Case Report: Egg Drop Syndrome in Broiler Breeders in the United States.

Hurst-Proctor, Sabrina*, Fulton, M.**, Gaydos, T.*
*Gaydos Technical Services, LLC
** Michigan State University Veterinary Diagnostic Laboratory

Egg Drop Syndrome - 1976 (EDS-76) is a disease of commercial laying poultry characterized by a drastic decrease in egg production, shell abnormalities, and shell-less eggs. The causative agent is Duck Adenovirus 1 (DAV-1). Egg Drop Syndrome is not reportable in the United States.This is the first case of EDS-76 known to the authors in broiler breeders in the US. A 35-week-old broiler breeder (708 x YP) flock in the United States was diagnosed with EDS-76 by PCR and HI. At the time of this case, there were a significant number of EDS cases in table egg layers in the general area. The broiler breeder flock experienced a significant egg production drop over a seven-day period, prompting the investigation. Upon farm investigation of the production drop, a significant number of shell-less and wrinkled eggs were noted. No increases in mortality nor respiratory signs were observed. The affected breeder farm consisted of 4 houses of approximately 10,000 hens a piece. Clinical signs of egg production drop and shell quality issues were noted first in house four at 34 weeks and the other houses followed at 36 (house 3), 39 (house 2), and 39 (house 1) weeks. Approximately one week after the first clinical signs, egg production reached its lowest point at 55% hen housed (HH) egg production compared to a target of 80%. Four weeks after initial clinical signs, production returned to 74% HH, approximately the breed standard egg production for the age. Hatching egg utilization was reduced for another 2 weeks after returning to standard egg production due to the number of thin shelled eggs. The other houses followed a similar pattern of egg production drop and return. Tracheas were submitted for detection of IBV and NDV; cecal tonsils and oviducts were submitted for IBV to rule out differential diagnosis that could cause shell abnormalities and egg production drops. Shell-less eggs were submitted for detection of EDS-76 by PCR. EDS-76 was detected by PCR at two separate laboratories. After PCR detection, serum was submitted for HI and was positive in the house with clinical signs but not the other houses. All houses seroconverted at approximately the time they returned to breed standard production. There were no other farms in the company’s system that observed similar production drops or clinical signs.

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