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ABSTRACT ([Poult. Sci. 97 \(E-Suppl. 1\)](#)):

293 Effects of a commercial xylanase-direct-fed-microbial feed additive on gut health and livability of broilers raised under severe coccidiosis challenge conditions.

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A study was conducted to evaluate the effects of a proprietary blend of xylanase and multi-strain *Bacillus* direct-fed microbial (DFM), (Enza-Pro, EP, BioResource International Inc.) supplemented to corn-soy-based broiler diets on the live performance and severity of intestinal lesions of broilers raised in battery cages to 28 d. A total of 512 d-old male Ross 708 broiler chicks were assigned to one of 5 dietary treatments, with 7 replicate cages per treatment except treatment 1 (unchallenged positive control which contained 4 replicate cages) and 16 birds per cage. Cage size is 140 cm × 280 cm. Diets were formulated in 2 phases (Starter d 0–14, and Grower d 15–28). Dietary treatments were unchallenged positive control (PC), challenged negative control (NC), NC + 100 g/MT EP, and NC + commercial coccidiostat 42 g/MT (CS). Birds fed NC diets were orally gavaged and challenged at 1 and 7 d of age with a live vaccine containing multiple strains of *Eimeria* spp. Data were analyzed as a randomized complete block design. At 28 d, mortality was reduced ($P < 0.05$) in birds fed NC + EP diet compared with birds fed the NC diet (10.3 vs 1.3%). Supplementation of EP reduced ($P < 0.01$) upper-tract intestinal lesions by 36% compared with NC at 14 d. The overall trend was maintained for mid-tract intestinal lesions to 21 d for birds fed NC diets supplemented with EP. The 28-d FCR among birds of EP treatment was improved by 7 points compared with NC. Results of the current trial suggest that this blend of xylanase and probiotics improves broiler performance by significantly reducing mortality and improving gut health under severe challenge.

Key Words: broiler, xylanase, direct-fed microbials, lesions, mortality