

News

Successful Characterization of Prominent Eimeria Species

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In the poultry industry, coccidiosis is still a common intestinal illness with a substantial economic impact. Although coccidial infection is frequently thought to be more of an issue in broilers, it continues to be a problem in other birds, such as layers and turkeys. Live commercial or autogenous oocyst vaccination and rotational or shuttle programs that cycle anticoccidial drugs like synthetic compounds or ionophores in the feed are currently accessible coccidia control techniques. Initially, phenotypic traits such as host specificity, intestinal location and lesions, oocyst morphology, cross-immunity, prepatent duration, and pathogenicity were used to characterize Eimeria species. Faecal samples used in this investigation were collected because of an Eimeria detection and diagnostic sensitivity service offered by the Poultry Enteric Health Research Laboratory at Ohio State University. There is a notable dearth of literature analysing the distribution of Eimeria species thought to be problematic in current US turkeys, even though the economic effects of coccidiosis on the poultry sector have received a considerable deal of attention in the past. Additionally, this is one of the rare papers that characterizes the incidence of Eimeria species across numerous field samples from commercial turkey flocks using PCR identification. *E. adenoides*, *E. meleagritidis*, and *E. gallopavonis* were each detected in 50, 88, and 62% of the 26 flocks that tested positive for Eimeria after nested PCR in a Canadian flock study. Whether by vaccination or a feed additive, anticoccidial control strategies are susceptible to fluctuating or declining efficacy over time. Drug resistance, including multidrug resistance, is a significant issue visible as per the research, in herds raised on anticoccidial composites due to constant usage. To reduce drug resistance and reseed litter with susceptible coccidial strains, anticoccidial chemicals are also added to the broiler production process by immunizing drug-sensitive Eimeria oocysts. This tactic is useful for broiler flocks because more commercially available vaccinations are now available that cover other Eimeria species, which, as was already indicated, are shortened in turkeys. To immunize the same flock, autogenous anticoccidial vaccines are produced from oocysts isolated from that flock or complex. These vaccines are particularly effective in the presence of Eimeria immunovariants, which differ geographically and may provide little cross-protection between one another. However, given that there are so few Midwestern flocks, it is impossible to determine the geographic distribution of Eimeria in the US with such accuracy from such a tiny sample size.

KEYWORDS*Coccidiosis, PCR, Eimeria adenoides, Eimeria meleagritidis, Eimeria gallopavonis*