

**ABSTRACT** ([Poult. Sci. 98 \(E-Suppl. 1\)](#)):

**T178 Comparative effects of a xylanase-direct-fed microbial feed additive and a commercial coccidiostat on live performance, intestinal and environmental pathogens, and apparent metabolizable energy of broilers fed corn-soy-based diets and challenged with *Clostridium perfringens* and *Eimeria* spp.**

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The detrimental impact of pathogenic microorganisms and ingredient antinutritional factors on production yield offers the opportunity for a multifaceted feed additive alternative to traditional prophylactic antimicrobials. A study was conducted to compare the efficacy of EnzaPro® (EP; BioResource International), a proprietary blend of *endo*-1,4- $\beta$ -xylanase (100,000 U/g) and multi-strain *Bacillus* spp. direct-fed microbials (109 CFU/g), to a commonly used coccidiostat when supplemented to corn-soy-based diets on the live performance, pathogen load, and nitrogen-corrected apparent metabolizable energy (AMEn) of broilers challenged with *Clostridium perfringens* and *Eimeria* spp. 1,560 day-old mixed-sex Ross 708 broiler chicks were assigned to one of three dietary treatments, with 10 replicate pens per treatment and 52 birds per replicate. The birds were raised to 42 days in floor pens on reused litter. Basal diets were formulated in three phases: Starter d 0-21, Grower d 22-35, and Finisher d 36-42 (2900, 3000, and 3100 kcal/kg ME respectively). Dietary treatments were 1) corn-soy basal control (CON), 2) CON + 100 g/MT EnzaPro (EP), and 3) CON + 100 g/MT monensin (MN). Birds were challenged with *C. perfringens* on d 1, *Eimeria acervulina* and *Eimeria tenella* on d 7, and *Eimeria maxima* on d 10. Data were analyzed via MiniTab 17 One-Way ANOVA. EP significantly ( $P < 0.05$ ) increased 42-d BWG by an average of 52 g/bird and was comparable to MN. EP tended to reduce FCR by 2 points compared to CON ( $P = 0.068$ ) and was comparable to MN. Both EP and MN significantly ( $P < 0.05$ ) reduced intestinal *C. perfringens* and *E. coli* load, as well as *Salmonella* incidence at d 21 and 42 compared to CON. At d 21, EP and MN significantly ( $P < 0.05$ ) reduced litter *C. perfringens* load and intestinal lesion severity. By d 42, both EP and MN significantly ( $P < 0.05$ ) reduced cecal *E. tenella* load compared to CON. EP had significantly ( $P < 0.05$ ) higher AMEn compared to CON and MN at d 42 by 47 and 41 kcal/kg, respectively. The results of the current study suggest that EnzaPro is an effective solution to limit disease progression, improve energy availability, and improve broiler performance, in addition to achieving results comparable to a commercial anticoccidial.

**Key Words:** xylanase, DFM, anticoccidial, pathogens, AMEn