Cairo University
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Department of Microbiology

Assessment of lactate Dehydrogenase (LDH) and Alkaline Phosphatase (ALP) in Cattle Milk as an Indicator of Subclinical Mastitis

A Thesis Presented by

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(Microbiology)

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Approval sheet

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Abstract:

Subclinical mastitis is a very important health problem affecting dairy cattle. The objective of this study was to evaluate the diagnostic potential of milk LDH and ALP for the diagnosis of subclinical mastitis in dairy cows as compared to SCC, CMT and bacterial examination. A total of 103 milk samples were collected from clinically apparently healthy cows. These samples were examined using SCC, CMT and bacteriological isolation. 64 cows (62.13%) were considered to be affected by subclinical mastitis. The following bacterial species were recovered from these milk samples; *S. aureus* (18.75%), *S. epidermidis* (14.06%), *E. coli* (14.06%), *Klebsiella pneumoniae* (35.93%) and *proteus vulgaris*. (17.18%). The mean activities of LDH and ALP were higher in the milk samples collected from cows with subclinical mastitis and reached to 830.69 ±161.53 IU/ml and 121.89 ± 23.43 IU/ml, respectively, as compared to the mean activities of these enzymes in the normal group (344.51 ±385.94) and (57.08 ±45.12) IU/ml, respectively. The obtained results revealed that the LDH and ALP activities in milk samples are reliable sensitive biomarkers for detection of bovine subclinical mastitis.

Keywords: Bovine subclinical mastitis, SSC, CMT, Milk Lactate dehydrogenase (LDH), alkaline phosphatase (ALP).

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Dedication

To my beloved mother, father for supporting me all the way.

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