

Anticoccidial drug sensitivity of the coccidia vaccine HIPRACOX BROILERS

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The attenuated *Eimeria* species/strains included in the coccidiosis vaccine HIPRACOX BROILERS: *Eimeria acervulina*, *E. maxima*, *E. mitis*, *E. praecox*, and *E. tenella* were evaluated for their anticoccidial drug sensitivity. Each strain was independently examined. The test treatments were nonmedicated noninfected, nonmedicated infected (NMI), Diclazuril (1 ppm), Lasalocid sodium (125 ppm), Maduramicin (5 ppm), Monensin sodium (125 ppm), Narasin (70 ppm), Nicarbazine (125 ppm), Robenidine (36 ppm) and Salinomycin sodium (70 ppm). Six days post inoculation, birds and feed were weighed and coccidial lesions scored. Because *E. mitis* and *E. praecox* do not produce discernable coccidial intestinal lesions, dropping scores and Day 5-7 oocyst shedding (OPG) were used for these two species. The challenge for all species was sufficient to determine anticoccidial drug sensitivity. All medicated challenged birds had significantly ($P < .05$) higher live weight gain and lower feed conversion compared to NMIs. All medicated challenged birds had significantly ($P < .05$) lower lesion scores or dropping score and OPGs than NMIs. All species were shown to be very sensitive to all anticoccidial drugs included in the study. Vaccination with the anticoccidial drug sensitive strains found in this vaccine should produce a measurable increase in the level of anticoccidial drug sensitivity.

Keywords: *Eimeria*; vaccine; anticoccidial; sensitivity; coccidiosis

Table 1. Anticoccidial drug sensitivity based on comparisons of average feed conversion, avg. live weight gain (kg), and coccidial lesion or dropping scores for *Eimeria* species/strains in the coccidiosis vaccine HIPRACOX BROILERS

Treatment	Feed conversion ¹	Live wt. gain ² (kg)	Lesion score ³	Dropping score ⁴	OPG ⁵
1. NMU	1.448 b	0.465 a	0.0 c	0.0 b	0.0 b
2. NMI	1.648 a	0.388 b	2.2 a	2.2 a	2.2 a
3. Monensin 125 ppm	1.472 b	0.453 a	0.7 b	0.2 b	0.2 b
4. Nicarbazine 125 ppm	1.493 b	0.439 a	0.4 bc	0.2 b	0.2 b
5. Narasin 70 ppm	1.487 b	0.452 a	0.8 b	0.3 b	0.3 b
6. Salinomycin 70 ppm	1.487 b	0.452 a	0.5 b	0.0 b	0.0 b
7. Lasalocid 125 ppm	1.489 b	0.448 a	0.4 bc	0.5 b	0.5 b
8. Maduramicin 5 ppm	1.483 b	0.456 a	0.3 bc	0.2 b	0.2 b
9. Diclazuril 1 ppm	1.490 b	0.451 a	0.4 bc	0.0 b	0.0 b
10. Robenidine 36 ppm	1.473 b	0.451 a	0.4 bc	0.2 b	0.2 b

^{a-c} Means within a column with no common superscript differ significantly ($P < 0.05$).

¹ Feed conversion: total feed consumption/ ((final live weight + mortality weight)-initial weight)

² Live weight gain: (final weight/ number of live birds)- (initial weight/ number of birds)

³ *E. acervulina*, *E. maxima*, and *E. tenella* infected birds were coccidial lesion scored Day 8 (6 days post inoculation) using the system of Johnson and Reid, wherein 0 is normal and 1, 2, 3, or 4 indicate increasing severity of infection.

⁴ *E. mitis* and *E. praecox* dropping scores were performed on Day 8 (6 days post inoculation) wherein 0 is normal and 1, 2, or 3 indicate increasing severity of infection.

⁵ *E. mitis* and *E. praecox* oocysts per gram fecal material (OPGs) was determined from fecal material collected from Day 5-7 post inoculation.