



Association between the prevalence of *E. acervulina* and *E. maxima* in broiler flocks in the field

¹M. Marien, ¹M. Vereecken*, ¹B. Dehaeck, ¹S. Bekaert, ¹W. Schelstraete, ¹M. Geerinckx, ¹K. De Gussem

¹Huvepharma® NV, Antwerp, Belgium

Objective

Diagnosis of *Eimeria maxima* is perceived to be difficult but taking into account the impact of on performance and intestinal health, it is crucial to consider this species. Using Aviapp®, the Huvepharma® health monitoring platform, prevalence of *E. maxima* in absence and presence of *E. acervulina* was investigated in field conditions.

Set-up

Lesion scoring data logged in Aviapp® (Huvepharma®) from 2018-2020 were considered. To exclude impact of extreme observations, the age of scoring was filtered to range between 15-42 days (lesion scoring data of 5,279 flocks; 38,007 birds). To assess the effect of presence of *E. acervulina* on prevalence of *E. maxima*, a generalised linear mixed effects model was used. Age and presence of *E. acervulina* as well as their interaction were used as fixed effects. To adjust for farms differences, a random effect for farm was included. The level of significance was set at 0.05.

Results

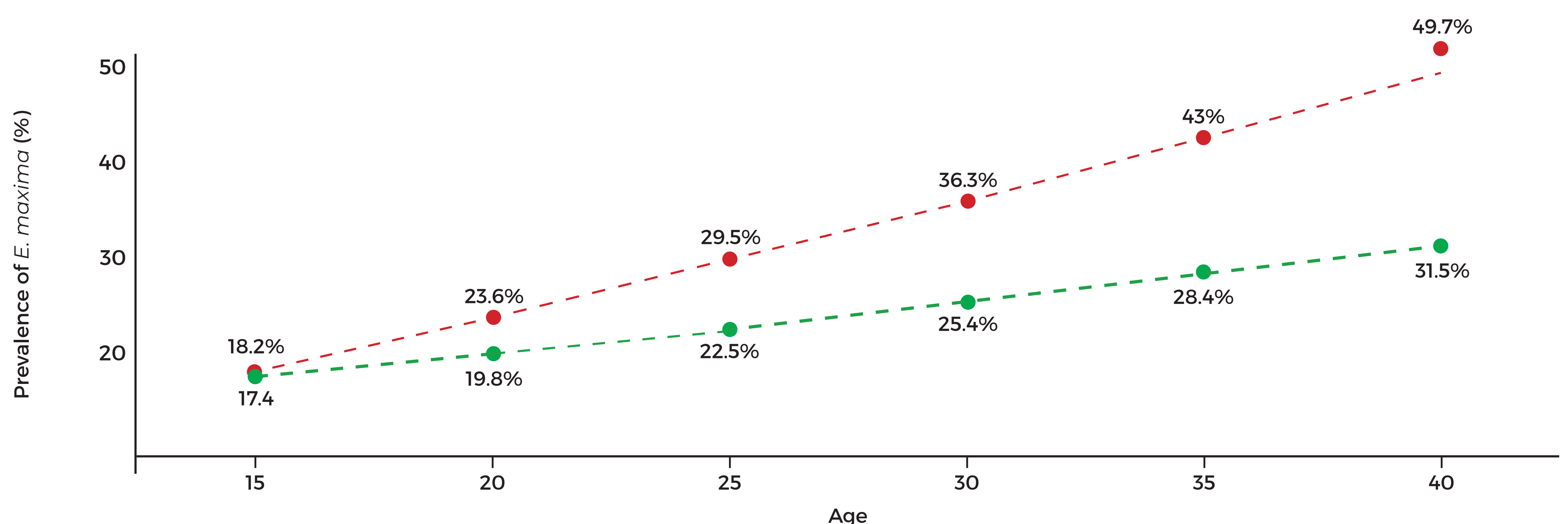


Figure 1. Prevalence of *E. maxima* in absence (—●—) or presence (—●—) of *E. acervulina*

It can be concluded that there is a much higher prevalence of *E. maxima* lesions in case *E. acervulina* lesions are present. At 30 days *E. maxima* is present in 25.4% of the birds if *E. acervulina* lesions are not present. When *E. acervulina* lesions are present in birds of 30 days of age, the prevalence of *E. maxima* increases to 36.3%.

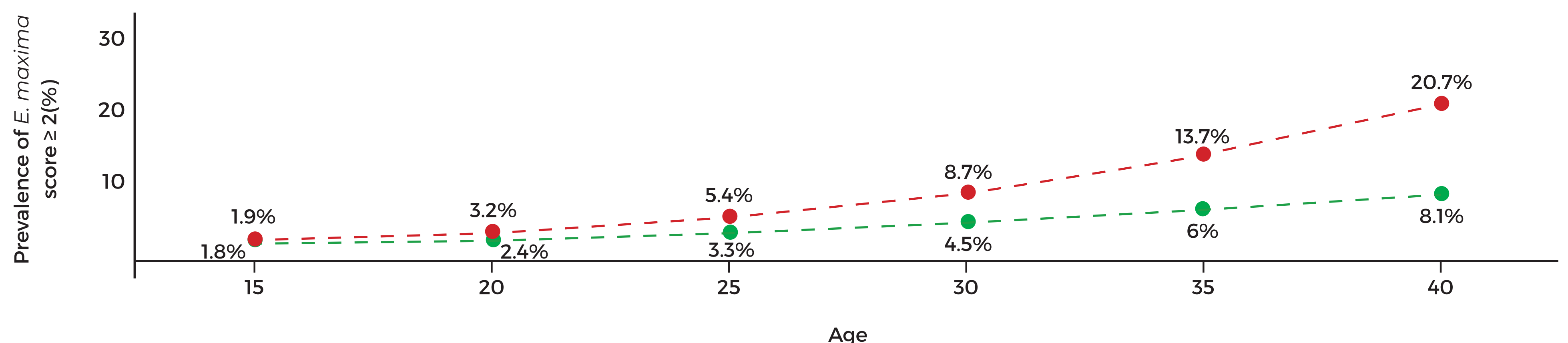


Figure 2. Prevalence of *E. maxima* scores ≥ 2 in absence (—●—) or presence (—●—) of *E. acervulina*

The relation between the presence of *E. acervulina* and the occurrence of severe *E. maxima* (scores ≥ 2) is even higher: at 30 days prevalence of severe *E. maxima* is 4.5% in absence of *E. acervulina* but if *E. acervulina* is present, prevalence of severe *E. maxima* almost doubles (8.7%). This effect is seen as from 20 days of age and is considerable higher in older birds.

Conclusions

Statistical analysis of data from the Aviapp® platform demonstrates a clear association between the presence of *E. acervulina* lesions and *E. maxima* lesions showing that the prevalence of *E. maxima* scores is higher when *E. acervulina* lesions are present. The chance of finding *E. maxima* lesions ≥ 2, can be 2 times higher at critical ages when *E. acervulina* is also present.

The presence of *E. acervulina* is an indication of insufficient coccidiosis control in general and can be used as a potential detector for other species such as *E. maxima* which are more difficult to diagnose.