Research Notes P-42

Arm & Hammer Animal Nutrition

CELMANAX supplementation in diets protected broilers from a moderate coccidiosis challenge

CELMANAX™ is a multicomponent, all-natural feed supplement containing Refined Functional Carbohydrates™ (RFC™) that has Generally Recognized as Safe (GRAS) status as a feed ingredient.

STUDY OVERVIEW

- The purpose of the study was to evaluate the effect of CELMANAX supplementation on broiler performance when facing a mild coccidiosis challenge caused by *Eimeria* (*E.*) spp.
- 500 chicks were randomly assigned in 8 replications to 12 treatments with 10 birds/pen in a 4x3 factorial arrangement as shown in Table 1.
- Efficacy was evaluated by measuring body weight, feed intake, feed conversion and intestinal lesion scores.

TABLE 1 4x3 Trial Setup

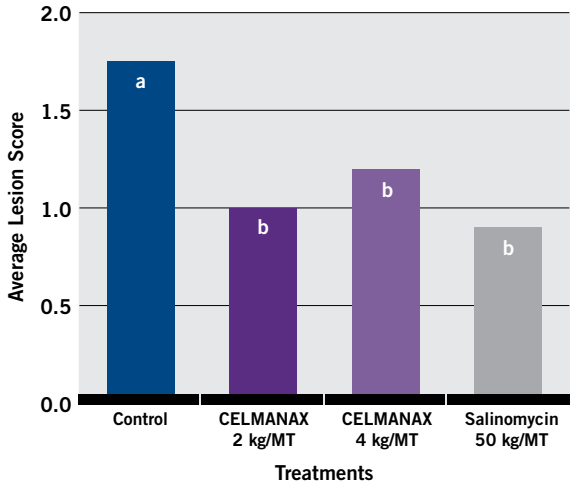
Control (no treatment)	Non-challenged	31,000 *E. tenella* oocysts/bird	37,500 *E. acervulina* oocysts and 25,000 *E. maxima* oocysts/bird
CELMANAX, 2 kg/MT	Non-challenged	31,000 *E. tenella* oocysts/bird	37,500 *E. acervulina* oocysts and 25,000 *E. maxima* oocysts/bird
CELMANAX, 4 kg/MT	Non-challenged	31,000 *E. tenella* oocysts/bird	37,500 *E. acervulina* oocysts and 25,000 *E. maxima* oocysts/bird
Salinomycin, 50 g/MT	Non-challenged	31,000 *E. tenella* oocysts/bird	37,500 *E. acervulina* oocysts and 25,000 *E. maxima* oocysts/bird

RESULTS

E. tenella challenge:

- CELMANAX and salinomycin significantly decreased lesion scores ($P<0.001$) compared to the untreated challenge control (Figure 1).
- Broiler performance was not affected by any treatments.

FIGURE 1: *E. tenella* Lesion Score



[a,b] Means are statistically different ($P<0.001$) by Tukey's mean separation test

E. maxima and *E. acervulina* challenge:

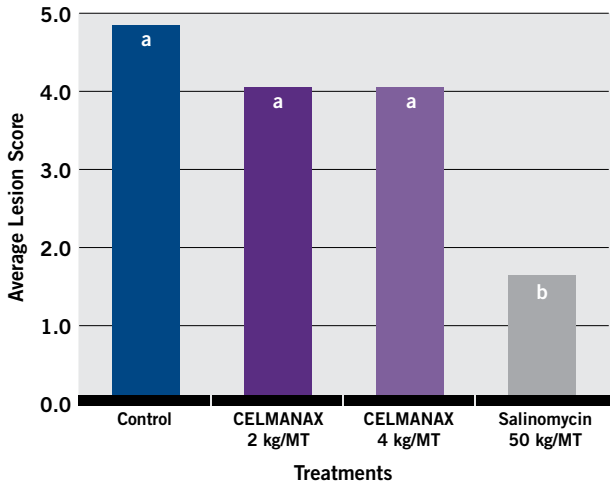
- Salinomycin significantly decreased lesion scores ($P<0.001$) while CELMANAX™ numerically decreased lesion scores compared to challenge control (Figure 2).
- Salinomycin significantly improved broiler performance while CELMANAX had no effect on broiler performance.

The non-challenged treatments with CELMANAX performed well and had numerically improved weight gain compared to the control, non-challenged group (Figure 3).

CONCLUSION

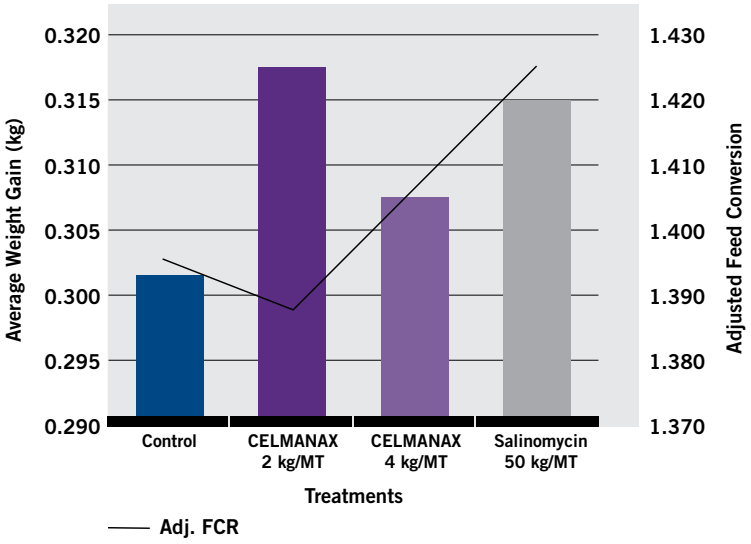
- CELMANAX appeared to have performance improving properties when fed to non-challenged broilers.
- CELMANAX showed significant efficacy against *E. tenella* but not against *E. maxima* and *E. acervulina* challenge.

FIGURE 2: *E. maxima* and *E. acervulina* Lesion Score



[a,b] Means are statistically different ($P<0.001$) by Tukey's mean separation test

FIGURE 3: Performance Data Non Challenged



Differences not significant

Animal Nutrition

Jalukar S, Oppy J, Davis S. Effect of enzymatically hydrolyzed yeast supplementation on performance and in protecting broilers against a mild coccidiosis challenge. Joint ASAS/ADSA meeting, 2008.