

# The Case for Proper NDV Vaccination and Monitoring

From 2018-2019 we detected Newcastle Disease Virus (NDV) in many turkey flocks suffering from respiratory disease. Newcastle disease virus isolated from these flocks was typed as low virulent NDV.

**Most flocks younger than 10 weeks of age have inadequate and late immunity against Newcastle disease.** A review of antibody titers against Newcastle disease from turkey serum tested at the Minn. Poultry Testing Laboratory for three different years (2013, 2016, & 2019) is shown in Figure 1 (n=1336). Commercial ELISA geometric antibody titers (GMT) are compared for turkey flocks at different ages. Most flocks that are  $\leq 10$  weeks of age had no detectable antibody titers. Many of these flocks were vaccinated against Newcastle disease at least once starting at 3 weeks of age. This clearly shows vaccination failure in these flocks.

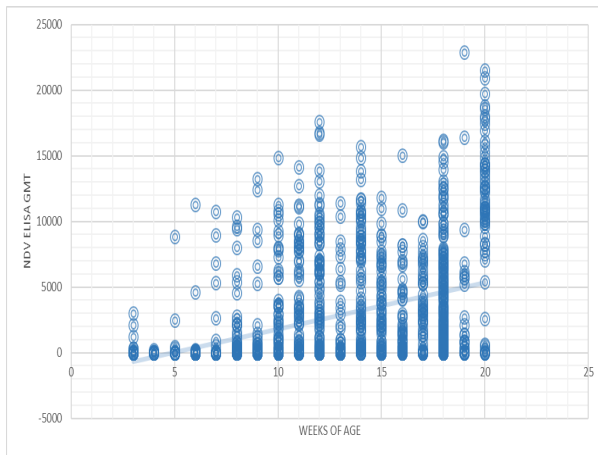


Figure 1. Scatter plot of Newcastle disease virus ELISA geometric-mean titers at different age groups for 1336 turkey flocks during 2013, 2016, & 2019.

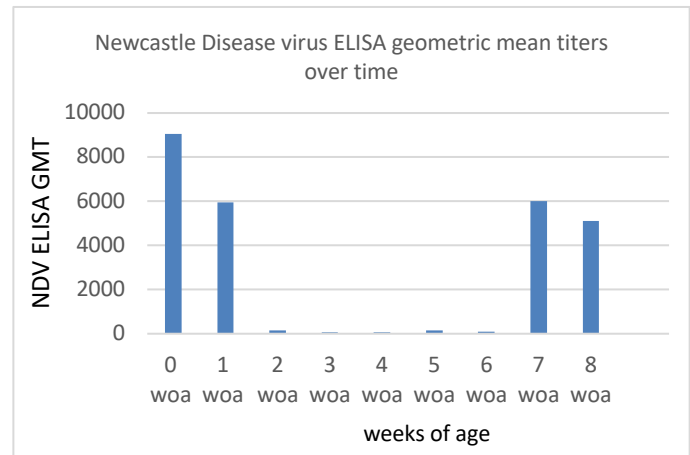


Figure 2. Newcastle disease virus antibody ELISA of turkeys vaccinated at 3 weeks of age with Newcastle disease vaccine via eye drop

**Turkeys respond well to Newcastle disease live vaccine.** Our side-by-side comparison of vaccinated and unvaccinated turkey poults showed strong seroconversion by four weeks post-vaccination when NDV vaccine is properly administered as shown in Figure 2. Producers need to evaluate whether their vaccination programs are working.

**Recommendation.** We recommend choosing the most effective method of vaccine administration. If the conditions for in-water vaccination may result in vaccination failure, other methods of application may give more effective vaccine response (immunity). Vaccination efficacy and proof of immunization success can be monitored by serological testing of blood samples from the vaccinated flock 2-3 weeks after vaccination. It is a good practice to evaluate the success of the vaccination for all of the vaccines given at the end of the brood period. Improperly low or absent immunity can then be adjusted by repeated vaccination.

**Contact:** Saad Gharaibeh, BVM, PhD, Dip ACPV, the poultry pathologist at the Minnesota Poultry Testing Laboratory in Willmar, MN can help you develop monitoring protocols to determine whether your Newcastle Disease virus vaccination program is working as expected. Contact him at 320-231-5170.

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