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THE CHICK PAPERS

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Using the NDV-Fusion Protein ELISA for Antibody Detection following Vaccination with Recombinant Vectored NDV Vaccines

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One of the primary reasons for monitoring NDV antibody response is to confirm vaccination success.

Classic NDV vaccines are live attenuated whole virus vaccines. Vaccinating with those results in an antibody response to NDV viral proteins. The NDV plates are coated with whole virus, detecting that general antibody response to NDV live vaccines.

In contrast, vector vaccine technology is based upon inserting a part of the genome of the NDV virus into the DNA of a carrier vaccine (e.g. HVT) to induce protection for both NDV and HVT pathogens using the replication route of the carrier, HVT. Recombinant HVT ND vaccines contain the fusion (F) gene that codes for the NDV fusion protein, and not the whole virus, resulting in a specific antibody response against only part of the NDV virus proteins. Because current (standard) whole virus coated ELISA plates contain a fairly low amount of binding sites that specific to antibodies directed against the F protein, sensitivity is reduced. By coating the ELISA test plate with the targeted NDV F- protein, the sensitivity of the assay is increased for detecting the antibody response specifically against the recombinant vaccine target F-protein.

To show this increased sensitivity of the NDV-F ELISA kit, titers can be compared to the current NDV ELISA titers using the same samples. The Chart below shows the average titer of birds tested at 2, 4, 6 and 8 wks post vaccination with a recombinant vaccine on the BioChek NDV-F kit (NDV-F) and the BioChek Indirect ELISA (NDV) as well as the % positive samples at each age. With the titers as high as ~18,000 on the NDV-F versus ~3,000 on the NDV, the difference seen is quite significant.

It was also observed in this particular trial comparison that the NDV-F detected antibodies produced by the birds to vaccination with the recombinant vaccine 10-14 days earlier than the current NDV ELISA test.

Combining the conventional NDV ELISA with the NDV-F ELISA provides the tools needed to confirm not only the success of the NDV vaccination (using the NDV-F ELISA kit) but also to monitor for possible field challenge (using the standard indirect NDV ELISA kit).

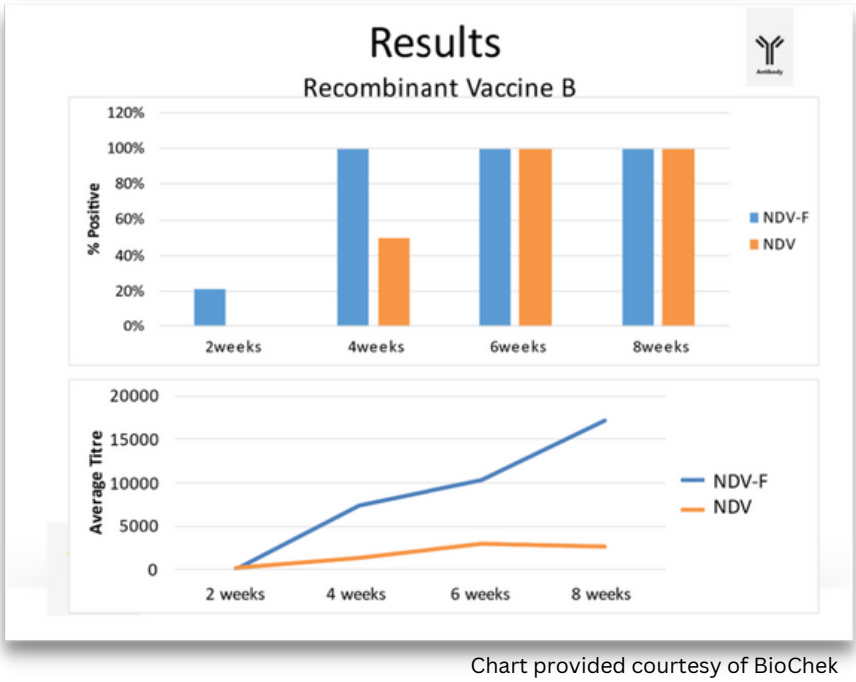

Chart provided courtesy of BioChek

Dr. Linda purvis brought her UNG class for a tour at the beginning of February.

Georgia Department of Agriculture, along with representatives from the U.S. Department of Defense and Homeland Security visited the lab this February.

Our international visitors this month were from The United Kingdom. The Department of Environment, Food, & Rural Affairs (DEFRA) visited the lab and were accompanied by the NPIP team from the national office.

We always enjoy sharing about the poultry industry and our role within it with youth! This time is was with Elbert County 4-Hers.