



IOWA STATE UNIVERSITY
Veterinary Diagnostic Laboratory
1850 Christensen Drive
Ames, IA 50011-1134

VIRULENT NEWCASTLE DISEASE

Virulent Newcastle Disease (vND) is a fatal viral disease that affects the respiratory, nervous, and digestive systems of poultry. Formerly known as Exotic Newcastle Disease, this disease is highly contagious with many birds dying before presenting any clinical signs. Mortality rate increases to nearly 100 percent in unvaccinated poultry herds, but vaccinated herds can also be affected. Virulent Newcastle Disease is not a food safety concern.

Transmission and Prevention:

Newcastle Disease spreads when birds come into contact with the bodily fluids of sick birds; however, infected manure, egg crates, equipment, and people are potential vectors for spread. The development of and adherence to good biosecurity practices can help mitigate the spread of disease. This includes disinfecting equipment, washing hands, scrubbing/changing boots, and isolating any new birds for 30 days. There is no treatment for vND. Euthanasia is the only way to eradicate the disease.

Clinical Signs:

- Sudden death
- Sneezing, gasping for air, nasal discharge, coughing
- Greenish, watery diarrhea
- Swelling around the eyes and neck
- Decreased activity, tremors, drooping wings, twisting of head and neck, circling, complete stiffness

Current Outbreak Update:

A Newcastle Disease outbreak began in May 2018, and as of late, there have been over 380 confirmed cases of virulent Newcastle Disease in California and 1 case in Utah according to the USDA. In 2019 alone, approximately 85 farms have been confirmed vND positive. This includes small ranches and large commercial facilities.

It is recommended to contact your state official if you have concerns of suspected Newcastle Disease. By humanely euthanizing flocks, the US poultry industry is better equipped to eradicate and prevent further spread of the disease.

The ISU VDL offers:

vND ELISA – serum

Run Monday with same day results

AvPMV-1 – swabs

Run everyday with same day results

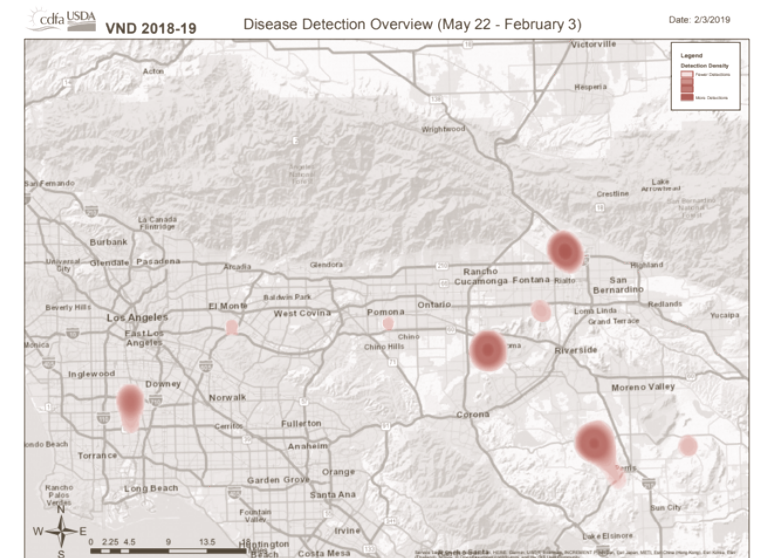
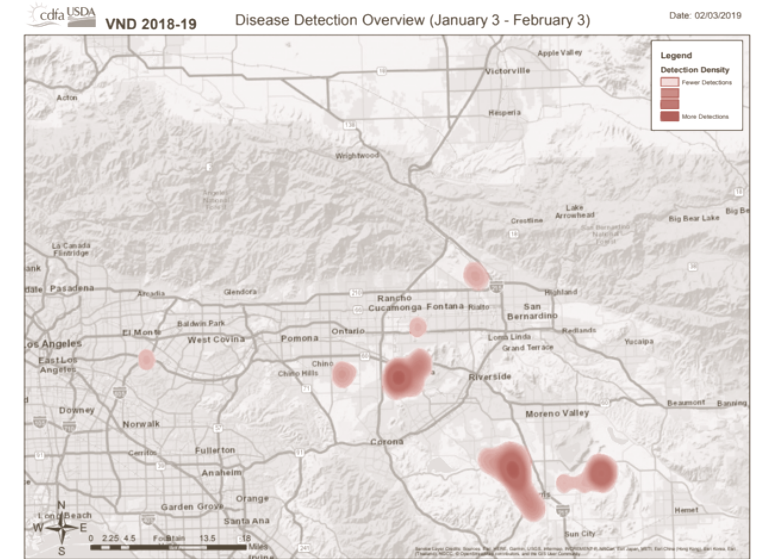


Photo Credit: California Department of Food and Agriculture; www.cdffa.ca.gov

VIRULENT NEWCASTLE DISEASE

MYCOTOXINS



Dr. Scott Radke Toxicology

Scott grew up on his family's farm in Aurelia, IA. He attended Buena Vista University and received his Bachelor's degree in 2012. He graduated with his Doctor of Veterinary Medicine degree in 2016 and his Master's (toxicology) in 2018 from Iowa State University. He now serves as a Clinical Assistant Professor in Veterinary Diagnostic Toxicology.

Scott started working in the ISU VDL in 2016 within the analytical services department with a focus in veterinary toxicology. He coordinates toxicology and nutrition associated cases and works closely with veterinarians and producers through field investigations. Scott also teaches veterinary toxicology to third and fourth year veterinary students within the ISU VDL and College of Veterinary Medicine.

Scott met his wife Kirsten while attending Buena Vista University. Both were collegiate athletes while also serving as teaching assistants in the science department. She is currently a Doctor of Physical Therapy in West Des Moines. Aside from spending time with family and friends, both enjoy being outdoors and love to camp, hike, kayak, fish, and hunt. One of their goals is to hike and camp in at least one national park each year.

Mycotoxins are toxic metabolites produced by fungi that are known to cause adverse health effects in animals. The prevalence of mycotoxins varies from year to year as weather patterns influence the production of specific mycotoxins. Other contributing factors to the production of these agents include insect damage and improper storage conditions. They are also not uniformly distributed in feeds leading to potential hot spots and making interpretation of feed analysis challenging. Ethanol by-products used in livestock rations typically possess elevated concentrations of mycotoxins, a result of the fermentation process. Clinical diseases caused by mycotoxins, known as mycotoxicoses, vary for each individual mycotoxin. Body systems affected and the ensuing clinical signs are dependent on the type of mycotoxin involved. The sensitivity to each mycotoxin varies among species.

Drought conditions during this past summer and a wet fall have brought about particular concern for aflatoxins and fumonisins. Both swine and equine losses have been associated with high

levels of fumonisins in feeds. Vomitorin has also been observed in elevated concentrations as a result of the wet harvest season. **Preventative strategies used to minimize mycotoxins include:**

- ✓ **Test suspect grains and feedstuffs** (Multiple representative samples may be required)
- ✓ **Store grains and feedstuffs in cool, dry, and low moisture environments**
- ✓ **Implement binding agents in rations**
- ✓ **Dilute contaminated feedstuffs in rations**
- ✓ **Eliminate animal access to contaminated feeds** (Feed contaminated material to alternate/less sensitive species, with caution)

Figure 1 and 2. Visible presence or absence of mold on grains, feed, and other feedstuffs is not a reliable indicator for the presence or absence of mycotoxins.



Mycotoxin	Aflatoxins	Fumonisin	Vomitoxin	Zearalenone
Source	Aspergillus flavus, Aspergillus parasiticus	Fusarium moniliforme, Fusarium proliferatum	Fusarium graminearum, Fusarium culmorum	Fusarium roseum, Fusarium moniliforme
Feed component	Corn, milo, cotton, seed, peanut	Corn and corn-based feeds	Corn, milo, wheat, rye, barley	Corn, wheat, barley, oats
Effects	Acute: liver damage and necrosis Chronic: anorexia, poor growth, anemia, ascites, steatorrhea	Horses: leukoencephalomalacia Swine: respiratory distress, pulmonary edema, reduced feed intake Ruminant: anorexia, mild weight loss Poultry: decreased weight gain, reduced growth, diarrhea	Swine: feed refusal, decreased weight gain Cattle: GI irritation	Swine: hyperestrogenism, nymphomania, anestrus, pseudopregnancy, reduced libido, retarded testicular development Cattle: irregular heats, embryonic loss

ANNOUNCEMENTS:

Upcoming University Holidays:

Memorial Day – Monday, May 27th

HATS will be receiving drop-offs as normal on Monday, May 27th.

ISU VDL Web Portal Update

Case Tags:

A new case level identifier, *Case Tags*, has been added on the ISU VDL submission forms and resulting diagnostic records. Case Tags provide another identifier by which submitters can identify, filter, or group case submissions. Case Tags are a user-defined field and can be up to 100 characters in length. Multiple Case Tags can be added to a case, separated by a comma.

In some instances, precise and consistent Case Tags may be desired for multiple submissions. The best way to achieve this level of consistency is by creating new electronic submissions from templates or cloning past web submissions.

Site Name
2654 - RODNEY HOME - SOW Add Edit Search

Address: 6298 470TH STREET
City, State & Zip: MARCUS, IA, 51035
County: CHEROKEE
Country: UNITED STATES
Phone Numbers:
Premises ID#: 00ABC14

Lot or Group ID: 12547
Source or Flow ID: ME-IA
Reference: Pre-Entry Testing
Case Tags: pre-ship swiffer, 16018

Premises Type (Best Description)
 Boar Stud
 Breeding Herd
 Collection Point (Slaughter/Market)
 Exhibition Center
 Farrow to Feeder/Finish
 Grow-Finish (or Wean to Finish)
 Isolation or Growing Replacement Stock
 Non-Commercial Livestock
 Nursery

Questions?

Please contact ISU VDL Client Services
515-294-1950 — isuvdl@iastate.edu

STAFF HIGHLIGHT