

**NUFFIELD**  
INTERNATIONAL  
FARMING SCHOLARS



# Innovations to Improve the Sustainability of Commercial Poultry Production

Georgie Cartanza



# Delmarva Produced 9.6 % of U.S. Poultry

	# Sold	Pounds Sold
Delaware	303.5 million	1.851 Billion
Maryland	252.5 million	1.843 Billion
Virginia	269.1 million	1.533 Billion
Total	825.1 million	5.229 Billion

14,000 sq km 5400 sq miles



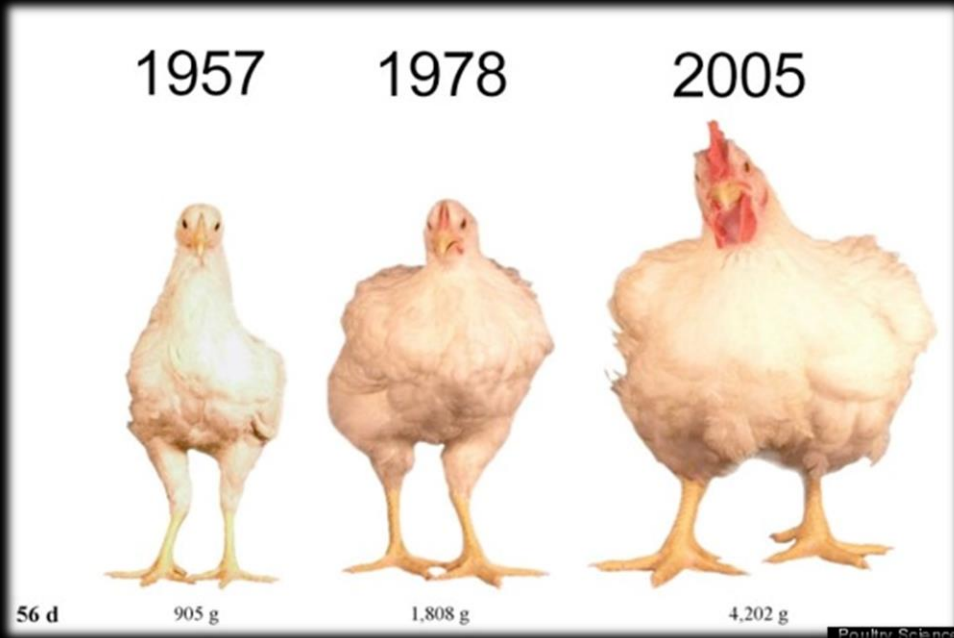
# THE CHALLENGES

- Connecting with Consumers / Prosumers
- NGO's influence on Legislation
- Management of Nutrient & Resources
- Biosecurity Disease Outbreaks (Avian Influenza)
- Economic Viability of Integrators and Growers

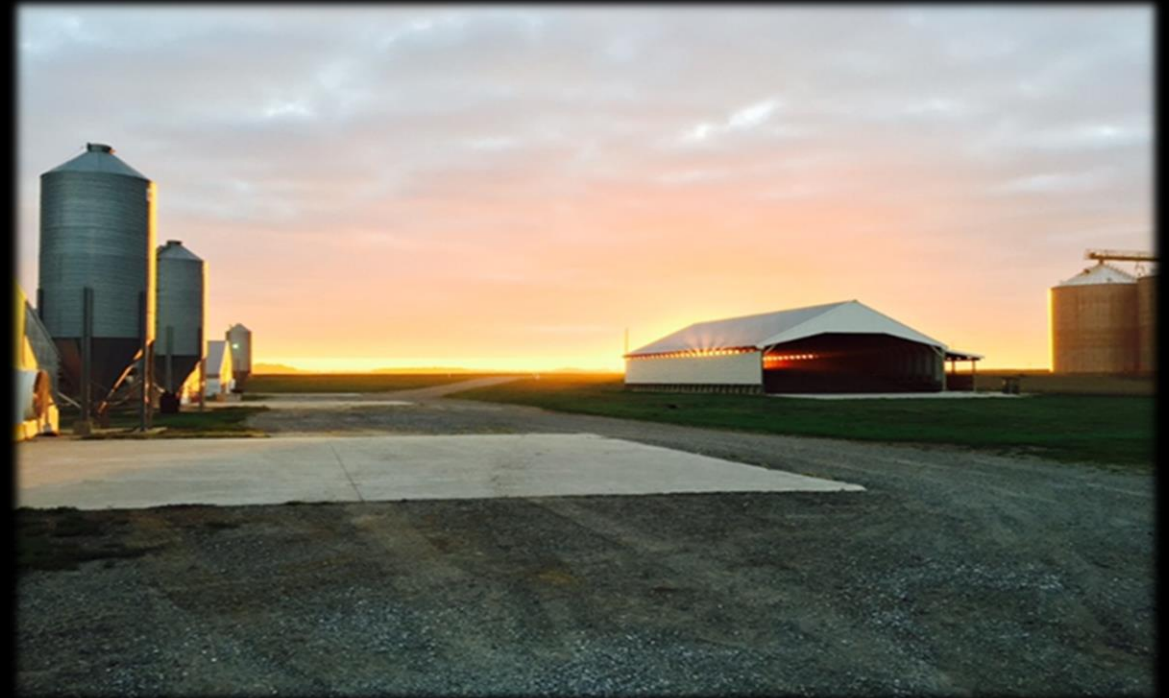
# SOCIAL LICENSE TO OPERATE

- Recognize the power of NGO's
- Animal agriculture is under attack
  - “Public Truth is Not Defined By Our Reality- It is Defined by the Publics Perception of Reality.”
  - Don't confuse fighting with leading.
  - We need to “Connect, Engage, Protect” Animal Ag Alliance
  - The world is run by people that show up...

# ENGAGE IN, OWN, AND SHOWCASE



How did we get here?



Environmental Stewardship

# INNOVATIONS IN POULTRY WELFARE



Monday 2:00



# HATCHCARE

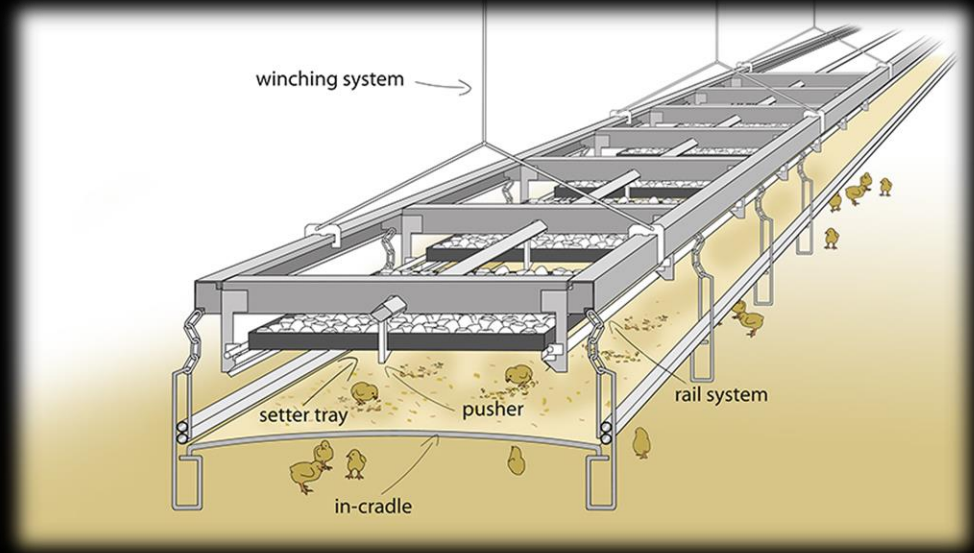
- Probroed & Sloot Hatchery  
Germany
- Early Chick Feeding
- Less Stress
- Improved gastrointestinal health  
and immunity





# ON FARM HATCHING

- X-Trek Vancomatic
- Transfer at 18 days of incubation





# eggXYt

- 7 BILLION Male Chicks euthanized each year in the layer industry
- \$1.4 Billion Loss in the U.S. Layer industry



**BROILER**



**LAYER**



# MALE EGG BIOMARKER

- Allows Male eggs to be identified prior to incubation
- Egg passes under a light that shows the male egg to be a different color
- Doubles hatchery space
- Reduces incubation costs
- Removes the need for manual sexers
- Saves on Feed Cost
- For the consumer- premium ethically-grown male chick culling free eggs



# BIG DATA → SMART DATA PRECISION LIVESTOCK

- Automated tools for farmers to continuously monitor welfare and health of birds
- Livestock Transport Devices
- Collects Real Time Data and Alarms Driver
- Thermal Imaging rather than ambient temperature monitoring for environmental control
- Artificial Intelligence
- Robotics- Faromatics Chicken Boy



Transport Genie



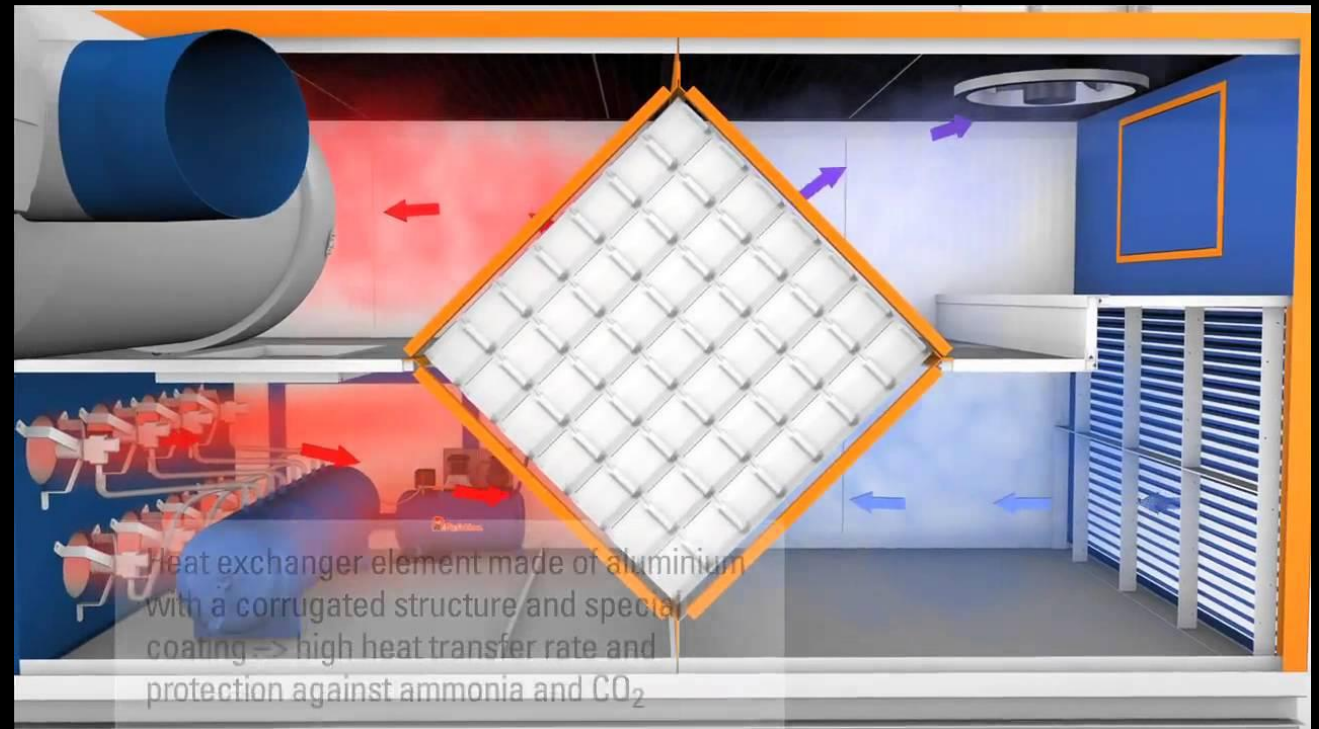
# VISION-BASED EARLY WARNING SYSTEM

Fancom eYenamic



# ENVIRONMENTAL: AIR EMISSIONS, NUTRIENT MANAGEMENT

- Heat Exchanger Technology to mitigate dust, particulates and ammonia
- Manure to energy
- Alternative uses for manure
- Air Scrubbers



# BIOSECURITY IN-VESSEL COMPOSTING

**ecodrum** 

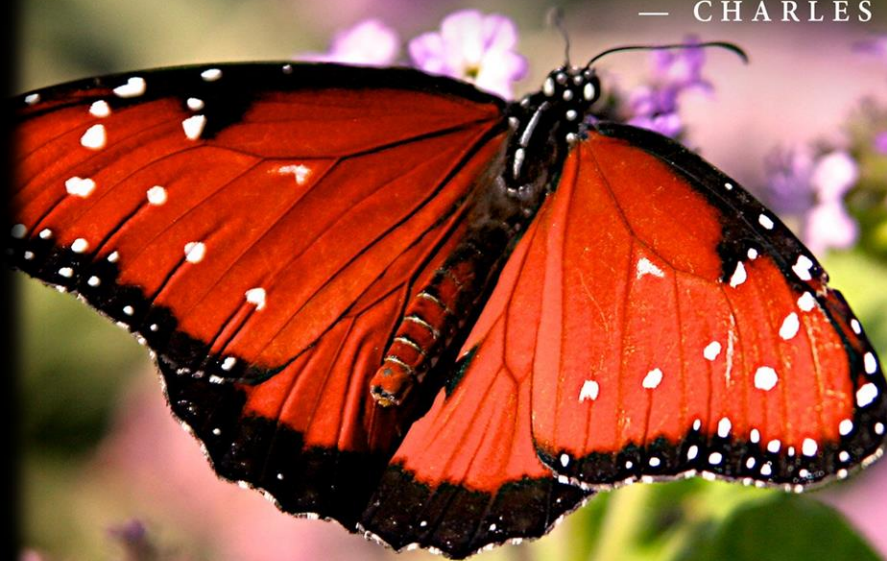


**Composting, Simplified**



It is not the strongest of the species  
that survives, nor the most intelligent  
that survives. It is the one that is the  
most adaptable to change.

— CHARLES DARWIN



Simple Reminders  
SIMPLEREMINDERS.COM

# THANK YOU

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