



Farm Equipment



Disinfection



Hatchery Solutions

Farm equipment: Fully automated grading and vaccination

# The challenge



Weighing



Sorting



Vaccination

Farm equipment: Fully automated grading and vaccination

# GRADY



Patented cradle design for maximum support



Weighing with high precision weighing cell



**Throughput**  
Up to 3.500 birds / h

	Manual grading	GRADY
Employee	8-10	5
Hourly performance	2,136 birds / h	3,500 birds / h

→ Reduced labor time of up to 64 %



Combination of vaccination & grading in one process





# Vaccybot

## Near infrared (NIR) camera technology

- Penetrates thin layers of, e.g., fog, dust and smoke
- Typical areas of application:
  - Surveillance cameras / night vision
  - Biometric scanners (veins, faces)
  - Forensics (fake detection)
  - Medical imaging



## Multi-axis robot

- Axial movement along linear guides
- 2D rotary arm moves along three axes in a plane 2D space
- Precise control possible
  - Can be combined with cameras, e.g., for quality control

Farm equipment: Fully automated grading and vaccination

# Vaccybot



Farm equipment: Fully automated grading and vaccination

# GRADY & Vaccybot



## Automation

automates the process for reliable and repeatable results



## Mobile and compact

designed for easy transportation between barns



## High capacity

GRADY: up to 3,500 birds/h  
Vaccybot: up to 2,800 birds/h



## Advanced software

smooth functionality, digitalized grading, and vaccination



## Combined process

One-time handling for greater animal welfare and less stress



## Cost-efficient operation

Reduces labor time & costs and improves accuracy

Hatching Egg Disinfection

# e-ggytizer



Farm Equipment

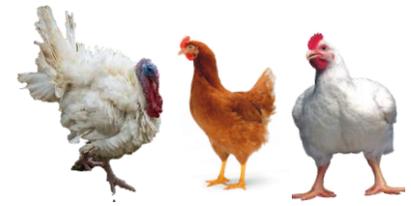


Disinfection

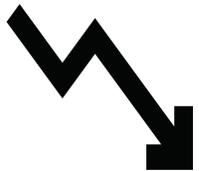


Hatchery Solutions

# The challenge



**The problem:**  
Insufficient hatching egg disinfection.



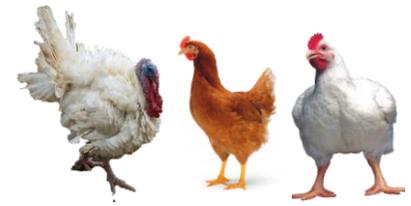
Reduced hatchability /  
incubation efficiency  
increased mortality



Regulations and  
bans on disinfectant  
ingredients

→ Hatching egg disinfection with accelerated electrons

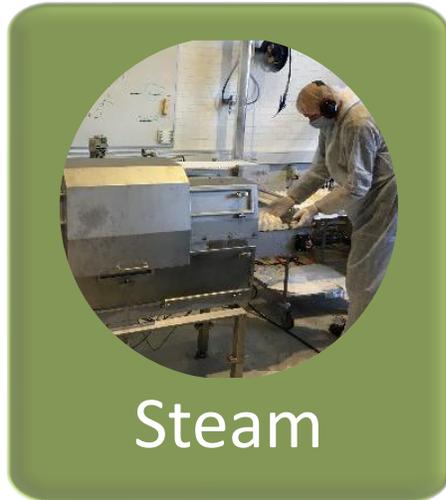
# The challenge



Ozone



UV light



Steam

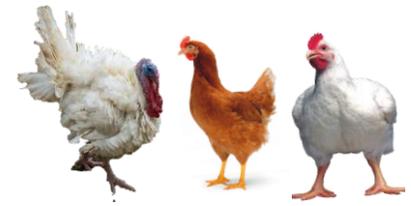


Formalin

- Affects embryonic development
- Poses health risks for hatchery professionals
- Exerts negative impact on the environment

(Zeweil et al., 2015; Kusstatscher et al., 2017; Oliveira et al., 2020)

# Why it is so important



Reduce bacterial load

Prevent vertical / horizontal spread of diseases

Improve hatchability

Improve chick quality

United States Broiler Hatchability (%)



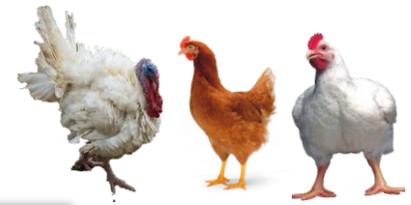
Source: USDA Broiler Hatchery Report



# e-ggytizer

## Procedure

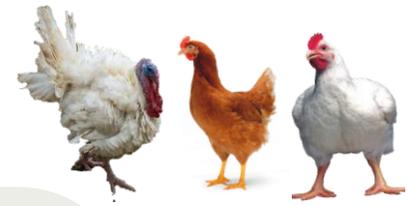
1. Electrons come from normal electrical current and accelerated to light speed
2. Egg shell is bombarded with electrons
3. Electrons react with molecules in the material (vacuum is necessary)
  - electrons ejected from orbit
  - free radicals to be performed
4. Reactions cause brakes in their DNA → preventing spread or replication



### Electron Beam

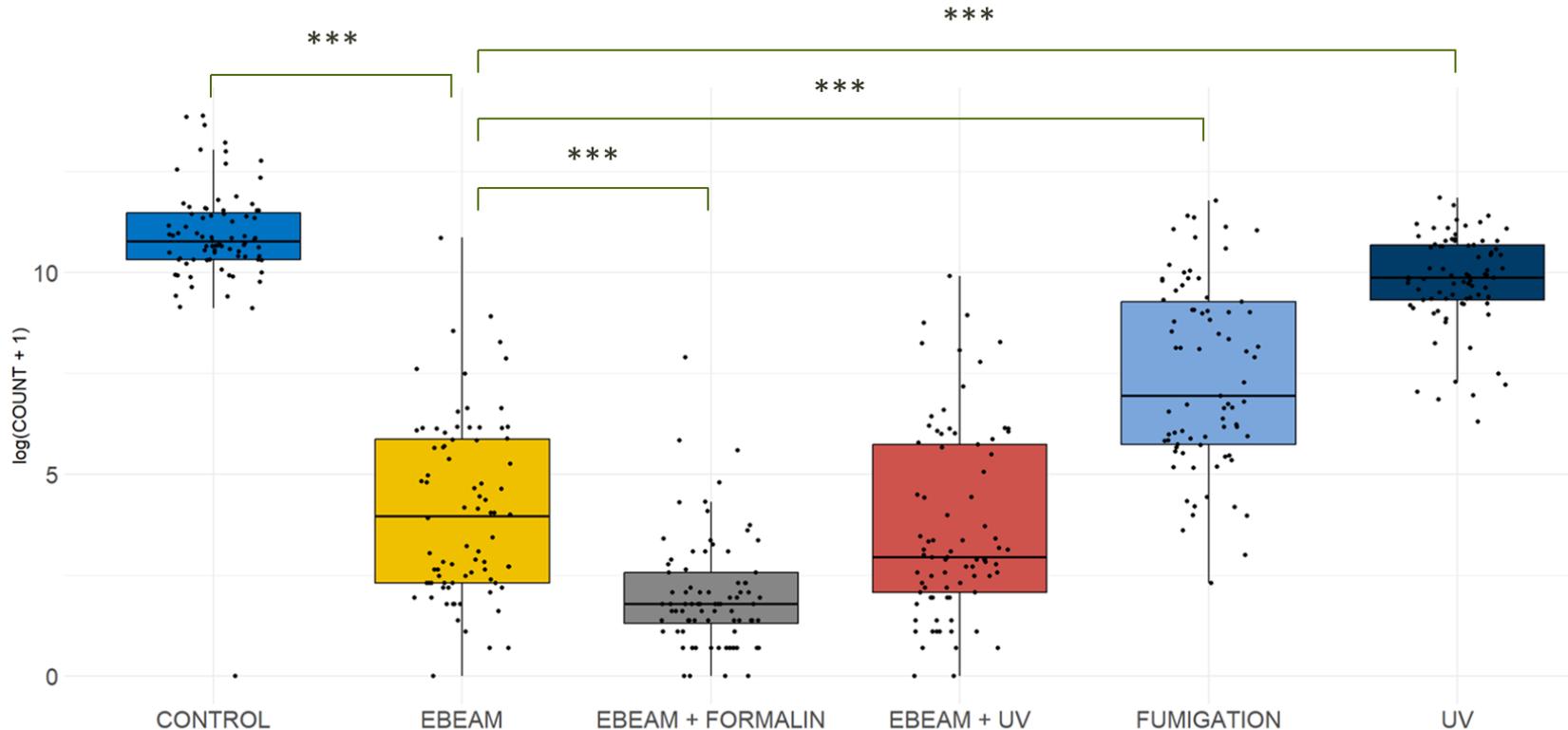
The industrial application (medical products, food irradiation) of electrons is referred to as “Electron Beam / E-Beam”.



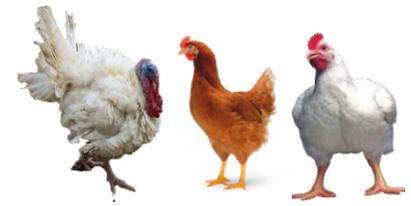


Highest level of disinfection  
up to Log 5 less bacteria

## Efficiency trials



n = 840  
\*\*\*:  $p \leq 0.001$



## Egg Shell Penetration trials

 **Gray (Gy)**  
Quantifies the absorbed dose

Control



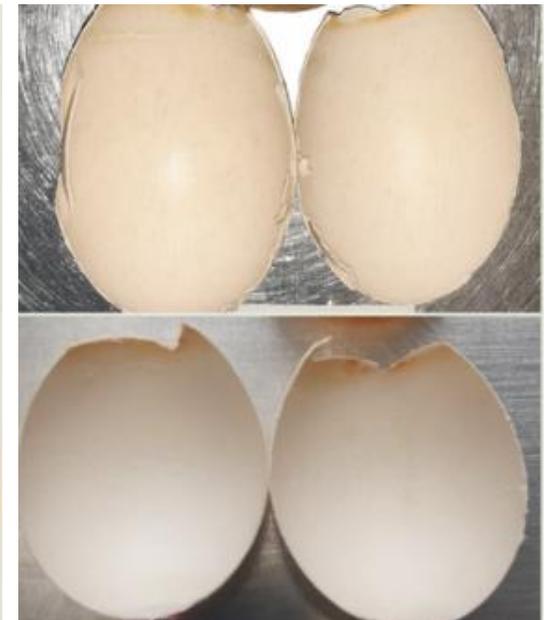
10kGy



Control



25kGy



# About Ebeam



## Highest level of disinfection:

up to Log 5 less bacteria  
improved hatchability  
reduced first-week-mortality



## Chemical free:

no harmful ingredients  
secure for humans and animals  
environmentally friendly



## Improved biosecurity:

animal disease prevention  
no residues

Hatchery Solutions: In-ovo sex determination

# CHEGGY



Farm Equipment



Disinfection



Hatchery Solutions



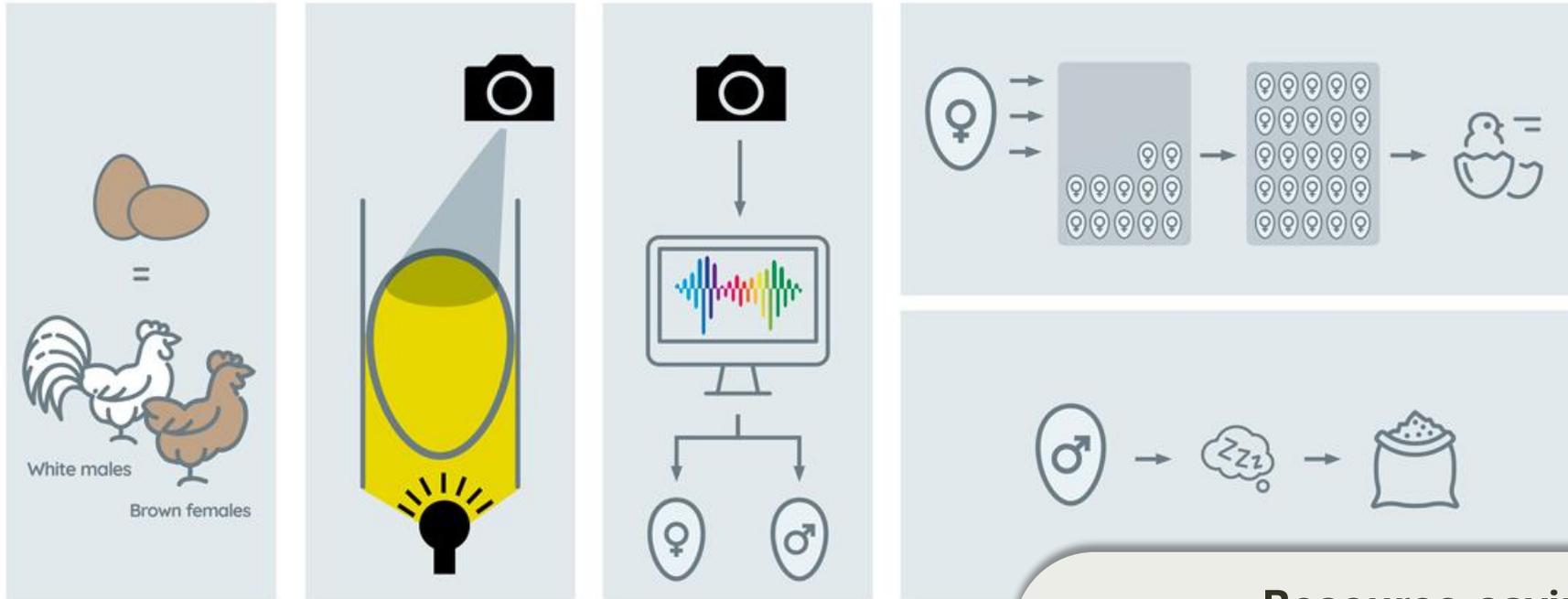
# The challenge

**The problem of male chick culling:**  
Over 7 billion male chicks are culled worldwide every year



→ In-ovo sexing is the only sustainable alternative to chick culling

# CHEGGY



## Hyperspectral Imaging

- enables the determination of detailed spectral information about an object
- splitting an image into many small color-/ wavelength ranges
- different levels of light reflection allow materials/markers to be identified

 **Resource-saving and sustainable**

Discharged hatching eggs are processed into dry egg powder  
→ **high-quality protein source**

**Hatchery Solutions: In-ovo sex determination**

**CHEGGY**



**Full automation –  
improvement of CHEGGY**

**www.Chegggy.com**





# CHEGGY



**Throughput**  
up to 25,000 eggs / hour



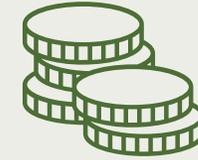
## Environmentally friendly

Low energy consumption  
and no consumables



## Compact design

~29m<sup>2</sup> / unit



## Cost efficient

Lowest cost and lowest  
impact on consumer price



## Gentle

No hatching losses



## Easy to operate

Fully automated



## Secure in planning

Average accuracy of 97%



## Non-invasive

No risk of contamination  
and negative influence on  
embryonic development

# Agenda



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## Future opportunities



# Technology and animal welfare

## Goal: future-oriented poultry production

### Hyperspectral imaging

- Up to 25,000 eggs/hour and 97% accuracy
- Non-invasive
- Ethical concerns (male chick culling)

### Disinfection with accelerated electrons

- 5-log pathogen reduction
- Higher hatchability & lower first-week mortality
- Hygiene and biosecurity

### Multi-axis robot

- Up to 64% labor reduction
- Improved flock management precision
- Labor demand



In addition, improved animal welfare and cost - efficiency of the operation



**Thank you  
for your attention!**



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