Dr. C. F. Hall, Secretary-Treasurer
AAAP

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1978-79 AAAP Mycoplasmosis Committee Report

Last year's Committee (1977-78) identified five major areas as being important problems (mycoplasma-related) of the industry. This report updates and focuses on the progress made in solving these problems during the past year (1978-79).

I. M. gallisepticum (MG) in commercial layers. While the Committee still feels that eradication is the ultimate goal, the practice of vaccination of pullets with the F-strain (or other strains of low virulence) is an accepted fact within most of the commercial layer (multiple-age) industry. Most of the members of this Committee feel that the procedure is effective in reducing egg production losses. Quantitative data from Dr. E. Mallinson's office (Bureau of Animal Industry, Penn.) indicate while MG-vaccinated flocks have an economic advantage over MG-dirty flocks, the MG-free flocks give significant greater dollar returns than either of the two. These and other observations reemphasize the advantage and need for MG eradication in the layer industry.

Tools for eradication are available which include use of vaccination and/or medication (tylosin?) of multiple age-layer operations and replacement with clean stock.

Our views concerning MG in multiple-age layer complexes (with field or F-type organisms) as being a potential threat to the broiler and turkey industries has not changed from that articulated in the position paper of 1977. Similarly, vaccination of turkeys with live F-strain MG or strains of similar virulence is not recommended. The F-strain is definitely pathogenic for turkeys.

II. M. meleagridis (MM) in turkeys. Large primary breeder organizations have been working arduously in eliminating MM from their stock. Flocks free of MM have been produced by medication (tylosin and gentamicin) of eggs by injection and/or dip and injection procedures. These procedures are not foolproof. A great deal of serologic and cultural monitoring is required to determine freedom from infection. Furthermore, one of the major challenges has been to maintain MM-free status during strain multiplication (grandparent and parent flocks) in an environment where large populations of infected turkeys remain.

The economic advantage of freedom from MM is seen in increased hatchability, improved growth performance, and reduction in airsacculitis-related condemnations. Recent quantitative data from the Univ. of Calif. definitely show that MM causes late incubation mortality.

The industry is committed to MM eradication.

III. Need for rapid procedures to identify mycoplasma isolants. Available procedures include fluorescent antibody, growth inhibition, agar gel diffusion. Potential procedure include enzyme labelled immunosorbant assay (ELISA). Each investigator in this area seems to have his own desirable method.

While M. gallinarum has been shown to cause disease in mixed infections with viruses in broilers, the prevalence of this type of infection is still not known.

IV. Need for improved serologic tests. Satisfactory agglutination antigen for MG, MM and M. synoviae (MS) may be obtained commercially (Salsbury Lab.). Other sources include individual laboratories working with mycoplasma and the USDA. The HI antigen for these agents is available for the most part from individual laboratories although some HI antigens may be obtained from USDA.

Usually the agglutination test is used as a primary test and the HI is used as the confirmatory test (MG, MM, and MS). Low HI titers in some infected flocks may be significant, and requires some laboratory expertise in interpretation. With MM serology the microtiter agglutination has been a useful confirmatory test.

False positive reactions (agglutination) apparently are still encountered in chicken flocks to MG and MS. However, much of this problem have been overcomed by the use of confirmatory HI test and performing rapid plate test dilutions (reaction at 1:10 or higher is significant).

False negative reactions (testing negative but really infected) related to strain variations seems not to be a problem currently. This could be a potential problem, for example, in F-strain vaccinated chickens the homotypic antigen detected antibodies more efficiently than the "standard" antigen.

While the MS agglutination test in turkeys seems to detect recent infections, further studies are required for proper evaluation and interpretation. False positive agglutination reaction in turkeys to MM have been encounterd due to erysipelas vaccination; this problem may be solved by confirmatory HI and micro-agglutination and flock history.

New tests being studied include ELISA and counterimmunoelectrophoresis. Serologic data should be correlated with clinical picture whenever possible.

V. Research on killed MG vaccines. Studies of this nature should be encouraged as killed products could be a useful adjunct to our eradication goal. Aerosol exposure with killed products may have merit as reported by workers in Japan. These types of products may be expensive to prepare. There is a need for production data following the use of such products.

Finally, we asked ourselves the question, " How important is mycoplasma research (lab./field) relative to other avian diseases" in terms of:

	High		Moderate	Low
A. Priority.....	4	1	4	0
B. Funding Level Deserved...	3	1	5	0

n = 9. Possibly biased considering the committee makeup, but it looks like we still have some work to do.

Respectfully submitted:

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