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Choosing the Best Coccidiosis Control Program is a Critical Decision

Estimates put the cost of coccidiosis to the poultry industry at over $10 billion dollars annually (based on 2016 prices). This makes optimising control programs critical to the sustainability of poultry production.

Currently the most popular control program is what is known as a 'shuttle program'. This involves using a potentiated ionophore (nicarbazin plus an ionophore), typically from day 1 to between day 14 and day 28 of the production cycle, followed by an ionophore given on its own for the last part of the cycle.

During the last phase of the shuttle program, producers have the option to either use the same ionophore included in the potentiated product during the first phase of the program, or to rotate to a different ionophore altogether.

Huvepharma has conducted an analysis of lesion scores and feed conversion rate (FCR) performance data input into Aviapp by producers between 2016 and 2024 to compare the results from shuttle programs that rotate to a different ionophore with those that continue to use the same ionophore throughout the shuttle program.

The programs evaluated were:

- **Same ionophore shuttle programs:** narasin + nicarbazin followed by narasin; and monensin + nicarbazin followed by monensin
- **Mixed ionophore shuttle programs:** narasin + nicarbazin followed by salinomycin or monensin; and monensin + nicarbazin followed by salinomycin or narasin

Ionophore rotation makes sense for reduced lesion scores

Rotating to a different ionophore from that included in the potentiated ionophore resulted in a significant reduction in lesion scores for all *Eimeria* species: *E. acervulina*, *E. maxima*, and *E. tenella* (Figures 1 - 4). The greatest overall difference was observed in week 5 (days 28 - 35) when the shuttle program switched to the ionophore without potentiation. The difference in the average lesion score across all three *Eimeria* species equated to a 1-point reduction in FCR.

While *E. acervulina* lesions accounted for most of the total mean lesion scores, the differences in *E. maxima* (Figure 3) were significant between both strategies in all production weeks (*p*-value < 0.001). Overall, *E. tenella* lesion scores were very low, however in week 5 when *E. tenella* challenge typically peaks, a clear difference was observed. Based on mortality and FCR, *E. tenella* is highly detrimental to performance so even the small differences shown in Figure 4 can result in the loss of up to 2 points in FCR.

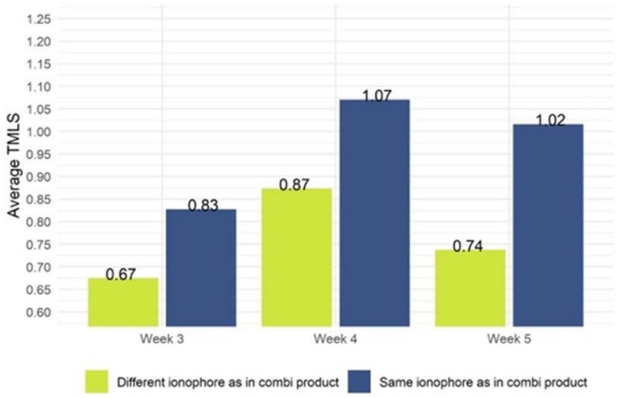

Figure 1. Comparison of average lesion scores for all *Eimeria* species (*E. acervulina, E. maxima, and E. tenella*)

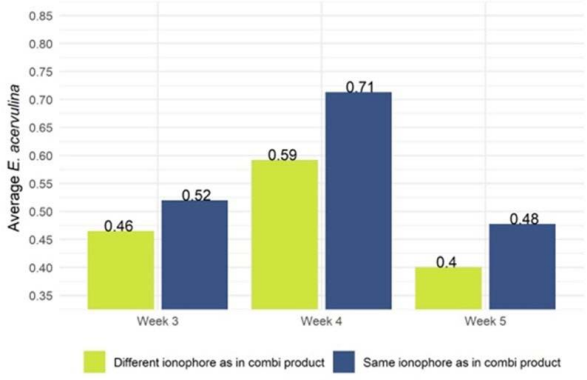

Figure 2. Comparison of average lesion scores for *E. acervulina*

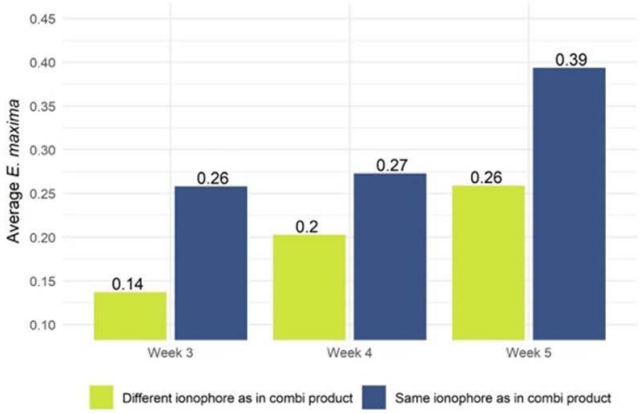

Figure 3. *E. maxima* average lesion scores for two different control strategies

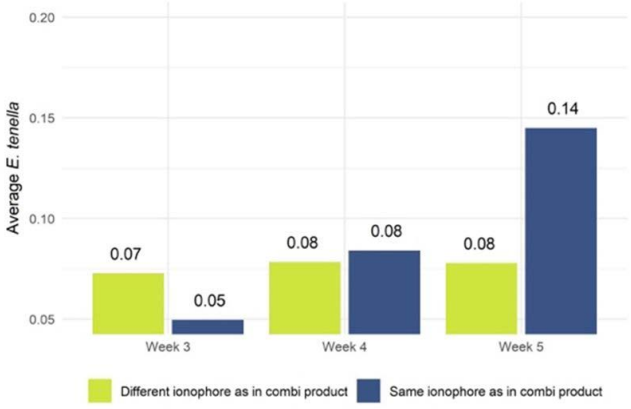

Figure 4. *E. tenella* average lesion scores for two different control strategies

Ionophore rotation makes sense for improved FCR

The feed conversion ratio (FCR) data in Figure 5 shows the average FCR for both ionophore rotation and non-rotation strategies as a function of slaughter age. At all slaughter ages there was a significant improvement in feed efficiency when a different ionophore was used in the latter part of the control program. The difference between both strategies becomes increasingly marked as the slaughter age increases, with a difference of 4 points in FCR at a slaughter age of 42 days.

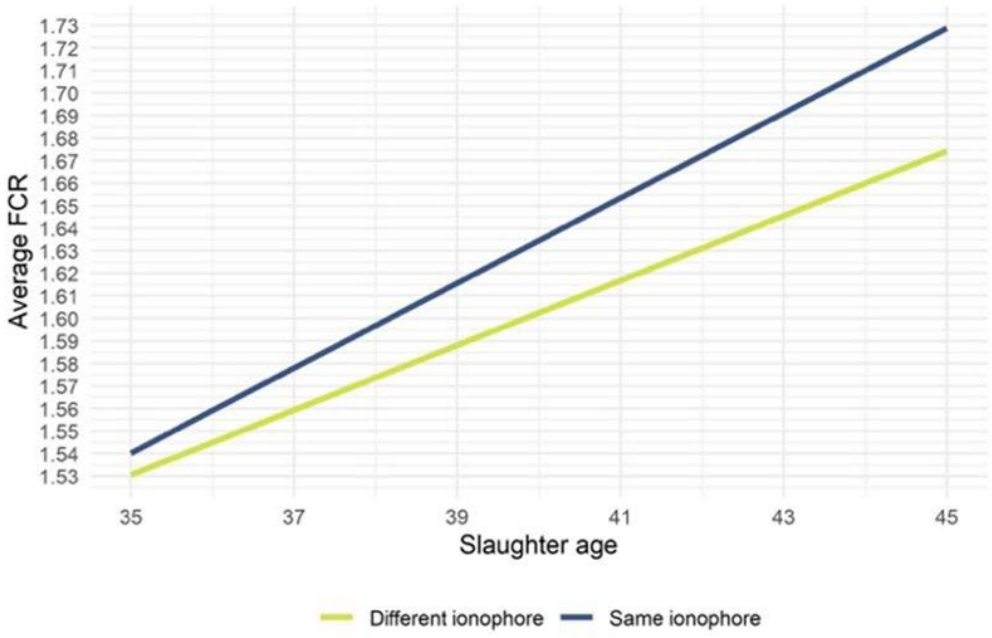

Figure 5. Comparison of the average FCR as a function of slaughter age

Summary

Shuttle programs that rotate to using an ionophore which is not part of the potentiated product improve the coccidiosis lesion score and FCR. This means that mixed ionophore shuttle programs such as monensin + nicarbazin / salinomycin are significantly more effective than shuttle programs that use the same ionophore such as narasin + nicarbazin / narasin.

Original article by Ben Dehaeck, Global Marketing Director Poultry Health, Huvepharma

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