Prevalence of *Ornithobacterium rhinotracheale*, *Mycoplasma gallisepticum* and *Mycoplasma synoviae* Antibodies in Layers *

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Abstract
A study was conducted to reveal prevalence of *Ornithobacterium rhinotracheale*, *Mycoplasma gallisepticum* and *Mycoplasma synoviae* antibodies in layers of Namakkal district by ELISA. The seropositivity of 43.25, 67.56 and 96.04 per cent were recorded for chicks, growers and layers respectively for *Ornithobacterium rhinotracheale*. The seropositivity of 9.09, 20.14 and 62.15 per cent were recorded for chicks, growers and layers respectively for *Mycoplasma gallisepticum* and the seropositivity of 27.27, 30.21 and 91.60 per cent were recorded for chicks, growers and layers respectively for *Mycoplasma synoviae*. The seroprevalence was found to be higher among layers followed by growers and chicks.

Key words: Prevalence, Layers, ELISA, Seropositivity.

Poultry industry, due to intensification and commercialization, the birds face lots of stress results in lowering of body defense mechanisms, which lead to emergence of economically important pathogens such as *Ornithobacterium rhinotracheale* (ORT), *Mycoplasma gallisepticum* (MG) And *Mycoplasma synoviae* (MS). ORT is a contagious emerging pathogen in the poultry industry, causing respiratory distress, growth retardation, mortality and decreased egg production in poultry (Carlos et al., 2012). MS and MG are an economically important pathogen of poultry worldwide, causing significant economic losses in the poultry industry because of respiratory infection, infectious synovitis and its effect on flocks performance and reduction of egg production in chickens and other avian species. Hence, this study is undertaken to determine the prevalence of ORT, MG and MS antibodies in layers of Namakkal district of Tamil Nadu.

Materials and Methods
Blood samples were collected from commercial layers in Namakkal districts of Tamil Nadu which had not been vaccinated against *Ornithobacterium rhinotracheale*, *Mycoplasma gallisepticum* and *Mycoplasma synoviae*. Serum was extracted by centrifugation at 1,500 × g for 10 min at 4°C and then inactivated at 56°C for 30 min and kept at −20°C before use. A total of 32 sera samples from chicks, 148 sera samples from growers and 657 sera samples from layers were screened for *Ornithobacterium rhinotracheale* antibodies and 32 sera samples from chicks, 139 sera samples from grower and 584 sera samples from layers were screened for *Mycoplasma synoviae* and *Mycoplasma gallisepticum* antibodies.

Sera samples were screened individually by using a commercial direct ELISA kits. The percentage of seropositivity and geometric mean titres (GMT) were calculated and titres greater than 396 were considered positive and indicated exposure to these organisms as per manufacturer’s recommendation.

Results and Discussion
The seropositivity of 43.25, 67.56 and 96.04 per cent and GMT titre of 1091.80, 1489.54 and 5256.10 were recorded for chicks, growers and layers respectively for *Ornithobacterium rhinotracheale*. This is in agreement with the results reported by Keleidari et al. (2008) who reported that 97.63 per cent of serum samples

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were positive for *O. rhinotracheale* by ELISA in Iran.

The seropositivity of 9.09, 20.14 and 62.15 per cent and GMT titre of 1398, 3367.21 and 2378.05 were recorded for chicks, growers and layers respectively for *Mycoplasma gallisepticum*. But, Hossain *et al.* (2007) conducted a serological investigation of MG in chicken in the greater Rajshahi district of Bangladesh on 115 flocks and recorded 55.13 per cent seroprevalence. But, Gole *et al.* (2012) reported 69 per cent *M. synoviae* seroprevalence in commercial layer flocks using ELISA.

The seropositivity of 27.27, 30.21 and 91.60 per cent and GMT titre of 1120.5, 2780.27, 8868.75 were recorded for chicks, growers and layers respectively for *Mycoplasma synoviae*. But, Gole *et al.* (2012) reported 69 per cent *M. synoviae* seroprevalence in commercial layer flocks using ELISA.

The distributions of antibodies of these organisms were high in commercial layers than growers and chicks. This could be due to the more exposure of the layers to these pathogens since it is maintained for 72 weeks. Based on the above study it could be concluded that seropositivity of *Ornithobacterium rhinotracheale*, *Mycoplasma gallisepticum*, and *Mycoplasma synoviae* were higher among layers and comparatively less in chicks and it could be controlled by antibiotic therapy and strict biosecurity measures.

References


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**Characterization of *Listeria Monocytogenes* Isolated from Brain Tissues of Goats from an Outbreak Due to Feeding of Spoiled Fruits**


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**Abstract**

Present study describes the characterisation of *L. monocytogenes* isolated from brain tissues of Goats that died with symptoms of meningitis, after they were fed with spoiled fruits. The outbreak had taken toll of twelve adult goats. Post-mortem revealed septicemic lesions on vital organs and injected blood vessels with areas of congestion on brain. The brain tissues yielded growth of *Listeria spp* on selective media. A set of primers targeting 16S rRNA bacterial gene were used for PCR confirmation. Sequencing of the 1450 bp PCR amplicon confirmed the isolate as *Listeria monocytogenes*. Withdrawal of feeding spoiled fruits stopped further disease/deaths.

**Key words:** Listeria monocytogenes, 16S rRNA gene, Goats, spoiled fruits.

*Listeria monocytogenes* is an ubiquitous, psychotropic, intracellular pathogen which can contaminate food at all steps of the food chain causing invasive, often fatal, disease characterised by septicaemia and meningitis.