UCDAVIS VETERINARY MEDICINE
California Animal Health and Food Safety Laboratory System

CAHFS CONNECTION

LEADING DIAGNOSTICS NATIONALLY, PROTECTING CALIFORNIA LOCALLY • JULY, 2019

SPECIAL POULTRY EDITION

Backyard poultry resources at CAHFS and the University of California:

CAHFS is the backbone of California's warning system that helps to protect the health of California's livestock and poultry. As part of our mission, we offer a backyard poultry post-mortem examination program. For a fee of $25 you can submit up to two diseased and/or dead birds to any of the four laboratories (Davis, Turlock, Tulare or San Bernardino) for a post-mortem examination and full diagnostic work-up. You will receive a comprehensive report explaining the tests performed and the results obtained. Please keep in mind that for biosecurity reasons, animals that come to our laboratories cannot be returned to the owner.

The University of California's Cooperative Extension provides extensive resources for beginner and experienced poultry enthusiasts. Information on a variety of essential topics such as coop design, husbandry, management, nutrition, poultry veterinarians, etc. is available on their website.

Inside this issue:

VND Update

There have been no positive virulent Newcastle disease (vND) results for the past 58 days! The last positive result was on May 29, 2019. This is good news and indicates that there is light at the end of the tunnel.

If you have lost chickens or other birds due to vND, please keep in mind that you can have birds again in the future after a bird-free (fallow) period of a minimum 120 days and release of quarantine. Restocking is prohibited until written notification is received from the state veterinarian granting permission to restock. Please contact the California Department of Food and Agriculture (CDFA; 866 922-2473) if there are further questions.

Please continue to be vigilant and remember to follow CDFA's biosecurity guidelines for backyard and pet birds. Extensive surveillance efforts will be performed over the next few months to make sure there are no additional pockets of infection. As part of that effort, everybody is encouraged to submit dead or sick birds to any of the four CAHFS locations.

Common diseases of chickens

Although numerous infectious and non-infectious diseases and conditions have been diagnosed in backyard chickens in California, the most common are Marek's disease, ovarian cancer, salpingitis, peritonitis, salpingoperitonitis, mycoplasmosis, infectious bronchitis (IB), infectious laryngotracheitis (ILT), external parasitosis due to lice and mites, internal parasites due to round worms and tape worms and hemorrhagic fatty liver syndrome (HFLS).

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Lead in chickens. A year-long assessment (Oct 2015 to Sept 2016) of liver lead concentrations in chickens from backyard flocks found that approximately 3% (45) of the 1,476 tested liver samples had detectable lead concentrations ranging from 0.9 to 41 ppm. Twenty-two percent (10) of the positive birds had liver lead concentrations within a toxic range (> 8 ppm). Most birds had significant co-morbidities causing clinical signs and death. Positive birds came from urban, suburban and rural environments. Since the study was published, we continue to find backyard chickens exposed to lead. Unfortunately, sources are often not identified, but lead exposure is most likely due to the presence of lead from old lead-based paints that have degraded over time resulting in soil contamination. Two recent cases had liver lead concentrations of 5.1 ppm and 3.4 ppm, respectively which is considered very high. Lead-exposed birds can lay contaminated eggs and potentially present a health risk to people regularly consuming these products. Backyard chicken owners are advised to determine if there is a potential lead exposure hazard prior to placing birds in the home environment.

Severe dehydration and **yolk sac infection** was diagnosed in 6-day-old chicks submitted from a hatchery. *E. coli* was isolated from yolk sac cultures, and brain sodium levels were between 1900-2600 ppm (normal <1400ppm). Elevated sodium levels in the brain can occur due to severe dehydration in addition to salt toxicity. However, in this case salt levels in the feed were within normal limits, which suggests that the elevated sodium in the brain was due to dehydration.

Bilateral melanoma involving the ciliary body of both eyes was diagnosed in a 5-month-old backyard hen. The chicken had mild to moderate protrusion of the right eye for several weeks and the left eye had a discolored cornea. While chickens are susceptible to a variety of cancers, melanomas are exceedingly rare especially involving both eyes.

Marek's disease was diagnosed in two unrelated adult turkeys; a male Bourbon Red and a female Royal Palm. Necropsy revealed enlarged livers with a few small white nodules. The kidneys and spleens were enlarged, pale and mottled. Histopathology demonstrated infiltration of most organs with neoplastic lymphocytes, which were identified by immunohistochemistry as T-cells. Marek's disease virus serotype 1 was detected by PCR in livers.

An uptick in **Hemorrhagic Liver Syndrome (HLS)** cases has been seen over the past month. This syndrome, where the liver ruptures and bleeds-out causing sudden death, is a non-contagious, sporadic condition that may affect birds at any age. Multiple birds in one flock can be affected within a short period of time. The only associations found are obese body condition and (heat) stress. Thus, keeping lean birds and protection against the summer heat are some recommendations. Some ways to cope with the effects of high temperatures are providing good ventilation/fans in the coop as well as shaded areas, frozen watermelon, and gently spray cold water on the birds.

A **leiomyoma** was diagnosed in a 2-year-old Rhode Island Red hen submitted for necropsy. The hen had been depressed for several weeks and was found dead on the nest. At necropsy, a 4-5 inch diameter soft tissue mass with blood cavities was observed in the mesosalpinx. Visceral organs were congested, and fibrin, yolk, and membranous eggs had accumulated in the coelomic cavity. By histopathology, the mass was identified as a leiomyoma, which resulted in inflammation and poor circulation in coelomic organs.