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MG INFECTIONS

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Nationally, the economic impact of *Mycoplasma gallisepticum* (Mg) on the table egg industry has been estimated at between $118 million and $150 million annually.

Commercial egg producers in southern California alone lost an estimated $127 million in 1984 because of Mg. Losses from this outbreak, in production and costs for Mg control programs, amounted to more than $6.5 million.

Chronic respiratory infections associated with Mg become more severe and adversely affect producer profit if the disease is complicated with E. coli, Newcastle disease, or infectious bronchitis exposure.

Infection can spread from the hen's respiratory tract to oviduct, causing reduced egg production and poor egg quality. Egg producers experience lost revenues from poor feed conversion, increased medication costs, higher air sac, and sep-tox condemnations in addition to drops in egg production and poor egg quality.

The preferred method to control Mg in poultry flocks is to maintain flocks free of infection and use good management and sanitation practices to prevent introduction from outside sources. Unfortunately, in Pennsylvania and many other states, Mg is already established on many multi-age farms, and transmission from mature hens to replacement pullets ensures its existence. In situations where eradication appears out of reach or unobtainable, controlling the production losses appears to be the only viable alternative.

There are several ways to counter the losses associated with Mg infections. One is the therapeutic and prophylactic feeding of antibiotics to reduce the clinical symptoms and stress associated with Mg. However, the costs of adding antibiotics to the feed and the increased incidence of Mg-resistant organisms has made their use less desirable.

Vaccination of the pullets before they are exposed to field strains of Mg on the laying farm holds the most promise, according to some researchers. Numerous studies have demonstrated that vaccination against Mg can cut egg production losses in half when compared to non-vaccinated birds exposed to the disease.

Killed oil emulsion Mg-bacterins, live F-strain Mg, and the new Mycovac-L from Intervet Inc. are the current vaccine alternatives. Shortcomings with the bacterins are the labor costs associated with injecting individual birds, concern for worker safety, and bird lesions from the injection.

The use of the F-strain has been denied by some state veterinarians because turkeys in close proximity are susceptible to the live F-strain Mg. Early communications from the field suggest that flocks vaccinated with Mycovac-L are performing well. Unfortunately, actual hen performance and cost analysis compared with non-vaccinated hens have never been determined under Pennsylvania's conditions.

Some suggest that comprehensive field evaluations are the best way to evaluate vaccine efficacy against drops in egg production after field exposure to Mg. With this premise, we conducted the following study to evaluate the potential of Mycovac-L for Single Comb White Leghorn hens in Pennsylvania. Our objective was to compare the flock performance records for pullets immunized with Mycovac-L with similar flocks given F-strain. Comparisons would include hen body weight, feed consumption, feed conversion, mortality, egg production, eggs per hen housed, and case weights.

To carry out this study, we first identified Mg-vaccinated flocks from the license applications at the Pennsylvania Department of Agriculture. Flock owners were contacted for confidenual use of their flock records and any comments they had regarding bird performance or egg quality. Production records from eight flocks immunized with F-strain and 14 flocks immunized with Mycovac-L were summarized. The records were pooled into 10-week periods from 20-29 weeks, 30-39 weeks, 40-49 weeks, and 50-59 weeks of production, and average values were compared statistically between the two treatments.

The results are as follows. Mortality was approximately the same between the two treatments, only in the 40-49 week period was it statistically higher for F-strain (.46 percent) vs. Mycovac-L (.13 percent) vaccinated hens. Body weight was consistently reduced by F-strain vaccination in every 10-week period comparison (averaged .16 pound lighter). No statistical difference in eggs per hen housed was detected; however, birds given the Mycovac-L averaged one more egg during the periods we considered.

Statistically higher hen day production was recorded for Mycovac-L treated birds at 30-39 weeks (89.4 vs. 88.3 percent) and at 40-49 weeks (85.1 vs. 83.7 percent) compared with F-strain. No difference was observed in feed per dozen eggs or feed consumption per 100 hens per day.

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