Georgia Poultry Laboratory Network

The Chick Papers

A Monthly Newsletter from the Georgia Poultry Laboratory

October 2016

Using ELISA to Detect Adenovirus Antibodies in Chickens

By Brenda Glidewell and Dr. Louise DuFour-Zavala

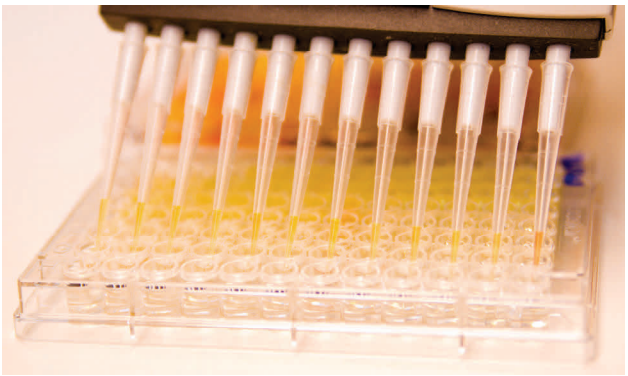
Adenoviruses are ubiquitous in the poultry environment and after birds are exposed, they develop antibodies. Some adenoviruses can cause disease if breeders are not exposed until after the onset of egg production and pass on the virus vertically to the progeny. Disease can also occur if the progeny is susceptible (no antibodies), or immunosuppressed and get exposed early in life. Very few Georgia companies vaccinate with an inactivated adenovirus vaccine, since breeders are very likely to be naturally exposed.

Although disease caused by adenovirus is rare in Georgia, it has less of a chance of happening when breeders have seroconverted when they start producing hatching eggs. Companies producing hatching eggs from chickens reared in environments other than Georgia, or reared in pullet houses that have been cleaned and have new shavings may want to make sure the breeders have seroconverted to adenovirus before 20 weeks of age—the same way it is done for AE and CAV.

Adenovirus antibody detection kit

The Fowl Adenovirus Group 1 Antibody ELISA Test Kit from BioChek detects antibodies to all twelve FADV serotypes found in Group 1. Comparison studies from various field cases suggest that the antibody detection by ELISA is at least as sensitive as AGID. Because it has greater than 98% specificity, the Group 1 Avian adenovirus ELISA antibody assay does not cross-react with EDS (Group III Avian Adenovirus) antibodies. The FADV ELISA kit will measure the amount of antibody to FADV Group1 in the serum of chickens.

How does the test work?



Microtiter plates have been pre-coated with inactivated FADV Group1 antigen. Chicken serum samples are diluted 1:100 and added to the antigen coated microtiter wells. Any anti-FADV Group1 antibodies present will bind and form an antigen-antibody complex. Non specific antibodies and other serum proteins are washed away following the binding period of 30 minutes. A conjugate consisting of goat anti-chicken IgG labeled with the enzyme alkaline phosphatase is then added to the wells and binds to any chicken anti-FADV Group1 antibodies bound to the antigen during the 30 minute incubation period. Another wash is performed to remove any unreacted conjugate. A pNPP chromagen substrate is then added to activate the bound conjugate. If antibodies are present, a yellow color develops and the intensity of the color is related to the amount of anti-FADV Group1 antibody present in the sample. The amount of antibody present is then converted to a titer, which is a quantitative measure of the level of antibody in the bird. Samples with a sample to positive ratio (S/P) greater than 0.5 are considered positive. This S/P correlates to a titer of 1071. So titers of 1071 are considered positive for antibodies to FADV Group1.

Tours and Visitors

- October 3-7: Pilgrims Mexico and Merial Mexico visit and tour
- October 7: Randy Ewers tour
- October 14: Wisdom Project meeting and tour
- October 20: Healan's Mill Fundraising Committee meeting
- October 26: South Korean Delegation tour
- October 27: Annette Williams, Luciana Belenton and Adilson Luis Belenton tour
- October 27: Romer Labs meeting and tour
- October 31—November 4: Dr. Nataniel Mendez and Dr. Angelica Lopez trained at the lab

Representatives from the Georgia Department of Economic Development toured the lab.

Left to right: Dr. Nataniel Mendez, Dr. Louise Dufour-Zavala and Dr. Angelica Lopez.

Left to right: Adilson Luis Belenton, Annette Williams, Len Chappell, Anita Hamrick, Glenda Stover and Luciana Belenton.

Delegates from South Korea toured the lab.

GPLN Events

Len Chappell at the Georgia National Fair in Perry, GA on October 10.

Dr. Anderson performed NPIP bleeding training for USDA at the Forsyth lab.

Left to right: Dr. Barend van Dam, Brenda Glidewell, Drew Carter and Jan Wesjohann at the BioChek Grand Opening in Ascot, UK.

Dr. Anderson giving a talk on biosecurity to backyard flock owners at the Sunbelt Expo in Moultrie, GA on October 17.

Left to right: Donna Jones, Selena York and Laura Thomas. They each won $25 gift cards for the scariest, most creative and cutest costumes at the GPLN Halloween Party on October 28.

Abit Massey and Mike Giles bringing their "sacrifices" to the GPLN Halloween Party.

Model Update

The Model Project is progressing well. The electrical connections for the operation of the trains is complete. This month we started working on the terrain with the guidance of David and Jeff with Train Installations LLC. We are using foam insulation to "carve" out mountains and rolling hills. With the help of David, Jeff, Bob Wheeler and the GPLN Model Committee, the landscaping of the diorama is starting to take shape.