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CONCLUSION

- 1- Enzyme-linked immunosorbent assay (ELISA) is the best serological test, it was superior to serum plate agglutination test (SPA) that it had the highest sensitivity and specificity.
- 2- Sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) was a good tool for identification of isolated infectious mycoplasma, it can be used to differentiate between protein profiles of closely related strains of mycoplasma.
- 3- Polymerase chain reaction (PCR) is a useful technique, which can be used for rapid sensitive and accurate detection of mycoplasma infectious agents, by this technique we can avoid the false positive or false negative results associated with the serological techniques. PCR technique also overcomes the waste of time and low recovery rate encountered with cultural method.
- 4- Arbitrary primed-polymerase chain reaction (AP-PCR) is more recent technique can be used for rapid differentiation among different species of mycoplasma and even different strains in the same species, so it can be used for rapid differentiation of the vaccinal and infectious strains of mycoplasma in field cases.
- 5- Enrofloxacin and Ciprofloxacin are the most antibiotics have the useful effects for *MS* prophylactic, treatment and control programs.



SUMMERY

1- A total of 880 tracheal swabs and 150 eggs samples were collected from three Governorates and were examined serologically for *Mycoplasma Synoviae* infection. We found that, results of isolation ranged from 3.5% in Beni-Suef, 7% in Fayoum, and 8.3 from Kaloubia, while it was 2.7% from eggs which collected from three governorates. The highest incidence was from baladi breed (44 weeks) in Kaloubia Governorate (10.7%), followed by baladi breed (36 weeks), Dahabi, Dokki layer, then Fayoumi (9.3, 8, 8, 6% respectively).

On the contrary the least recovery rates was from Dokki (8-12weeks) 1% and zero% from baladi (one-day old). While the highest incidence recovered from eggs was from Beni-Suef Governorate was (4%) followed by Fayoum and Kaloubia Governorate (2%).

2- Biochemical and serological identification of isolates revealed that, the isolates were positive for digitonin, glucose, film and spot, confirming that they related to *MS* strain.

3- ELISA has been proposed because of it is higher sensitivity than SPA as a test for detection of *MS* specific antibody. There was a relation between the geometric mean titer (GMT), age and immune response among different breeds. The highest GMT was observed in Beni-Suef Governorate in Bandara breed followed by Dokki-layers, Montazah, then Dandarawi breed. (4920.32- 4475.67- 4062.46 and 3295.15 respectively)

The least GMT was reported in Kaloubia Governorate in Baladi breed one-day old 156.37 followed by Dokki (12 weeks) 606.72 then Dokki (8 weeks) 758.9 from Beni-Suef Governorate.



GMT for eggs was in Beni-Suef Governorate 1829.98.

4- Sodium Dodecyl sulphate-Polyacrylamide gel electrophoresis (SDS-PAGE) of cell proteins was used as a confirmatory test, the protein profiles of every strain had specific bands, which did not change by isolation. The different strains showed different bands, some of them were specific for every strain, so that it used for differentiation between different strains of mycoplasma including the vaccinal and infected strains. Analysis of a reference strain and nine random by chosen samples we found that *M. synoviae* reference strain showed 13 identical protein bands out of 21(ranging from 18893 to 91582 Dalton), while the field strains showed less identical bands, varied from 4 bands (isolate 6), 5 bands (isolate 3, 4), 7 bands (isolate 2, 7) to 9 bands (isolate 1).

5- In the present study, PCR technique was used for identification of mycoplasma isolated from local breed layer flocks. The used primers amplified target DNA of approximately 1.1 Kilo base pair in the all tested field isolates and *M. synoviae* reference strain. The primers amplified DNA of *M. synoviae*, but not *M. gallisepticum*, and the specificity of *MS-PCR* products detected by gel electrophoresis.

6- Arbitrary primed polymerase chain reaction (AP-PCR) is a more recent technique used for differentiation among different strains of the same mycoplasma species. Also it is a reproducible method for comparing the mycoplasma field isolates in epidemiological studies. The technique detects the genetic diversity in natural populations among field isolates.



7- Examination of five groups of *MS* native breed isolates using seven different types of antibiotics gave varied inhibitory zones. Most isolates were sensitive to Enrofloxacin, Erythromycin, Danofloxacin and Pefloxacin respectively. All isolates were found to be sensitive to Enrofloxacin and Ciprofloxacin with minimum inhibitory concentration (MICs) (0.12 - 0.48 $\mu\text{g/ml}$) indicating their useful effect during prophylaxis, treatment and control programs.