



# What The Health Is Going On?

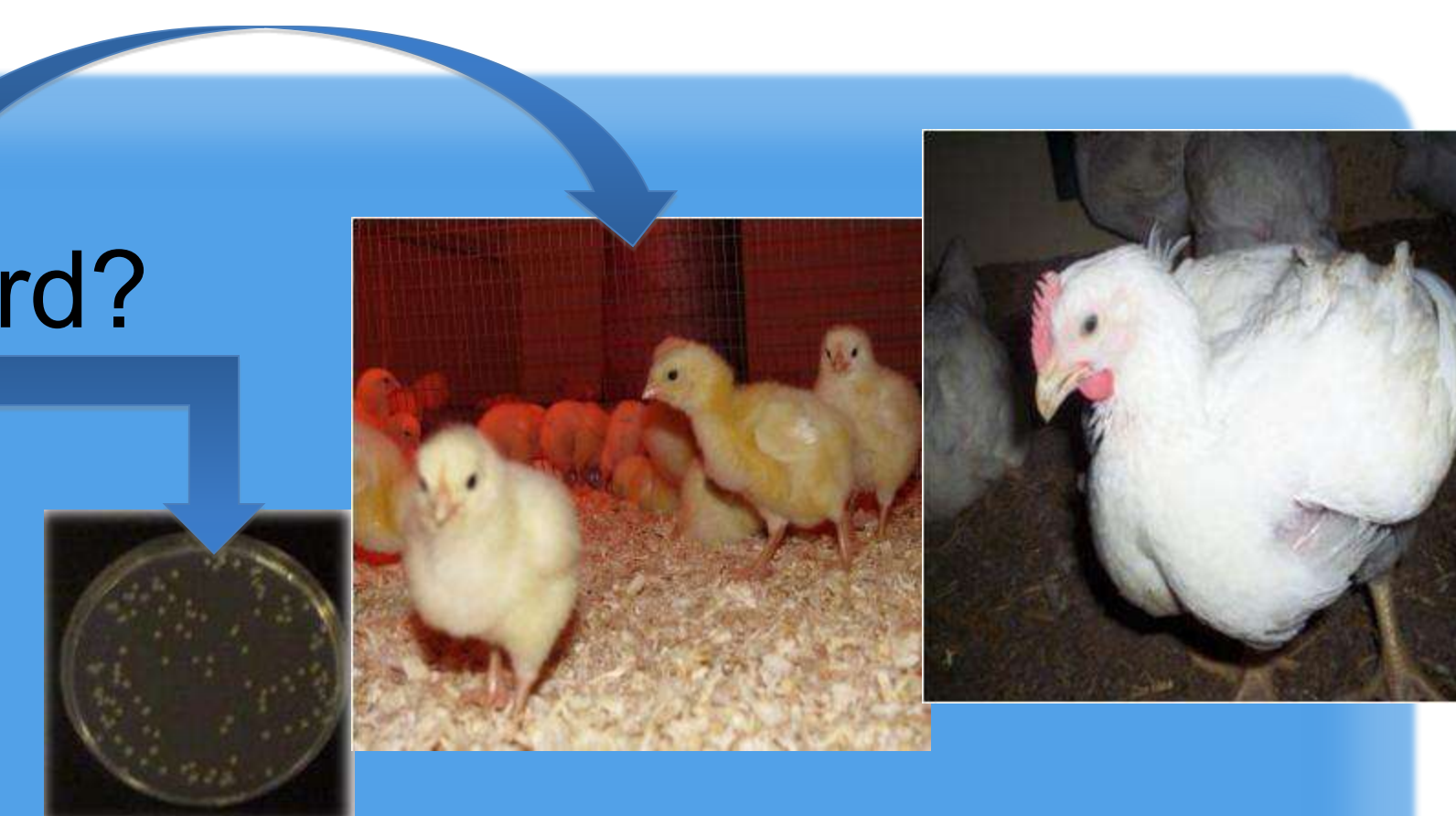
J.L.Saunders-Blades and D.R. Korver, University of Alberta

## Summary

A strong, healthy immune system is vital in poultry production. Research into bird immune function has only recently begun and therefore much is still a mystery. The aim of our research is to unravel some of the mystery and in turn discover novel nutritional and genetic opportunities for the poultry industry to enhance the ability of the bird to fight off infection and disease.

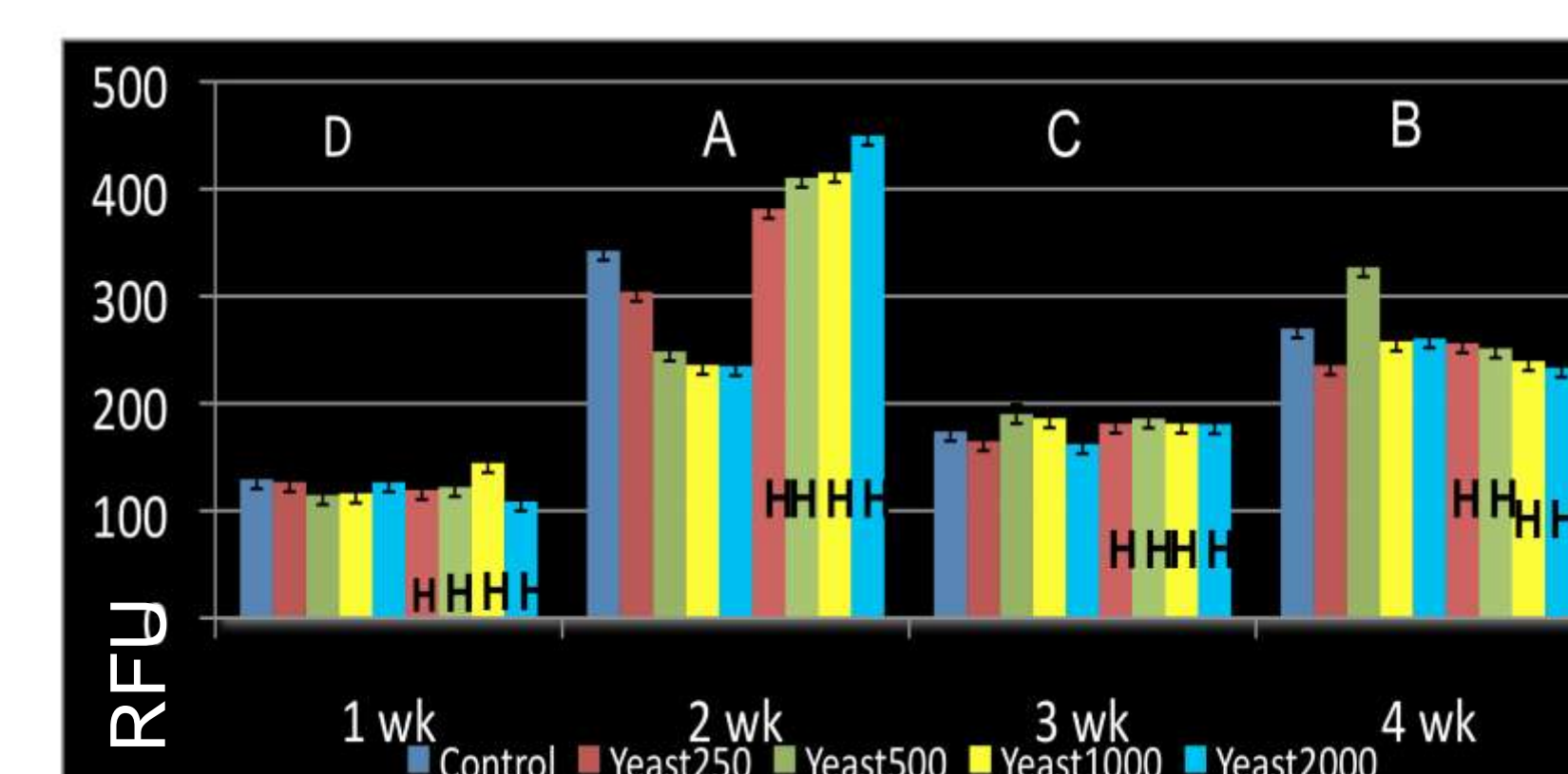
## Approach

- Begin with the “big” picture
  - What’s happening with the bird?
  - General Immune assays
- What’s causing these changes?
  - More in-depth approach
- This combination will allow for an accurate assessment and understanding of the birds immune system
  - Lead to discovery of novel techniques to manipulate the birds immune response



## Future Research

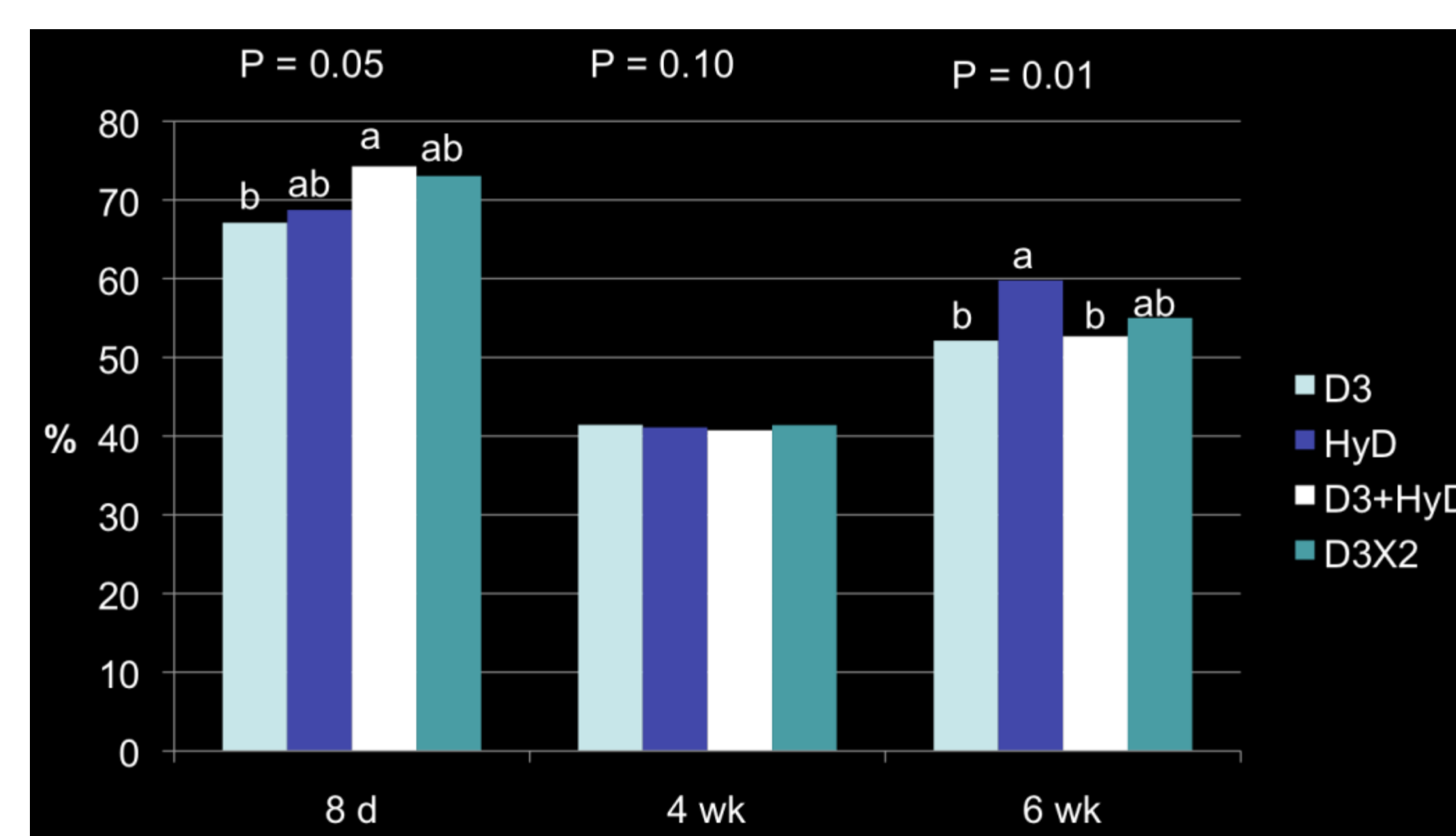
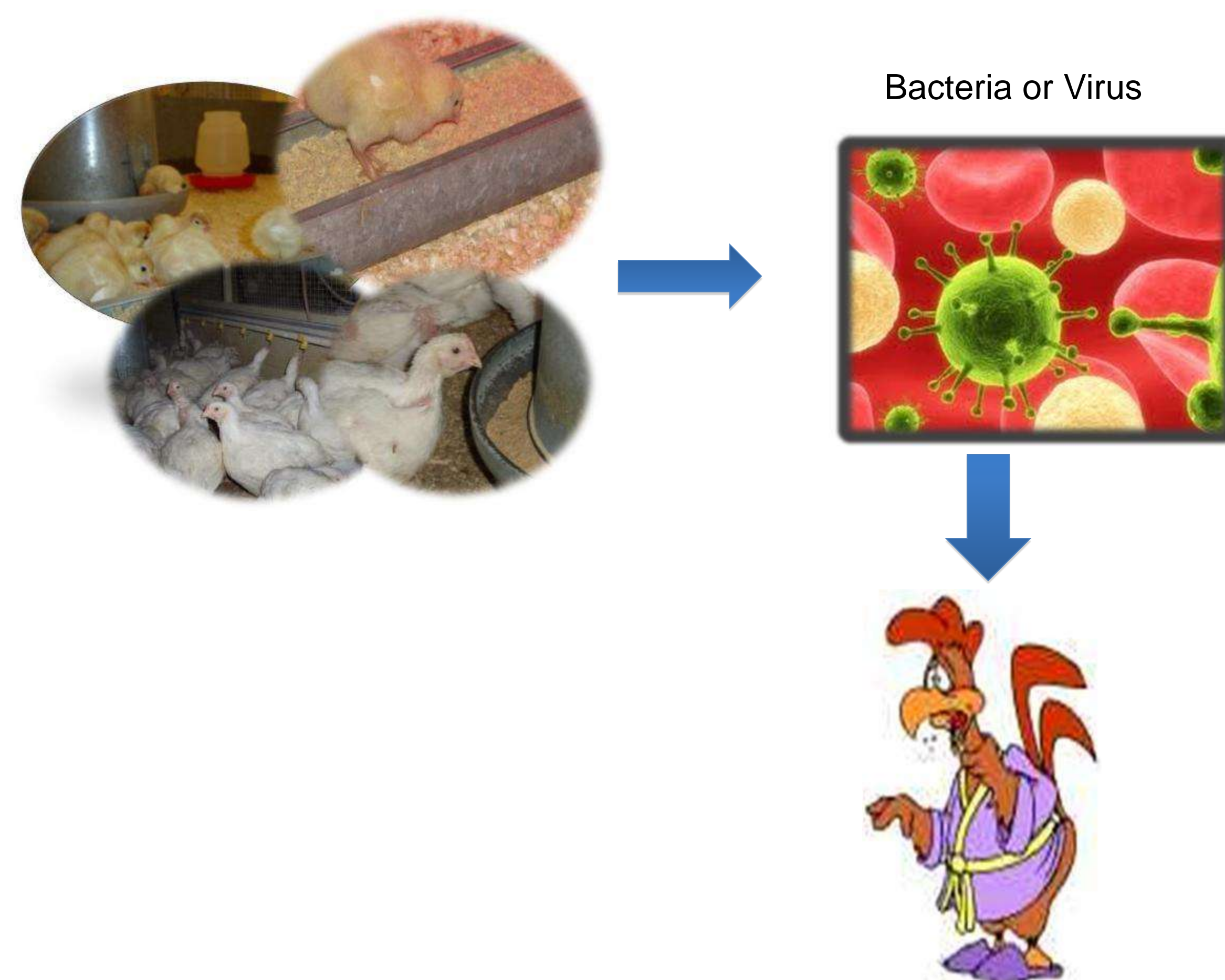
- What’s happening as bird ages?
- Can we learn from the past?
- Combination of nutrition and genetic approach?



Commercial vs unselected '77 and '57

## The Problem

- Innate immune response
- Immature at hatch
  - First line of cellular defense (non-specific)
  - Response causes inflammation, muscle loss and reduced growth rate

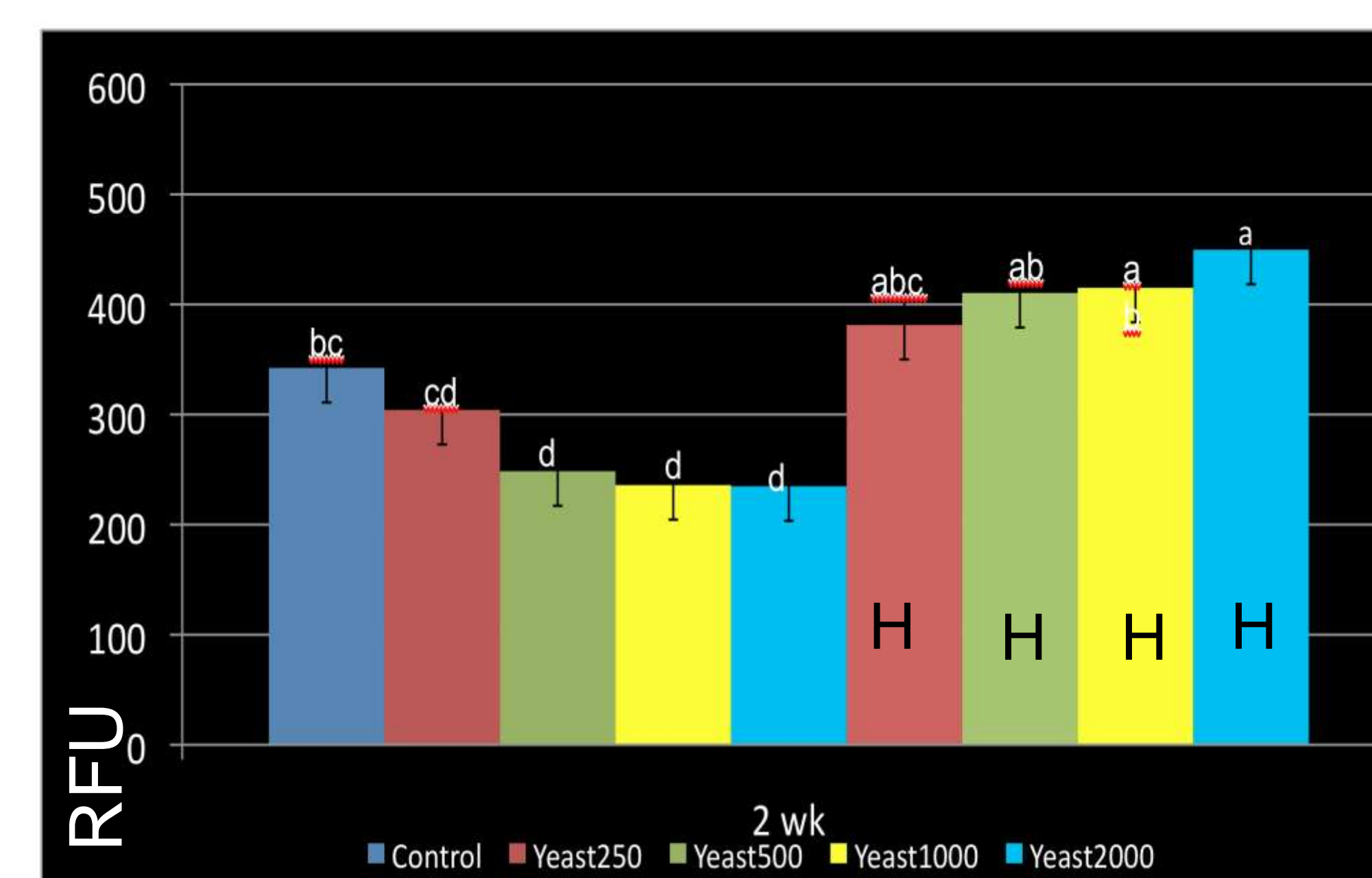


**% Phagocytosis.** *Can you find those pesky bacteria?*

- The ability of the innate immune cells to engulf at least one bacterium

**Phagocytic Capacity.** *How many bacteria can you fit in?*

- The capacity of the innate immune cells to engulf as many bacteria as they can.



## Relevance to Industry?

- Greater understanding of the birds immune system
  - Lead to discovery of novel techniques to manipulate the birds immune response
- Nutritional means of enhancing immune function
- Decrease reliance on medications
- Minimize production losses due to pathogen exposure
- Muscle development and mortalities

## Contact information

Jennifer Saunders-Blades: [js16@ualberta.ca](mailto:js16@ualberta.ca)

## Past/Current Supporters

