50 million and counting: HPAI in the US
Dec. 2014 to Present

Michele Walsh, DVM
State Veterinarian
Maine Department of Agriculture,
Conservation & Forestry
Why are we here?

- Largest FAD outbreak in US to date – **over 50 million** domestic birds have died or been euthanized

- IWG members were REALLY interested (BYP enthusiasts?)

- Strains from current HPAI outbreak = **NO ZOONOTIC POTENTIAL**
Bird flu and danger to humans

Bird flu, or avian flu, has a high mortality rate in birds but as of yet, can not be transmitted to humans.

Infection with type A virus

1. Most virulent bird flu viruses mutate rapidly, altering genetic material.
2. Humans infected with bird flu infect with live infected poultry.
3. Birds carry virus, excrete it in feces, dries, becomes pulverized and then be inhaled or taken in touch.
4. Humans have no immunity against this virus.

Reason for concern

Humans infected with bird flu could serve as a host for a new genetic subtype that can be transmitted from person to person. Might start influenza pandemic.
Quick history of HPAI in the Americas

- HPAI is considered a foreign animal disease (FAD) in the Americas

- HPAI outbreaks, 1983 – present:
  - Pennsylvania 1983-84 (17 million birds)
  - Mexico 1994-95 (Millions of birds)
  - Chile 2002 (2 million birds)
  - Canada & Connecticut 2004 (17+ million birds)
  - And British Columbia/US 2014-15 (PNW, Central, MS flyways…50 million birds & counting)
Impact to Date

HPAI Statistics, since Dec 2014

- 21 States affected
- 232 Positive premises (211 commercial, 21 BYF)
- 3,200 Responders
  - 160 APHIS employees
  - 200 State personnel
  - 2,900 Contractors
- $1 billion cost (response + indemnity)
- Losses from disease or depopulation represent:
  - 7.46% of U.S. turkey inventory
  - 10.01% of U.S. average layer inventory
  - 6.33% of U.S. average pullet inventory
  - < 0.01% of U.S. broiler inventory
- No new infections since 6/18/15, but…
Threat to New England - Migration
Where did it come from?

**AI Reservoirs**

Blue Wing Teal  Mallards

- AI naturally found in wild birds

- Not known to cause disease in its natural host ("low path")

- The complete host range is not known
Emergence of HPAI –

“typical” pattern

LPAI H5 or H7 virus transmitted to poultry

LPAI virus circulates in poultry with mild disease*

LPAI Virus Mutates to HPAI with severe disease
HPAI Detections in All Birds by Type (June 11, 2015)
How Poultry Disease Spreads

Farm 1
- People
  - Boots
  - Clothing
  - Handling

Farm 2
- Vehicles

Farm 3
- Poultry equipment
  - Filler flats
  - Hauling crates/coops
  - Feeder, waterers

Farm 4
- Vehicle/equipment
  - Manure spreader
  - Tractor
  - Truck
  - Front-end loader

Bird-to-bird
- Carcasses
- Manure
- Litter/debris
- Feathers
SUMMARY

No Human Component (yet)

BUT – Still this is a Big Deal.

Maine is preparing! (more on that later today)
BIG THANKS

• Maine’s Influenza Working Group
• USDA Colleagues (VS & WS staff)
• UMaine Extension Service
• The inimitable Maine Compost Team!

LUCTOR et EMERGO