

THE EFFECT OF OREGO-STIM ON VACCINE EFFICACY IN BROILERS

SUMMARY

- ✓ The humoral immune response is an essential part of defence against diseases which cause mortality, morbidity and reduced production, and subsequent economic losses (Ismail, 2018).
- ✓ Orego-Stim enhanced the immune response of broilers following Newcastle disease virus (NDV) vaccine.
- ✓ This work is part of the Anpario's 4R approach (Review, Reduce and Replace antimicrobials Responsibly) which helps manage gut health and support healthier livestock through the use of natural products.

BACKGROUND

- ✓ Heterophils and monocytes are vital avian immune cells, which are responsible for pathogen control by phagocytosis (engulfment and removal of pathogens and cell debris) (Rosales and Uribe-Querol, 2017).
- ✓ In this study, the NDV vaccine was used as a model for active immunity and results indicated birds had an improved 'readiness' for vaccination when offered Orego-Stim, helping to aid resilience toward disease pressures.
- ✓ Orego-Stim is a high quality eubiotic containing 100% natural oregano essential oil.

TRIAL DESIGN

An independent trial was conducted by Aristotle University of Thessaloniki, Greece, using 480 male Ross 308 chicks from 0 to 42 days old. This work was part of a larger study investigating growth and immune performance of birds fed Anpario products. Birds were randomly allocated to either Control, or Orego-Stim (300g/t) treatment groups, with 8 replicates per treatment (30 birds per pen). All birds were vaccinated against Newcastle disease on day 12. Blood samples were collected and analysed for antibody titres 30 days after NDV vaccination. Analysis of innate immune functions for phagocytosis testing were performed using blood serum samples from 3 birds per pen according to Seifert et al. (2011). Feed and water were provided *ad libitum*.

RESULTS

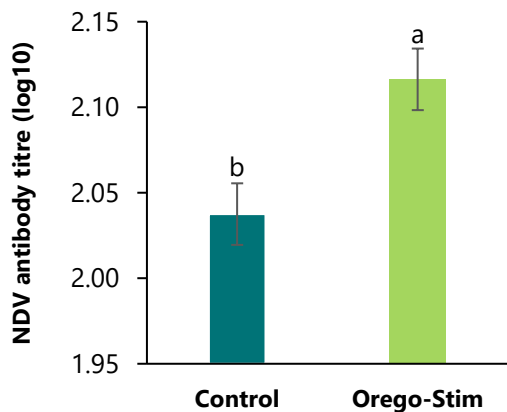


Figure 1. Effect of Orego-Stim on NDV antibody titre, 5 weeks post vaccination. ^{ab} Superscripts that differ denote significant differences at $p < 0.01$

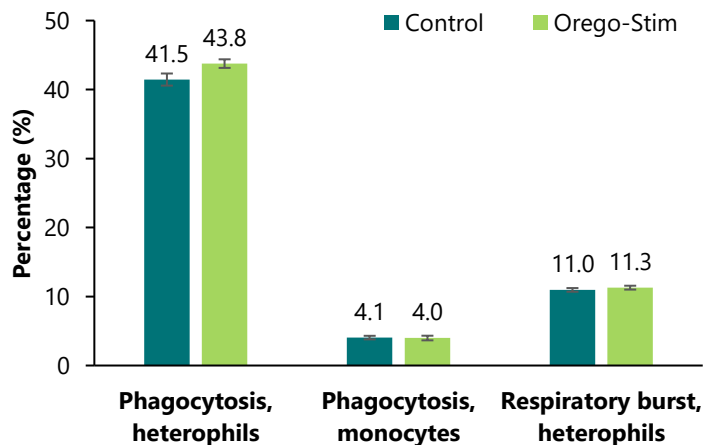


Figure 2. Effect of Orego-Stim on Immune functions. No significant differences, $p > 0.05$. Phagocytosis, the percentage of phagocytic-active cells. Respiratory burst, the percentage of burst-active cells. Burst-active cells are cells releasing free radicals (ROS), which is part of the immune response.

- ✓ Antibody production against NDV was increased in birds fed Orego-Stim versus birds from the control group (Figure 1).
- ✓ Immune function, including phagocytic activity and respiratory burst, was maintained suggesting no negative affect of Orego-Stim or differences in immune challenge of birds in the study (Figure 2).
- ✓ Orego-Stim can provide a natural tool to improve readiness for vaccinations and aid bird resilience to disease challenge.

