

TITLE: GENOTYPE PROFILE OF *Mycoplasma gallisepticum* AND *M. synoviae* STRAINS IN COMMERCIAL LAYING HENS FROM SÃO PAULO, BRAZIL

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ABSTRACT:

Mycoplasma gallisepticum (MG) and *Mycoplasma synoviae* (MS) are indistinguishable pathogens of the poultry production, responsible for subclinical or clinically apparent diseases in layer hens. The clinical signs are mainly sneezes, cough, gasping, nasal discharge, facial swelling and edema, tearing, blepharitis and drop of eggs production in laying hens. The aim of this study was to determine the prevalence of MG and MS and the phylogeny of the circulating strains, comparing them with others already described in commercial laying hens of Brazil. Tracheal swabs were collected from 10 laying hens from 14 flocks presenting respiratory signs, for a total of 140 samples, from six commercial laying farms of central-west region of São Paulo. The samples were tested for detection of MG and MS by PCR and two samples of each flock were analyzed by PCR 16S rRNA MS and PCR lipoprotein MG, followed by sequencing and phylogenetic analysis of the identified strains. From the six laying farms, 66.6% (4/6) were positive for MG, while 100% (6/6) were positive for MS. When analyzing the flocks, 50% (7/14) presented a positive result for MG and 92.8% (13/14) were positive for MS. From the total of 140 samples, 16.4% (23/140) were positive for MG, while 68.6% (96/140) presented a positive result for MS. A mixed infection of MG and MS was observed in 11.4% (16/140) of the samples. There was a significant difference in the frequencies of MG and MS per laying farm according to G-Test of independence ($p < 0.05$). It was observed a similarity among the identified strains of MG by lipoprotein. Such MG strains also presented a similarity with vaccine strains F and ts-11, although they belong to different clusters. It was also observed a high similarity among the strains of MS studied by 16S rRNA region. They presented similarity with the standard strain WVU1853 and with others previously studied in the same region. It was possible to observe in this study a high prevalence of MS and MG in laying farms, being the MS prevalence higher than MG's. A mixed infection by MG and MS was detected, and such mycoplasmas may act in a synergic way, making the respiratory condition worse.

Keywords: mycoplasmas, laying hens, respiratory condition, phylogeny

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