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RELATIONS BETWEEN ELECTRICAL CONDUCTIVITY, CALIFORNIA MASTITIS TEST (CMT) AND SOME PHYSICOCHEMICAL QUALITY PARAMETERS IN THE DIAGNOSIS OF SUBCLINICAL MASTITIS IN DAIRY COWS IN TIARET REGION, WESTERN ALGERIA

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ABSTRACT

The use of efficient methods for the early diagnosis of subclinical mastitis is of great importance in the process of safe milk production. The aim of this study was to evaluate the effectiveness of indirect mastitis tests for diagnosis of the subclinical mastitis in dairy cows in Tiaret Region (western Algeria). California Mastitis Test (CMT) and Electrical conductivity method was determined by comparing the results with Ultrasonic milk Analyser (lactoscanSP) instrument to detect the subclinical mastitis and to improve milk quality. A total of 203 quarter milk samples collected from 52 apparently healthy lactating cows at different dairy cattle farms were examined and overall prevalence of 48.07 % and 27.58% was observed for subclinical mastitis in cow and quarter level, respectively. Results showed that the physicochemical components of milk samples such as Solid Not Fat (8.57 ± 0.10), Total solids (11.31 ± 0.21), Protein ($3.17 \pm 0.04\%$), salts (0.70 ± 0.01), density (1.0299 ± 0.57), freezing point (0.54 ± 0.01), PH (6.74 ± 0.06) and Lactose (4.72 ± 0.06) contents of the subclinical mastitis milk was less than the normal milk. Electrical conductivity (6.33 ± 0.11 mS/cm) of affected milk was significantly higher than normal milk. However, measuring resistance using Draminski mastitis detector was not effective in our study. Further, it was observed that all breeds are susceptible to mastitis and the incidence of subclinical mastitis increased with age and lactation number of the animal. Our results indicate that early cow subclinical mastitis detection may improve treatment strategies and milk production.

Key words: Algeria, lactoscanSP, California mastitis test, electrical conductivity, subclinical mastitis.