

Canadian *Salmonella enteritidis*
control symposium
Vancouver, BC
December 1, 2010

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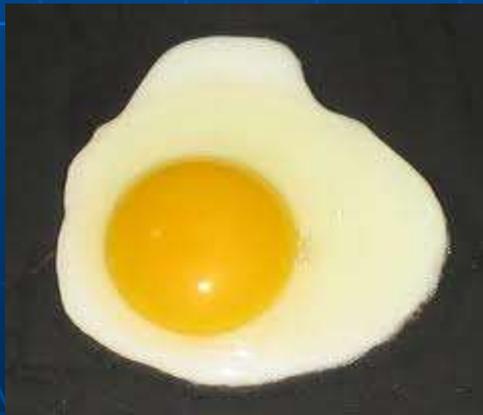
**Poultry Health
Services Ltd.**

Integrated Salmonella Control in a Non-Integrated System

- Perspective
- Introduction
- Supply Chain
- Interventions
- Outcomes
- Moving forward

Perspective...chicken vs. egg

It all depends on how you look at things...see....



Perspective...where you work

It all depends on how you look at things...see....

- Public Health

- Protecting public health

- Food Safety

- Protecting food safety

- Poultry Industry

- Food safety, Bird Welfare, Market requirements, Consumer needs/desires





What we do

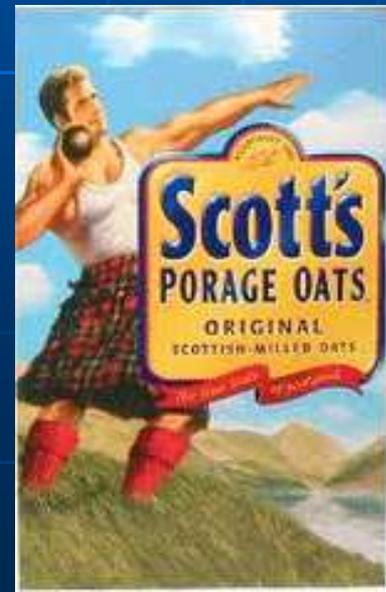
- **Independent Private Poultry Veterinary Practice**
- **3 Board certified Poultry Veterinarians**
(American College of Poultry Veterinarians)
- **Diagnostics**
 - Alberta Agriculture Surveillance Network
 - Poultry Health Centre of Excellence
- **Research and teaching**
 - U of A
 - U of S
 - U of C
- **Autogenous vaccine development**
 - Adenovirus vaccine (IBH)
 - Autogenous Cholera, Erysipelas, ORT vaccine
 - Autogenous Salmonella vaccine (SE, ST DT104, S. Heidelberg)
- **Consulting**
 - Flock Health Programs
 - Corporate Consulting
 - Program development

PHS team



Salmonella control why?

- What is my motivation
 - Because I have to: regulatory requirements
 - Because I want to: improving food safety is good business, get ahead of the curve



Salmonella control

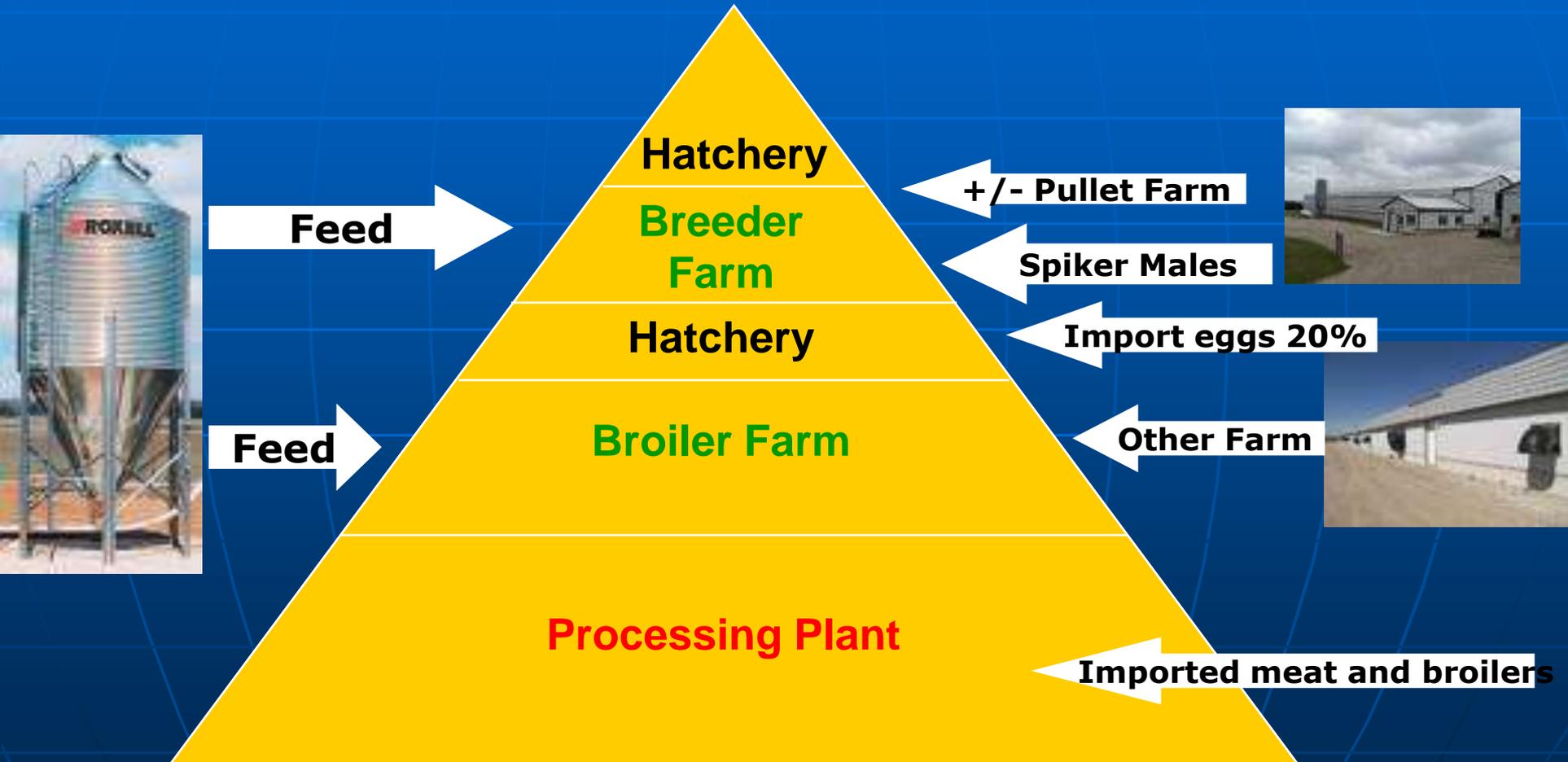
Why bother?

- Consumer top 5 food related health concerns:
 - 1. Salmonella
 - 2. E. coli
 - 3. Trans fats
 - 4. Mercury
 - 5. Mad cow disease



Integrated Salmonella Control

Primary Breeder



**In a Non-Integrated system there are
Many factors out of our of direct control !**



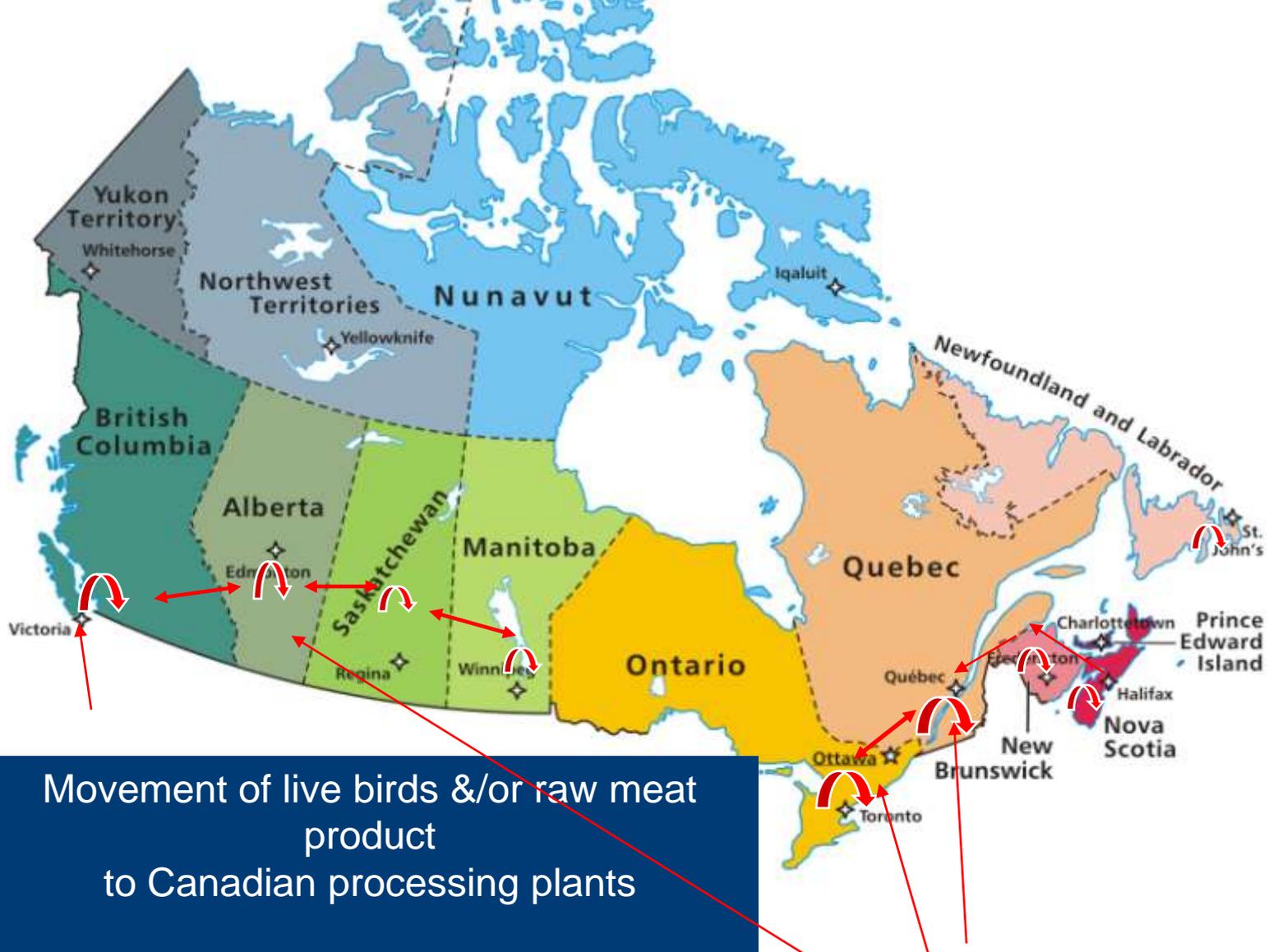
Broiler Hatching egg movement to Canadian hatcheries (note all breeder parent stock placed in Canada to produce these eggs originates from US)

Guaranteed to be Salmonella free

~18.6 % US origin



Movement of Broiler Chicken Chicks between hatcheries & to Canadian producers



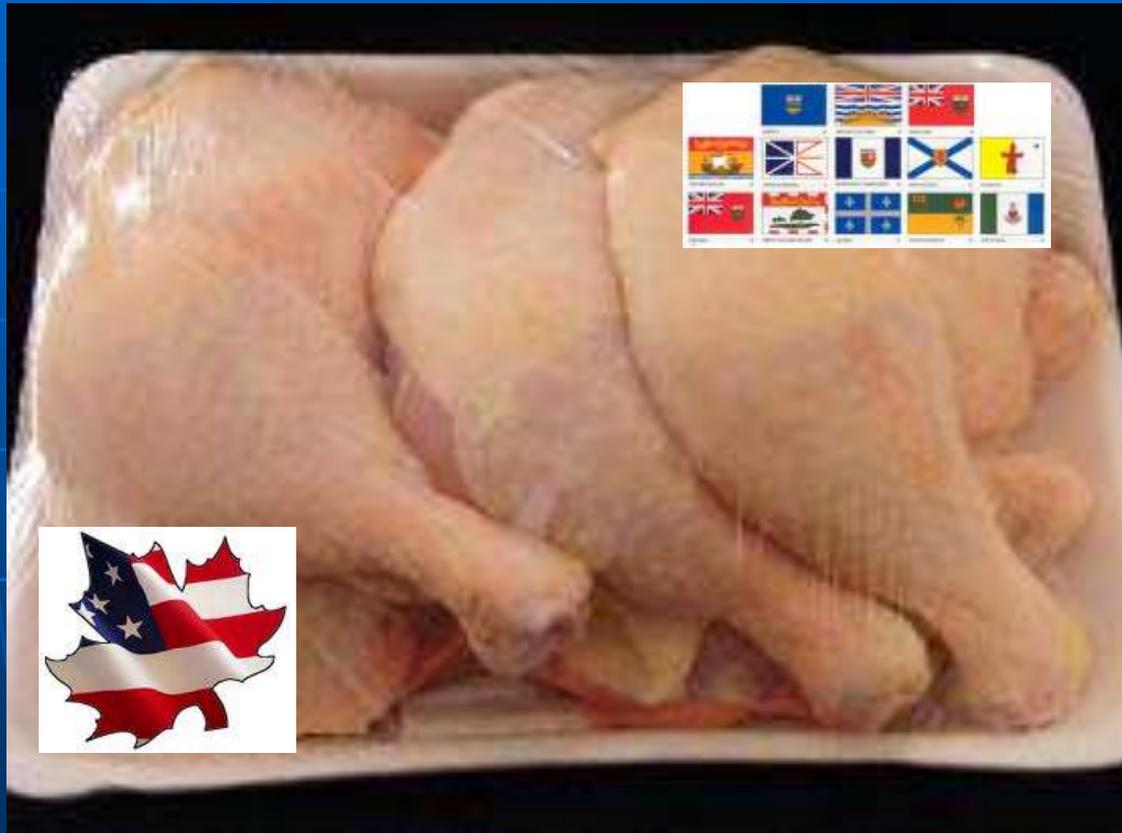
~7% US origin
(mainly raw meat product)



Movement chicken meat products to wholesale for distribution to retail

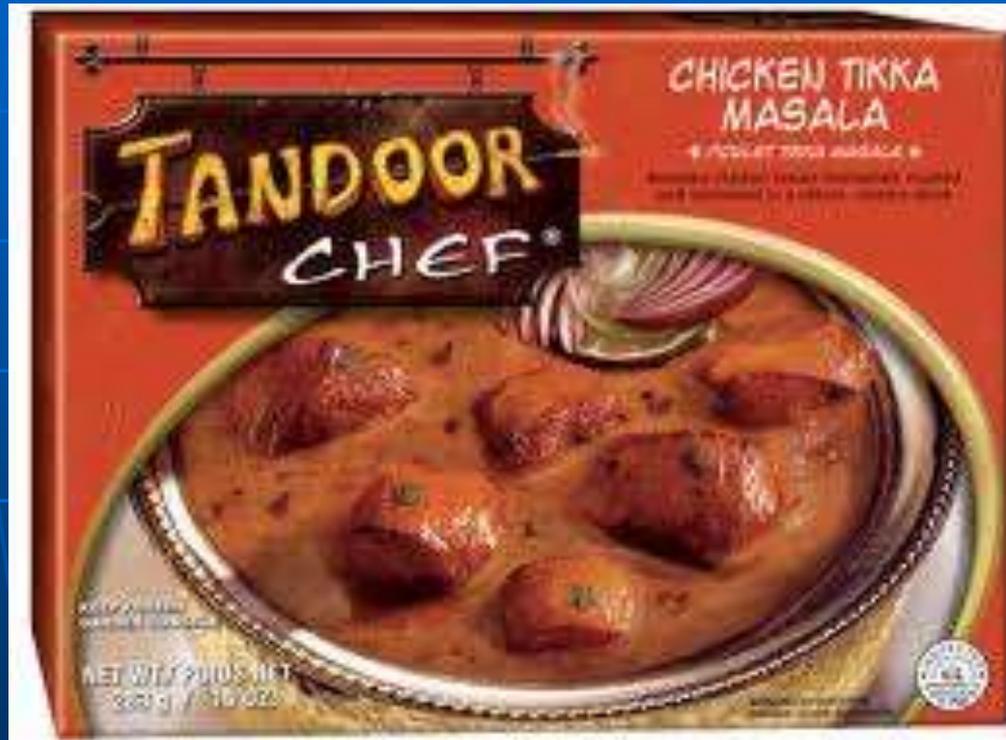
~1 % raw meat +
~ 5% in finished form

Retail Chicken



Made in the United States of Canada:
Samples taken at retail locations will not
represent the S.E status of the production in the area/province

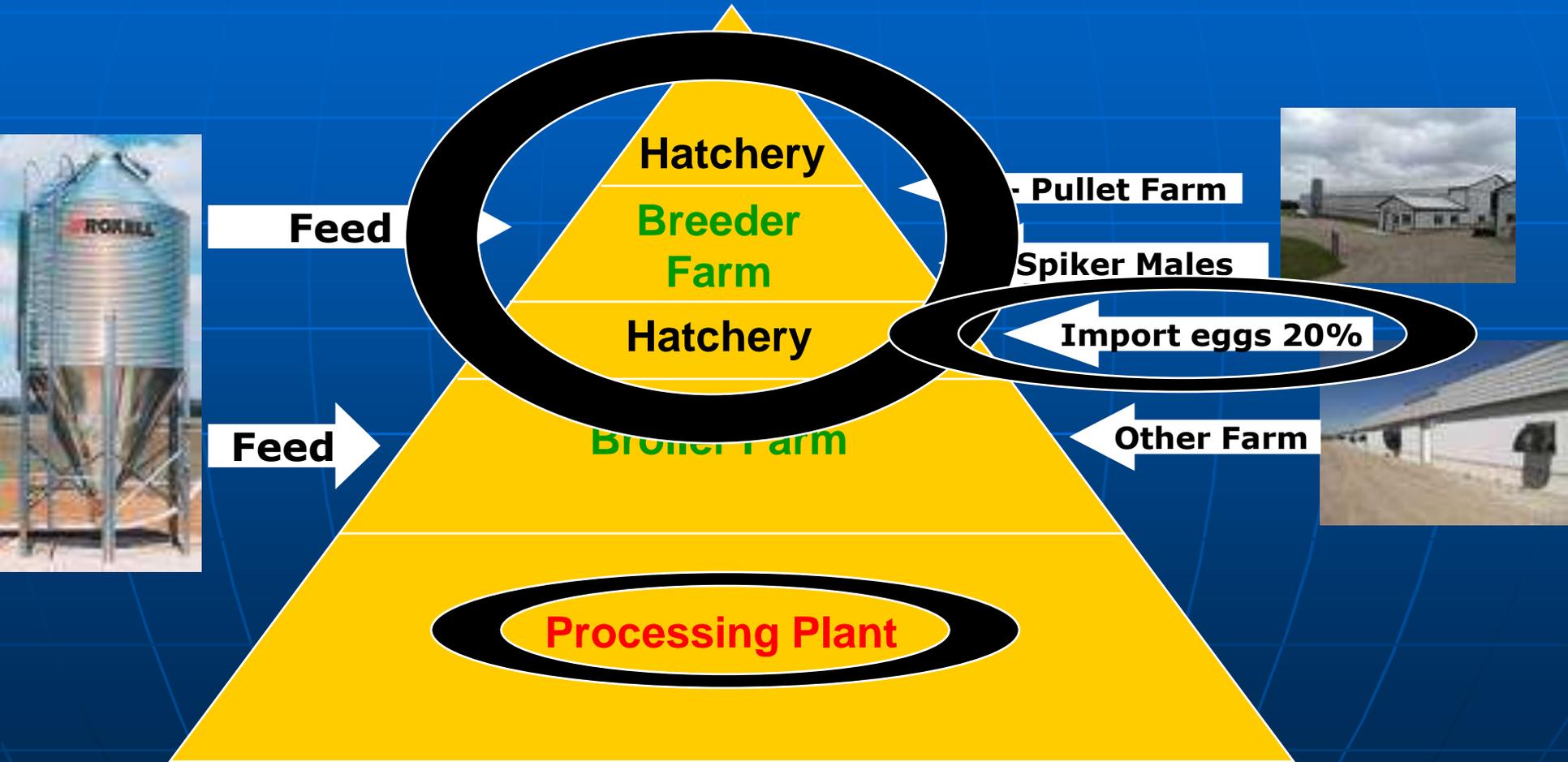
Prepared Chicken Products



Low risk?.....Chicken from anywhere in the world.

Salmonella Control

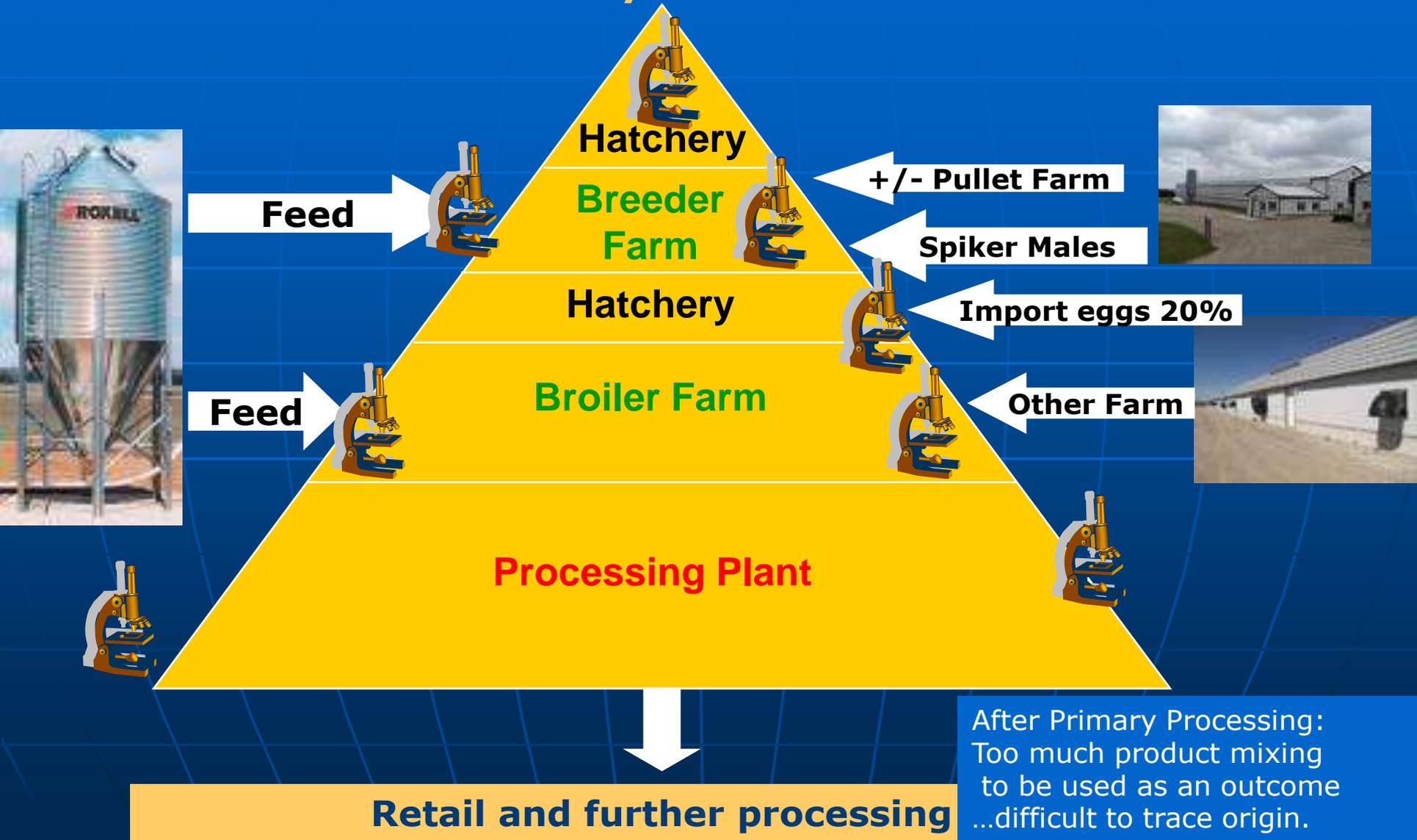
Primary Breeder



Start with what is in our control !

Salmonella Control Testing

Primary Breeder



Salmonella Control in Breeders

- Biosecurity (environmental + = birds +)
- Vaccination Killed vaccine
 - What you need to know about Salmonella
- Vaccination Live vaccine
- Egg handling
- C & D
- Feed?
- Management of positive flocks



Salmonella Control in Hatchery

- Biosecurity review
- Bird flows and Egg flows
- C & D
- Map opportunities for cross contamination
- Mitigation steps for cross contamination
- Test, adjust, repeat



Salmonella Control in Broilers

- Biosecurity
 - Focus on any repeat positives
- Monitoring early mortality (testing)
- Maintaining steady state
- Feed withdrawal
- Scheduling positive flocks
- Cleaning and disinfection
- Vaccination (Breeders)

- Pre-harvest water acidification 48 hours prior to shipping

Salmonella Control in Plant

- Review of operations
 - Bird flows, sanitation, equipment
- Monitor feed withdrawal
- Biomapping
(pluckers, chill, scalders)
- Stand and stare
- Test, adjust, repeat

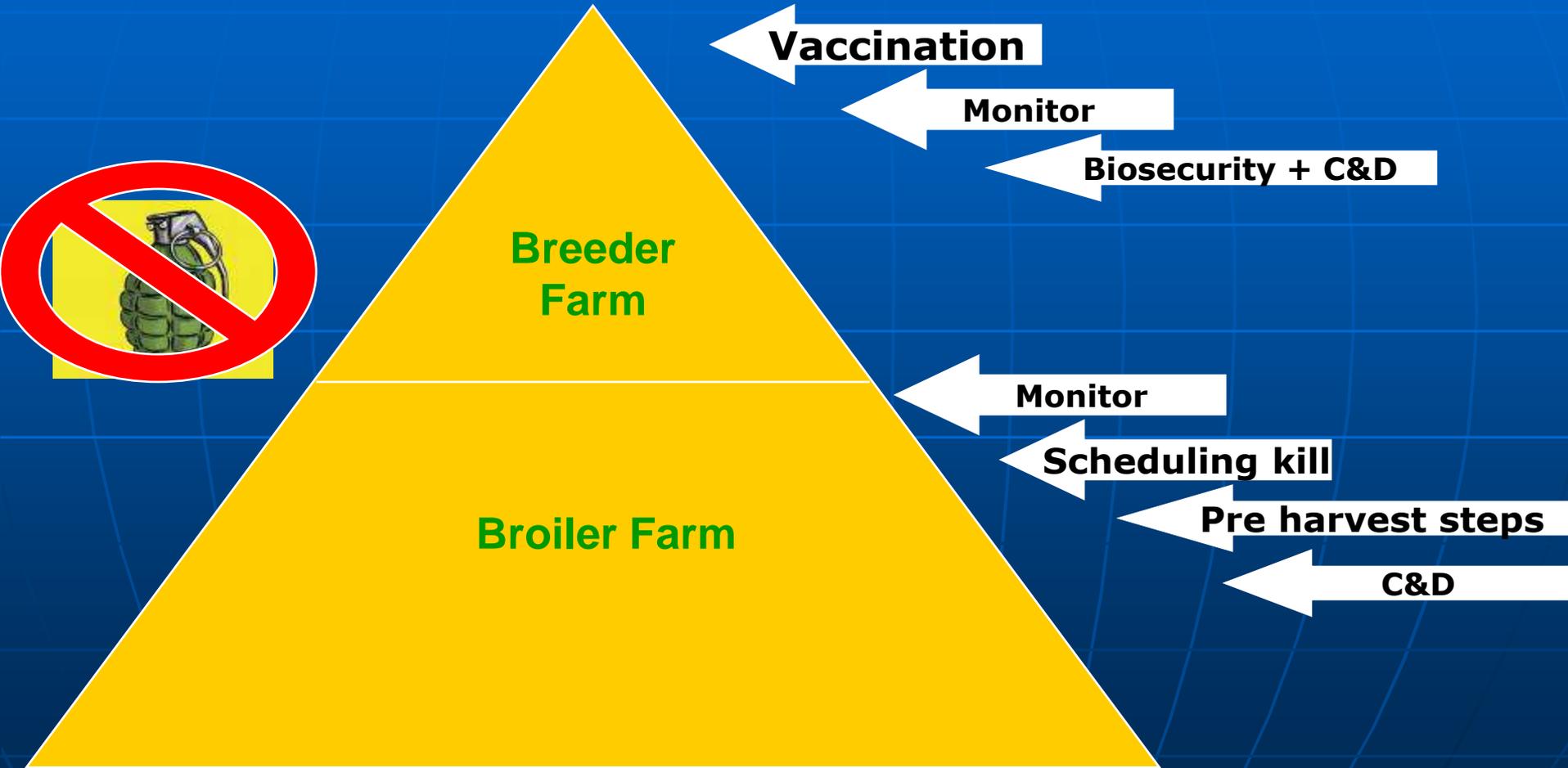


Salmonella Control in Feed

- Heat treatment
 - Chemical treatment?
 - Ingredient management
 - Rodent and pest management
 - Test, adjust repeat
- Focus on Breeder rations



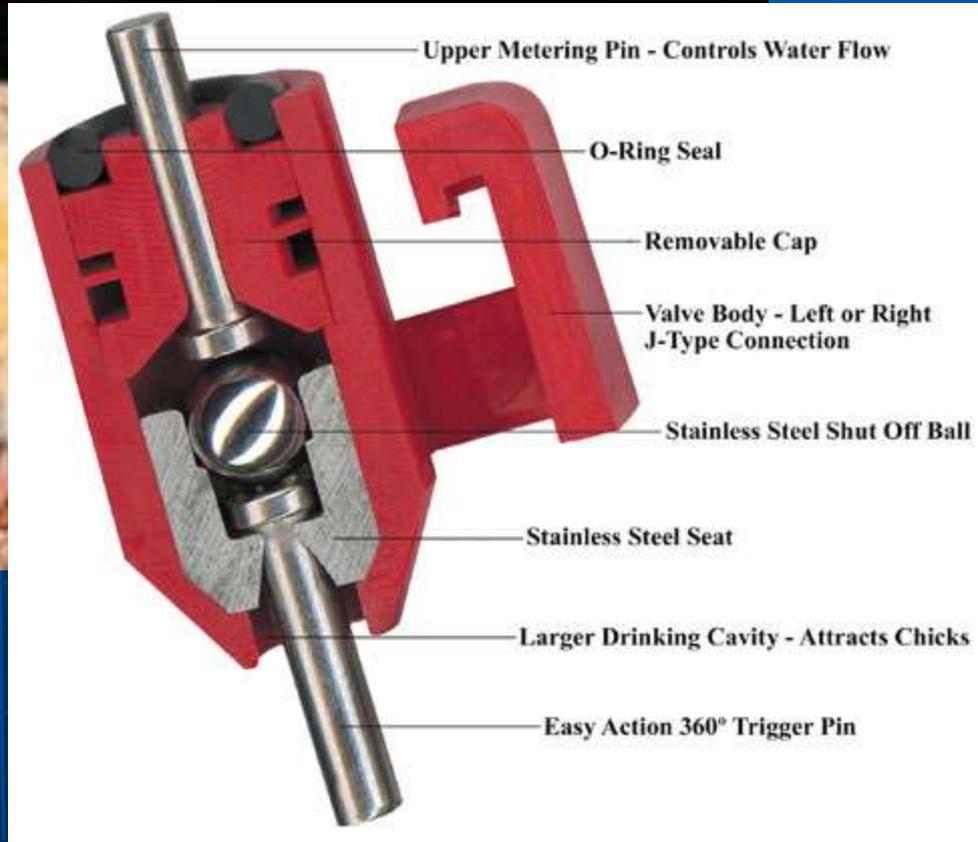
Salmonella Control Points

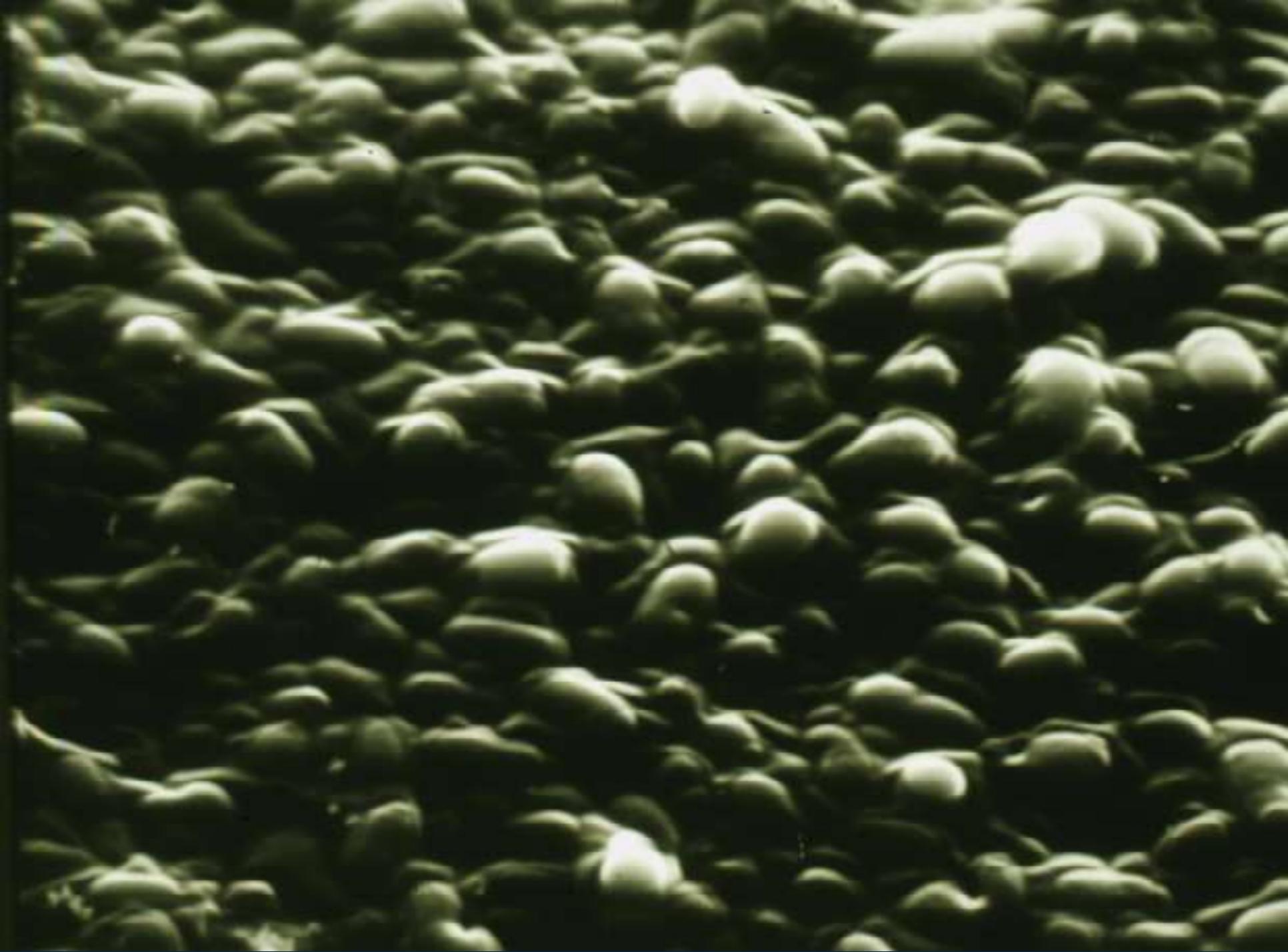


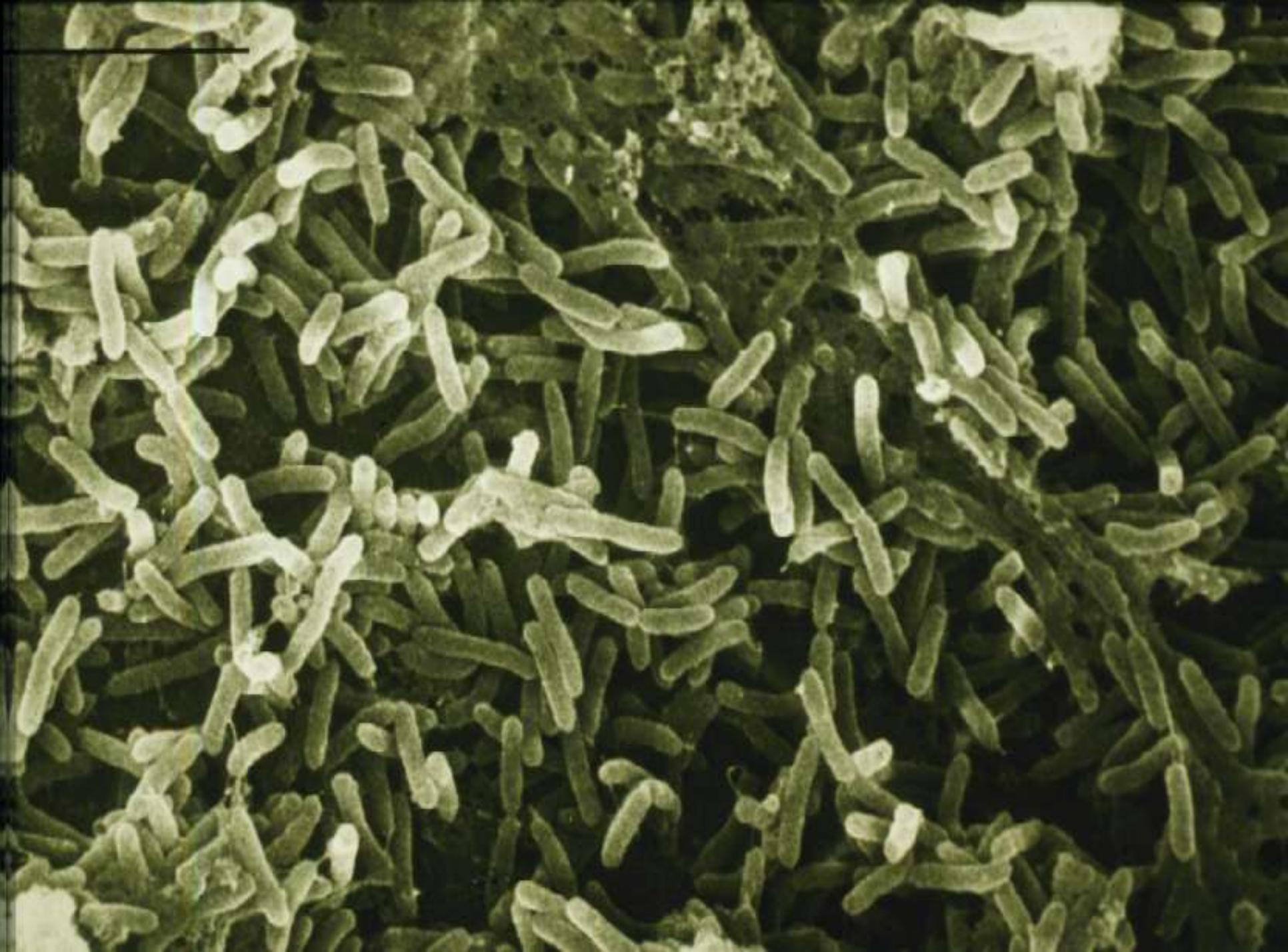
Salmonella Outcomes

- Measure at each step along the supply chain
- Routine, consistent and standardized testing
- Supportive testing to enhance industry efforts
 - How are we doing?
- Research funding to maintain a current understanding and to drive innovation

Biofilms - Reservoirs







Salmonella Outcomes

- Recognize that retail chicken samples may be very misleading relative to origin of contamination!
- Recognizing that human health outcomes are difficult to investigate and understand
- These programs need to be managed at the federal level and supported at the provincial level

Salmonella Outcomes

- Salmonella eradication programs can be achieved
- Application of the same standards to imports required to protect the health of domestically regulated product
- We need to balance cost benefit and manage risk
 - Putting domestic production at too great a disadvantage will ultimately limit your influence on the risk you intended to manage

Salmonella Outcomes

- Science is facts; just as houses are made of stones, so is science made of facts; but a pile of stones is not a house and a collection of facts is not necessarily science. Henri Poincare (1854 - 1912)

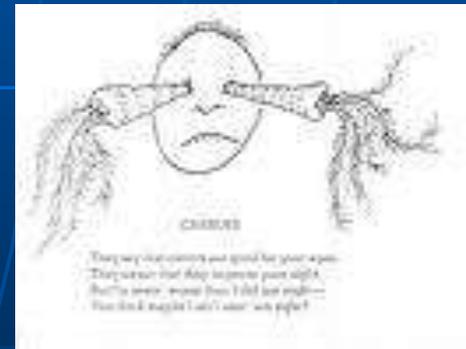
The message matters and as scientists we cannot be speaking of likely correlations and interesting trends!



Salmonella Outcomes



- Science Driven (statistics, data)
 - Risk Management Approach
 - Focus where the contamination occurs
 - Regulation or Sticks (behaviour)
 - Good for static compliance issues ie speeding
 - Education or Carrots (biology)
 - Good for
 - Goals = Outcomes
 - Pooled samples (retail chicken)
- Other places:
- What can we learn from other countries



What is the goal: Education or Regulation



**If you think education is expensive you should try ignorance
- Derek Bok**

Balancing education and regulation

- Testing without negative outcomes allows you to identify weaknesses and improve (Education)
- A final exam (pass or fail) gives us a measure of success....the results of the exam are both those of the student and the teacher!

(Regulation)

Next Steps

- Moving forward but looking where we are going to avoid unforeseen consequences



Can we have integrated Salmonella control in a non-integrated system....if we work together and measure the right outcomes

Thank you.....Questions and Discussion



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