

The Impact of Coccidiosis on FCR in Broilers

Background

Eimeria is known to negatively affect FCR and bird performance in broilers. This report summarises the associations between coccidiosis scores at a specific age and final feed conversion ratio (FCR) in the three main Eimeria known to impact broilers. Data from 1,785 flocks in 13 countries was sourced from Huvepharma's Aviapp platform. The analysis considered variables such as cocci monitoring age, slaughter age, and Eimeria species.

Executive Summary

- *E. acervulina* lesion score 0.8 or higher showed an adverse impact on FCR of 2 points in 14-21 day old birds, and 6 points in 28 day old birds. Higher lesion scores were slightly more detrimental. *E. acervulina* was the most prevalent cocci observed.
- *E. maxima* lesion score 1 showed an increase of 2-3 FCR points in birds aged 21, 28 or 35 days. The impact of lesion score 1 in 14 day old birds yielded a confusing result, perhaps due to 'false positive' cocci scores of *E. maxima* in young birds.
- *E. tenella* showed the most significant FCR impact of 8-12 FCR points at lesion score 1, but was fortunately the least prevalent Eimeria observed by far.

Clinical Implications

- *E. acervulina* lesions score 0.7+ in 28 day old birds is particularly costly, which correlates with strong feed intake and growth in older broilers.
- Robust coccidiosis control and regular monitoring of coccidiosis by trained personnel in 21 and 28 day old birds is essential to maintain optimal bird performance

E. acervulina

Higher lesion scores at later ages negatively affect FCR, showing a nonlinear dose response relationship. The impact is most significant at 28-35 days.

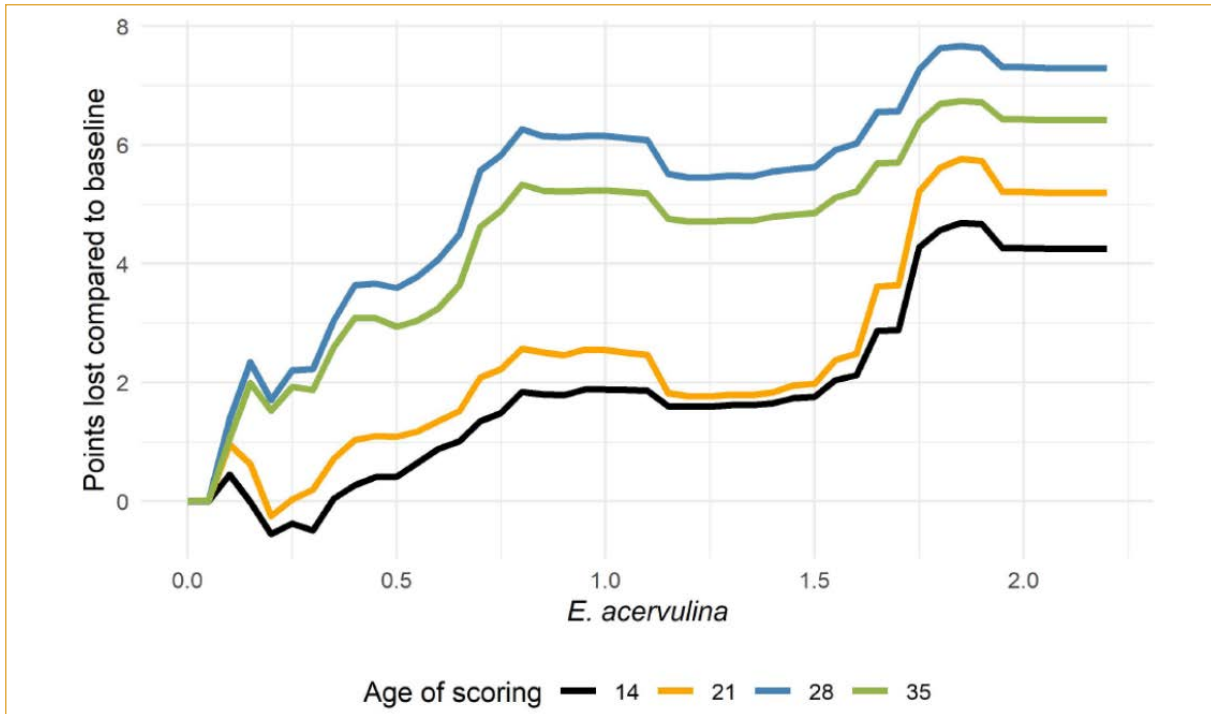


Figure 1: Impact of different average *E. acervulina* scores on FCR scored at different days

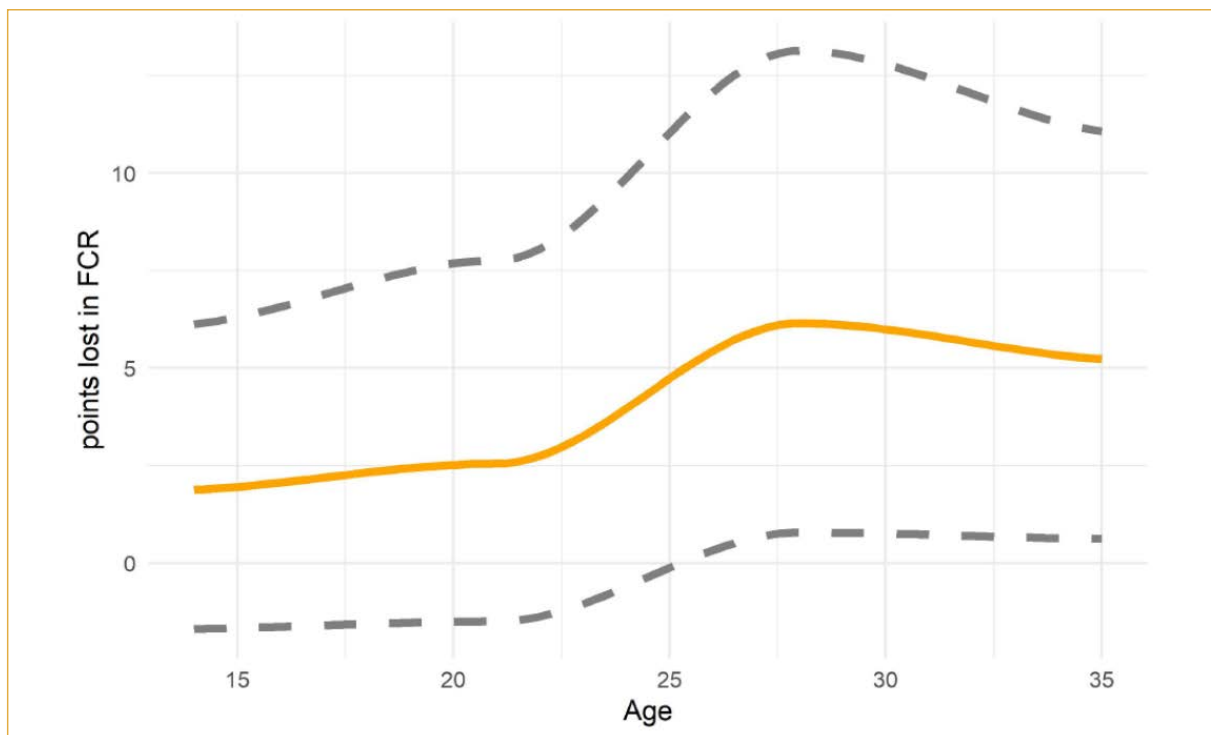


Figure 2: Effect at different scoring ages for the average *E. acervulina* score = 1



E. maxima's impact on FCR depends on scoring age. The association with improved performance at earlier ages suggests potential issues with the scoring system i.e. false positive scoring at early ages, or possibly efficient compensatory growth, post early infection.

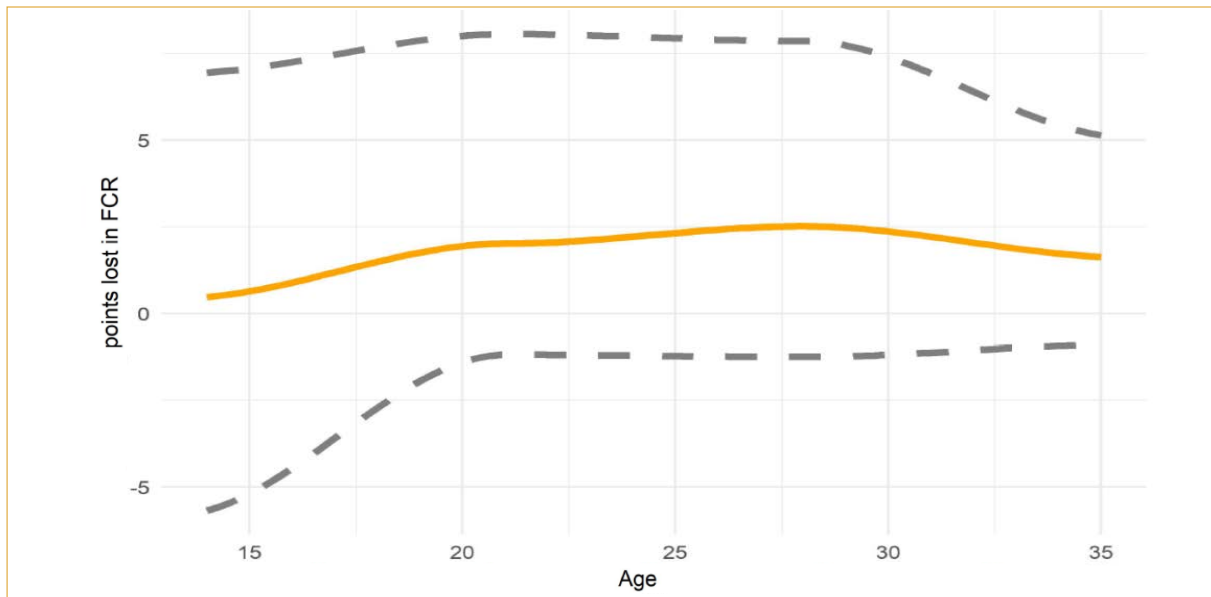


Figure 3: Effect at different scoring ages for the average *E. maxima* score = 1

E. tenella's impact on FCR increases with age, with the highest loss among the three species likely due to mortality at high levels, fortunately it is the by far the least common. Unlike *E. acervulina* and *E. maxima*, there's no maximum impact observed, indicating a continuous increase with age.

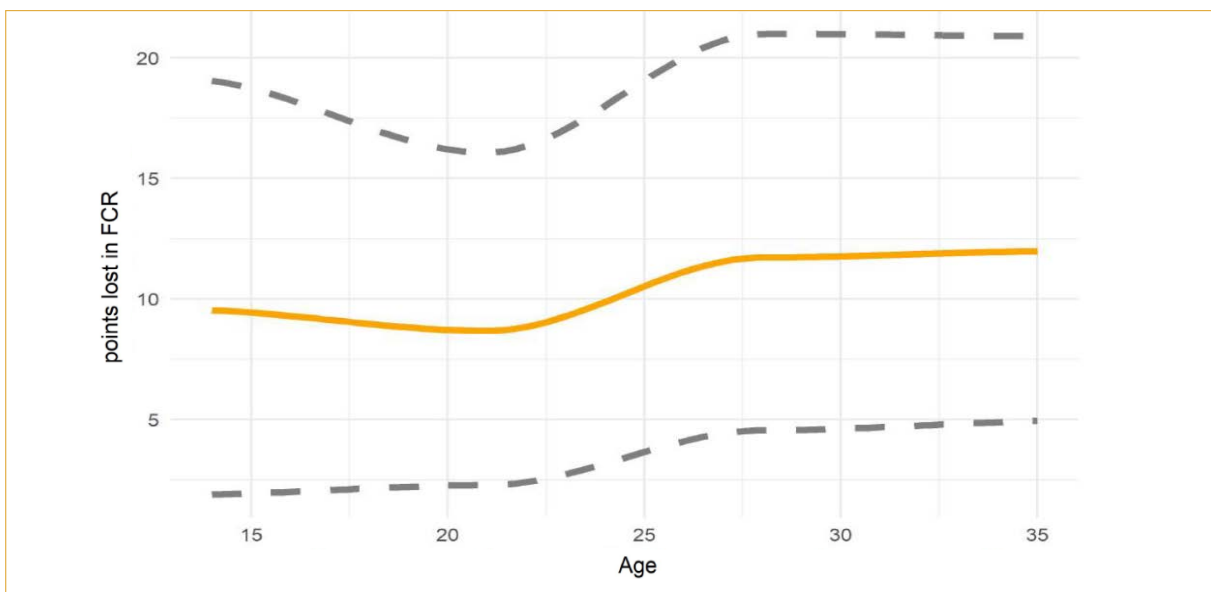


Figure 4: Effect at different scoring ages for the average *E. tenella* score = 1

In conclusion, all three *Eimeria* species negatively affect FCR, with *E. tenella* (the least prevalent) having the most significant impact. *E. acervulina* (the most prevalent), shows a high impact on FCR - particularly when observed in birds 28+ days - emphasizing the need for stringent coccidiosis control to optimize energy utilization and improve FCR.

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