

## Egg Drop Syndrome (Adenovirus 127) in Layers

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Cage-free (4 flocks), colony cage (4 flocks) and organic (5 flocks) brown layers on three farms have been diagnosed with Egg Drop Syndrome (EDS). The etiology of EDS is a double-stranded DNA virus in the genus *Atadenovirus* of the Adenoviridae family and was first described in Holland in 1976 (Van Eck et al., 1976). The natural hosts are ducks and geese and the virus is considered endemic in wild waterfowl. Potential sources of the virus may be contact with waterfowl, and biosecurity lapses or contaminated water. Where the virus is known to be endemic in domestic poultry vertical transmission among breeders is of greatest concern and may lead to contamination of egg packing and/or vaccination supplies or needles. (Smyth, 2013)

The initial diagnosis in the affected flocks was based on clinical signs and hemagglutination inhibition (HI) serological testing. A molecular assay for duck adenovirus A (DAdV-A) developed by Swiss researchers (Schybli et al., 2014) was used to test pooled swabs collected from the cloaca and egg shell glands from three of the flocks that were positive by HI serological testing. DAdV-A was detected in both shell gland swabs and cloacal swabs. Surveillance by HI testing of over 30 additional flocks have been negative for antibody to EDS.

For affected flocks, production drops ranged between approximately 8% – 45%; some of the young flocks just coming into production failed to reach peak production. The eggs were pale-shelled, soft-shelled or shell-less. In addition to the drop in production, there was evidence of diarrhea. Mortality and water consumption were within normal limits, but feed consumption was decreased. There were minimal lesions found on necropsy examination. A watery, mucoid intestinal content was the most prominent lesion. Overall, the spread throughout these flocks was slow and continued over several weeks. Antibody surveillance continues and no further detections have been reported.

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Schybli, M., B. Sigrist, M. Hess, B. van Leerdam, R.K. Hoop, A. Vöglin. Development of a new real-time polymerase chain reaction assay to detect *Duck adenovirus A* DNA and application to samples from Swiss Poultry Flocks. *Journal of Veterinary Diagnostic Investigation.* 26:189-194. 2014.