

## OREGO-STIM SUPPORTS A LOWER WORM BURDEN IN FREE RANGE EGG PRODUCTION

### SUMMARY

- ✓ Gastrointestinal parasitic worms (helminths) are a concern for the poultry industry, as they can affect bird health, welfare and production performance.
- ✓ This trial was conducted to determine the effect of Orego-Stim Powder on helminth worm burdens during rearing and/or lay in a free range egg production system.
- ✓ Supplementation of Orego-Stim Powder in pullet and layer diets helped to reduce mean counts of roundworm (*Heterakis gallinarum* and *Ascaridia galli*) and reduce the presence of tapeworms.
- ✓ Orego-Stim may help to reduce the risk of intestinal worms within free range production systems.

### BACKGROUND

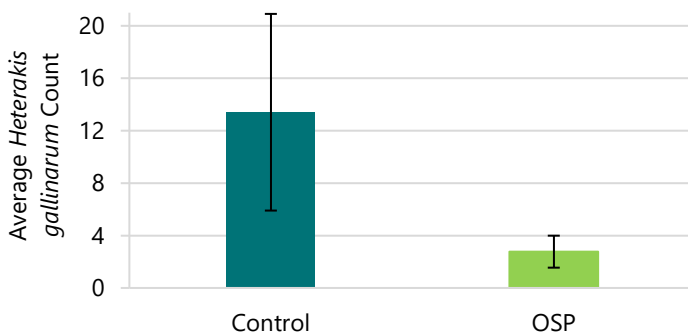
- ✓ Gastrointestinal parasitic worms (helminths) are a concern for the poultry industry, as they can affect bird health, welfare and production performance.
- ✓ Roundworms (nematodes) are most concerning due to their effect on poultry health, the abundance of pathogenic species and economic impact. Roundworm infection is associated with reduced health and welfare, poor feed efficiency, weight loss, reduced egg production and quality (including worm colonisation in eggs), and in severe cases, death. Tapeworms (cestodes) are also a common cause of infection.
- ✓ Previous research (Permin *et al.*, 2010) has confirmed that free range and backyard egg production systems have a higher risk of worm infections and that prevalence may also be greater in deep litter systems.
- ✓ Orego-Stim Powder (OSP) is a high quality eubiotic composed of 100% natural oregano oil (OEO). Natural OEO has many properties including antimicrobial, antioxidant, anti-inflammatory and immunomodulatory functions, and has been shown to support healing and repair of the gut lining.

### TRIAL DESIGN

A trial was conducted in collaboration with North Carolina State University at the Piedmont Research Station in 2019, to determine the effect of OSP on worm burdens during rearing and/or lay in a free range egg production system. 540 Bovans Brown hens were randomly assigned to one of three dietary groups; a basal diet fed during rear and lay (Control), OSP included at 300g/t during lay only or OSP included at 300g/t during rear and lay. Each group had 3 replicates per treatment and 60 hens/replicate. Pullets were brooded and reared on floor/slats to 12 weeks of age. They were then allowed on range through to 16 weeks of age, and during the laying phase from 17 to 41 weeks of age. Ten hens per replicate were sampled for roundworm (*Ascaridia galli* and *Heterakis gallinarum*) prevalence and enumeration, and for the presence or absence of tapeworms, at 16 and 41 weeks of age (study termination).

### RESULTS

#### OREGO-STIM DURING REARING



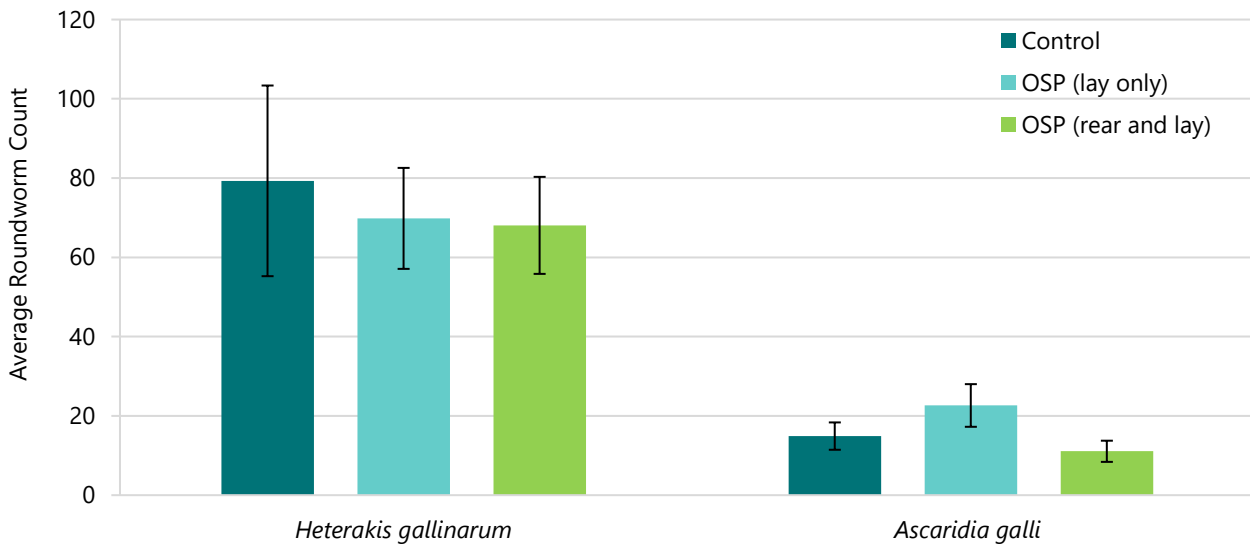
- ✓ Pullets fed Orego-Stim during the rearing phase had a lower mean count of *Heterakis gallinarum* compared to the control group (Figure 1).
- ✓ No *Ascaridia galli* or tapeworms were found in the birds at 16 weeks of age.

**Figure 1.** Average *Heterakis gallinarum* count in pullets at 16 weeks of age ( $p > 0.05$ ).



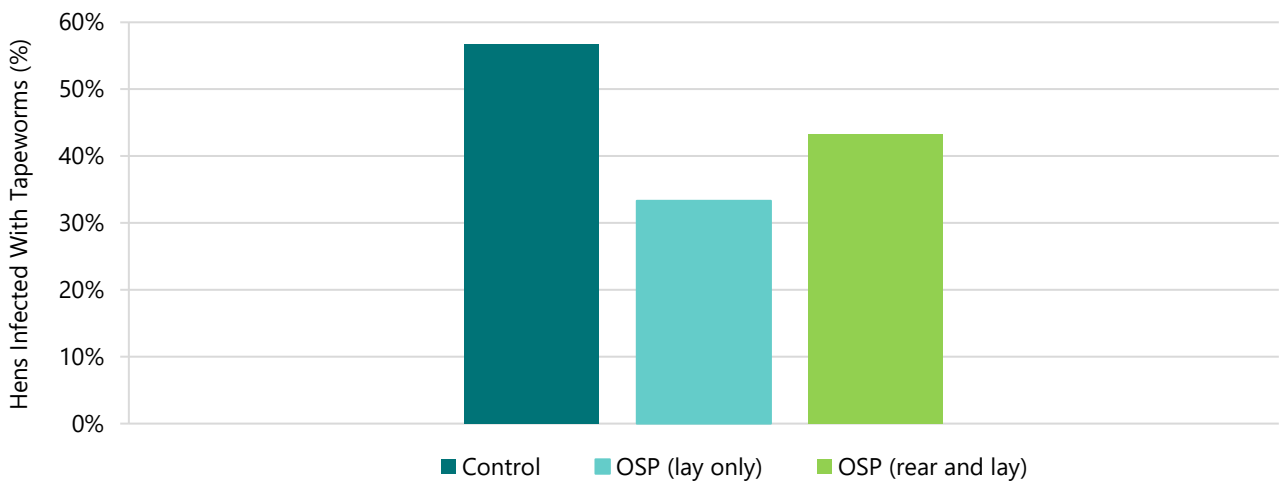


### OREGO-STIM DURING LAY



**Figure 2:** Average *Heterakis gallinarum* and *Ascaridia galli* counts in laying hens at 41 weeks of age ( $p>0.05$ ).

- ✓ Hens fed Orego-Stim had a lower mean count of *Heterakis gallinarum* at 41 weeks of age compared to the control (Figure 2).
- ✓ Hens fed Orego-Stim during rear and lay had a lower mean count of *Ascaridia galli* at 41 weeks of age.



**Figure 3:** Tapeworm infection in laying hens (%) at 41 weeks of age.

- ✓ Tapeworm infections were lower in hens fed Orego-Stim, either during lay only or during both rear and lay (Figure 3).
- ✓ The relative risk of tapeworm infection was reduced by up to 54% in hens fed Orego-Stim ( $p=0.0693$ ).

In summary, the inclusion of Orego-Stim Powder in pullet and layer diets may help reduce the risk of intestinal worms within free range production systems.

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