

# Serological response of white and brown pullets for egg drop syndrome (EDS) virus and avian rhinotracheitis (ART) virus after injection with 2 different inactivated vaccines in the Netherlands

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## > INTRODUCTION

Layer-specialized hatchery Verbeek, located in the Netherlands, is one of the biggest of its kind in Europe. Verbeek provides pullets for the Dutch layer industry, but also supplies other countries within the European Union with 18-week-old pullets. To get the best production results, optimal protection against endemic diseases is necessary. Together with a tailored vaccination program, all pullets are vaccinated at least once with a commercial inactivated vaccine containing multiple antigens. To demonstrate and evaluate vaccination efficacy, a monitoring system using serological titers for Egg Drop Syndrome (EDS) virus and Avian Rhinotracheitis (ART) is used.

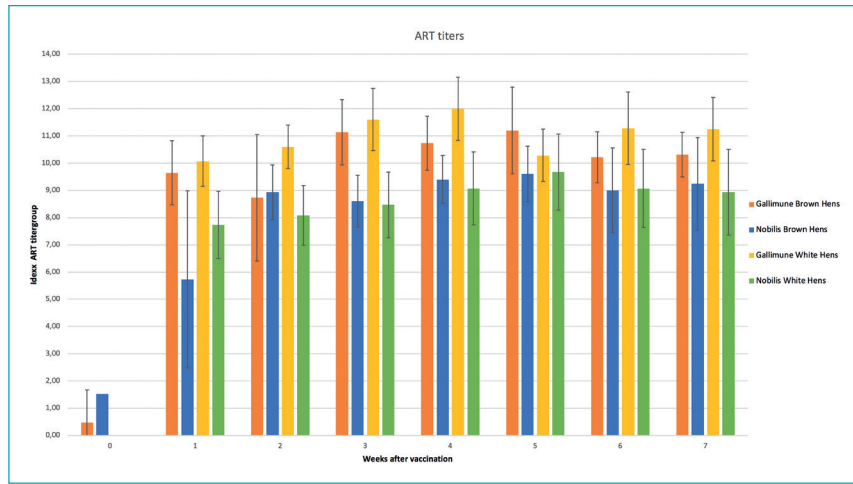
The objective of this study was to compare serological responses in field conditions and generate baseline data to use in vaccination monitoring. Pullets were vaccinated with either one of two inactivated vaccines containing 4 different antigen strains against Infectious Bronchitis (IB), Newcastle Disease (ND), ART and EDS (GALLIMUNE<sup>®</sup> 407 or NOBILIS<sup>®</sup> RT+IBmulti+ND+EDS).

## > MATERIAL & METHODS

Thirty (30) Novogen White and 30 Novogen Brown Light pullets were vaccinated on day 52 via spray with a live attenuated ART virus Subtype B (NEMOVAC<sup>®</sup>). Per veterinary prescription at 12 weeks of age, 15 brown and 15 white pullets were injected with GALLIMUNE<sup>®</sup> 407. The other 15 brown and 15 white pullets received the NOBILIS<sup>®</sup> vaccine. Blood was taken from the pullets the day of injection and every week afterwards through week 7. The samples were examined for presence of ART antibodies via IDEXX ELISA and for presence of EDS antibodies via BioChek ELISA. IBM SPSS Statistics v23 was used for statistical analysis.

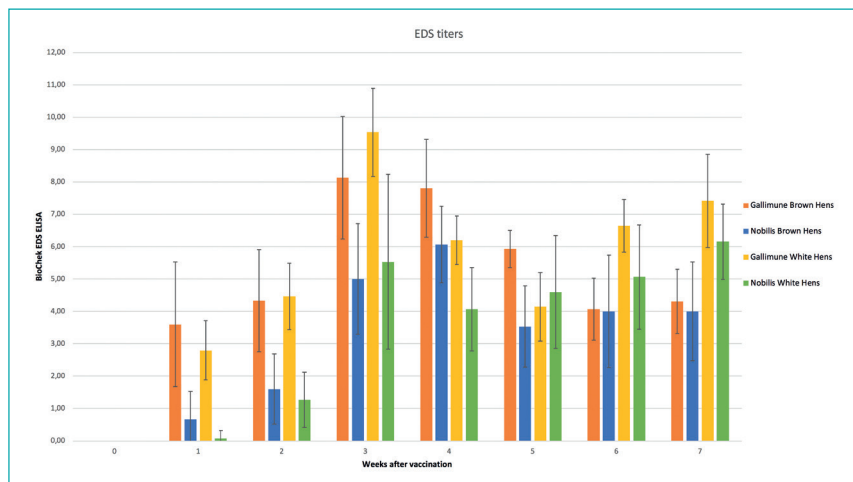
## > RESULTS

In most cases the antibody response for ART was significantly better when using GALLIMUNE<sup>®</sup> 407 vaccine (**Figure 1**).



**Figure 1.** ART antibodies after vaccination

For EDS the increase in antibody titers clearly differed between the white and brown pullets. In the first 3 weeks after vaccination hens that received GALLIMUNE® 407 showed the highest titers with the white hens showing the strongest overall response (**Figure 2**).



**Figure 2.** EDS antibodies after vaccination

> DISCUSSION & CONCLUSION

The significantly higher titers for ART in the GALLIMUNE® 407 vaccinated pullets are most likely explained by the use of the live spray vaccination with ART subtype B together with an inactivated vaccine of again subtype B. The NOBILIS® vaccine contains inactivated ART virus of Subtype A.

The only way to proof a good vaccine take for both GALLIMUNE® 407 and NOBILIS® RT+IBmulti+ND+EDS is showing serological titers for EDS as there is no priming for EDS. Based on this results we can conclude GALLIMUNE® 407 is the best choice to proof vaccine take based on the serological response in the BioChek ELISA for EDS shortly after vaccination.

> KEYWORDS

Egg Drop Syndrome, Avian Rhinotracheitis, inactivated vaccination, vaccine take, serology.