



General Anticoccidials



Association between prevalence of *E. acervulina* and *E. maxima*

Objective

Using Aviapp®, the Huvepharma® health monitoring platform, the prevalence of *E. maxima* in absence or presence of *E. acervulina* was investigated in field conditions. This could underline the importance of finding *E. acervulina* lesions during lesion scoring sessions.

Set-up

To answer the above objective, lesion scoring data logged in Aviapp® from 2018 until 2020 was taken into account. The number of flocks and birds are listed in Table 1.

Table 1: Number of flocks and birds included in the analysis (*)

Region	# Flocks	# Birds
Europe	5279	38007

* To exclude the impact of extreme observations, the age of scoring was filtered to range between 15 and 42 days of age

The association between *E. maxima* and *E. acervulina* prevalence was evaluated at bird level by a logistic regression, taking into account the age of the animals and correcting for possible farm effects. Using this model, the prevalence of *E. maxima* at the age of 15, 20, 25, 30, 35, and 40 days of age was calculated in presence or absence of *E. acervulina*.

Results

The prevalence of *E. maxima* in absence and presence of *E. acervulina* is shown in Figure 1. It can be concluded that there is a much higher prevalence of *E. maxima* lesions in case *E. acervulina* lesions are present. For example at 30 days of age *E. maxima* is present in 25.4% of the birds if no *E. acervulina* lesions are present. However, when *E. acervulina* lesions are present in birds of 30 days of age, the prevalence of *E. maxima* increases to 36.3%.

Additionally, in Figure 2 the prevalence of more severe *E. maxima* scores (≥ 2) is depicted in presence and in absence of *E. acervulina* lesions (score 1-4). The relation between the presence of *Eimeria acervulina* lesions and the occurrence of severe *E. maxima* scores (scores >2) is even higher. For example at 30 days of age the prevalence of *E. maxima* (score ≥ 2) is 4.5% in absence of *E. acervulina* lesions but if *E. acervulina* scores (score 1-4) are present, the prevalence of *E. maxima* (score ≥ 2) almost doubles to 8.7%. This effect is seen as from 20 days of age and is considerable higher in older birds.

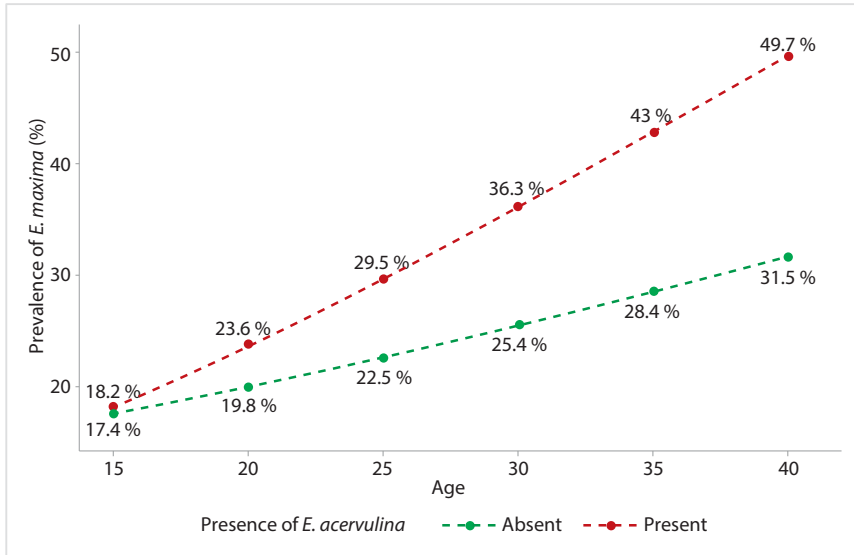


Figure 1: Prevalence of *E. maxima* in absence (green) or presence (red) of *E. acervulina*.

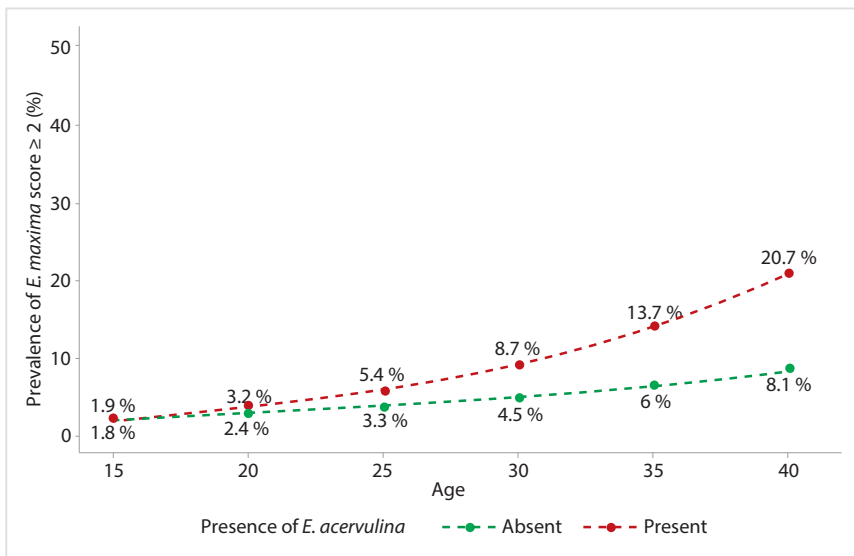


Figure 2: Prevalence of *E. maxima* scores ≥ 2 in absence (green) or presence (red) of *E. acervulina*.

Conclusions

Statistical analysis of data from the Aviapp® platform demonstrates an association between the presence of *E. acervulina* lesions and *E. maxima* lesions showing that the prevalence of *Eimeria maxima* scores is higher when *Eimeria 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.