

OREGO-STIM SUPPORTS BROILER PERFORMANCE DURING COCCIDIAL CHALLENGE WITH VACCINATION

SUMMARY

- ✓ Orego-Stim did not interfere with anticoccidial vaccine immunity as shown by lesion scores and bird performance when vaccine and Orego-Stim were used simultaneously.
- ✓ Orego-Stim either on its own or in combination with vaccine assisted birds to achieve their potential following periods of intestinal stress such as coccidiosis challenge.

BACKGROUND

- ✓ Coccidiosis is a common issue for broiler producers worldwide and is estimated to result in global costs of \$2-3 billion annually (Williams 1999; Zhang *et al.* 2013).
- ✓ Coccidial infection, and to a lesser extent coccidial vaccination, can significantly damage the gut wall lining. This can lead to the development of lesions which results in impaired nutrient absorption and ultimately impacts broiler health and performance.
- ✓ Orego-Stim is a high quality, phytogetic eubiotic, containing 100% natural oregano essential oil.

TRIAL DESIGN

A study was conducted at Southern Poultry Research Inc, Georgia, USA in order to determine the effect of Orego-Stim on broiler performance and on coccidial immunity when challenged with an *Eimeria* infection. Broilers (Cobb 500) were reared from 1-42 days in floopenns on reused litter at a stocking density of 4 birds/m². On Day 21, 5 birds/pen were transferred to cages for challenge and 6 days later euthanased for lesion scoring. Fresh faecal samples were collected from each pen on Days 7, 14, 21, 28, and 35 for *Eimeria* enumeration.

Treatment	Floor pen		Coccidiosis challenge ¹	
	No. birds	No pen	No. birds	No cages
Positive control (cage-reared, coccidiosis free) [POS]	-	-	5	8
Salinomycin (BioCox 60, 60ppm) [SAL]	25	9	5	9
Orego-Stim (450 g/t) [OS450]	25	9	5	9
Coccivac-B52 ^{2,3} [V]	25	9	5	9
Coccivac-B52 ³ + Orego-Stim (150 g/t) [V+OS150]	25	9	5	9
Coccivac-B52 ³ + Orego-Stim (300 g/t) [V+OS300]	25	9	5	9
Coccivac-B52 ³ + Orego-Stim (450 g/t) [V+OS450]	25	9	5	9

¹ Approximately 100,000 oocysts *E. acervulina*, 75,000 oocysts *E. maxima* and 50,000 oocysts *E. tenella* per dose; ² Merck Animal Health, USA; ³ Hatchery vaccination at day-old.





RESULTS

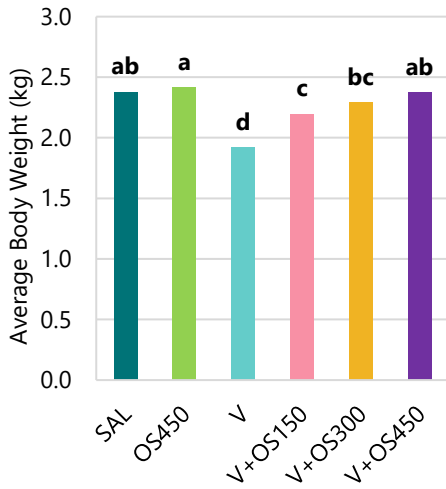


Figure 1. Average body weight of broilers at 42 days of age (kg). Differing letters (a-d) indicate significant difference ($p < 0.05$).

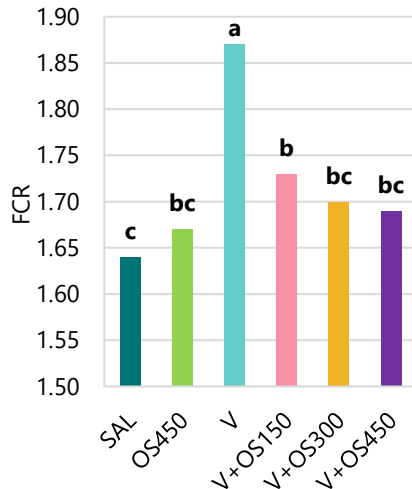


Figure 2. Feed Conversion Ratio (FCR) 0-42 days. Differing letters (a-c) indicate significant difference ($p < 0.05$).

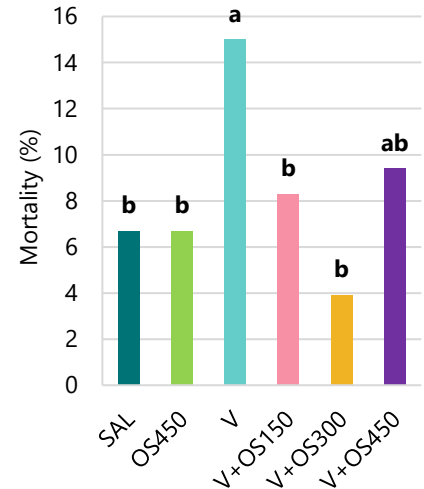


Figure 3. Average mortality (%). Differing letters (a-b) indicate significant difference ($p < 0.05$).

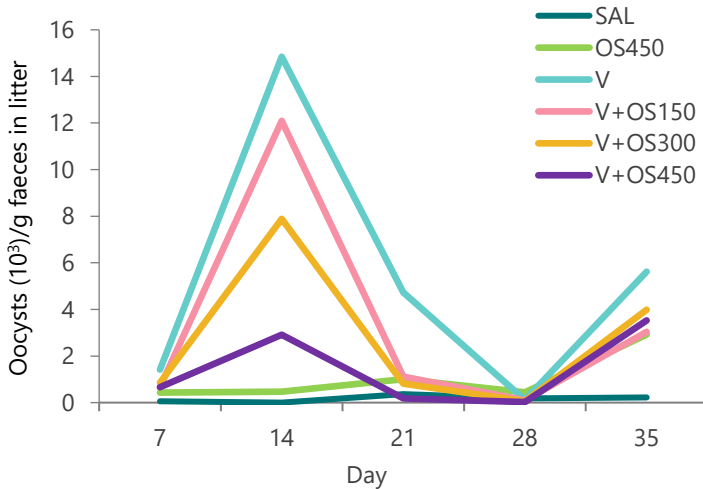


Figure 4. Litter coccidia counts from day 7 to day 35.

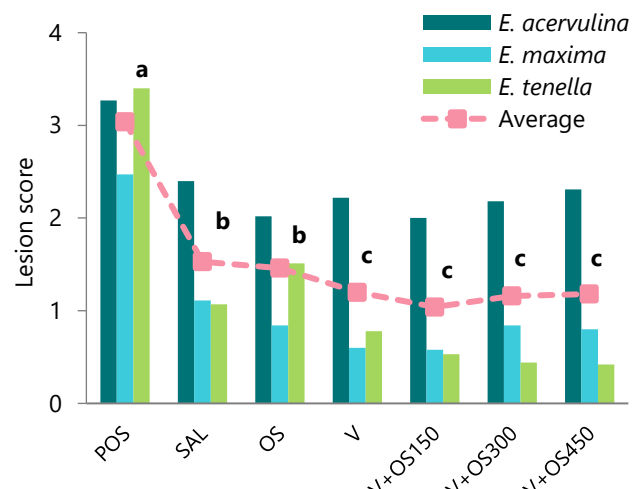


Figure 5. Lesion scores following Eimeria challenge. Differing letters (a-c) indicate significant difference ($p < 0.05$).

- ✓ All Orego-Stim treatments improved final broiler body weight (Fig. 1), FCR (Fig. 2) and reduced mortality (Fig. 3) compared to anticoccidial vaccination alone.
- ✓ As levels of Orego-Stim were increased, the peak in oocyst output at day 14 decreased (Fig. 4).
- ✓ Salinomycin and Coccivac both reduced gut lesions substantially, most markedly for the mid and lower gut (Fig. 5).
- ✓ Orego-Stim at any inclusion level did not appear to interfere with the immune response stimulated by the vaccine as observed by similar lesion score between all vaccinated groups (Fig. 5).
- ✓ Orego-Stim can assist the bird in coping with intestinal stress and help the bird to achieve genetic potentials during periods of coccidial challenge.

