DIAGNOSIS OF CATTLE MASTITIS PATHOGEN MYCOPLASMA BOVIS BY ELISA

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Objective: The objective of this study was to identify in milk samples by ELISA test, the presence of antibodies to Mycoplasma bovis; the pathogen, causing MASTITIS which is one of the major health problems of dairy cattle and which leads to economical losses.

Material and methods: Milk samples were aseptically collected from 9 production units in Southeast Anatolia, Center Anatolia and Aegean and Marmara regions between July and August 2009. A total of 88 milk samples from the udders of 75 cows with MASTITIS and from at least one milk tank from each unit were used as the research materials. Milk samples were taken from cows having at least their third lactation and from cows with (subclinical/chronic) relapses although previously having MASTITIS (in one or more quarters) which was treated. For this purpose, with 3 week intervals, a total of 40 mL milk (10 mL from each quarter) was aseptically taken twice in sterile falcon tubes. Also, 50 mL milk from each bulk milk tanks were taken in sterile falcon tubes for analysis. Milk samples taken at the production units were sent to the laboratory the same day, maintaining cold chain. Bio-X Mycoplasma bovis ELISA Kit (Bio K 162, Bio-X Diagnostics Jemelle, Belgique) was used in the serological analysis. Processing of the test and evaluation of the results are done as recommended by the manufacturer of the kit.

Results: Examination of the results of the two analysis done at three week intervals revealed positivity in 73% (55/75) of milk from infected udders and 69% (9/13) from milk tanks. In some production units particularly, antibody increase was detected to continue between first and second analysis results.

Conclusion: Generally, Mycoplasma bovis positivity in cows with MASTITIS was found to be significantly high. When also considering the epidemiology, it is concluded that the infection is a significant source of risk for cattle farms. The failure of response to treatment in cows with MASTITIS supports the results, too. It becomes important to have an early diagnosis to initiate appropriate treatment at earliest. Bacterial culture is conventionally used to detect mycoplasmas. Cultures are time-consuming and can be compromised by bacterial contamination of the sample. Therefore, it is concluded that Enzyme-Linked Immunosorbent Assay (ELISA) can be routinely used as a rapid diagnosis method in the diagnosis of Mycoplasma bovis infection in cows with subclinical or chronic MASTITIS.

Keywords: Mycoplasma, MASTITIS, ELISA