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The Effect of Subclinical Mastitis in Awassi Sheep on Milk Quantity and Quality in Northern Syria

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Abstract

Dairy sheep production systems contribute substantially to the livelihood of small-scale and resource-poor producers in the Middle East and Syria. Milk production and processing into yoghurt and cheese contribute as much as 48 % of the income of farmers in Northern Syria and the demand for these products is expanding. One of the most common and widespread diseases registered in the dairy sheep flocks in Syria is subclinical mastitis. The effect of mastitis on milk yield and milk and cheese quality was tested in nine sheep flocks during the milking season (from 11 April to 7 July) 2006 in El-Bab region, northern Syria. With the assistance of the farmers, the ten best producing Awassi milking ewes were selected in each flock, all ninety animals were tagged, and milk production and physico-chemical properties of the milk were monitored individually. California Mastitis Test (CMT) was used to detect subclinical mastitis. The milk was also analysed on a microbiological level with the purpose to detect which organisms could be considered as main causes of mastitis. Furthermore, the study included an in depth-analysis of the effect of management factors on incidence and intensity of subclinical mastitis.

A clear linear drop in milk quantity was observed in association with increased values of CMT ($p = 0.01$). This finding highlights the significant economic loss caused by the infection. Similarly, the quality of cheese (texture) decreased with the increased values of subclinical mastitis ($p = 0.01$). Microbiological analyses demonstrate that the presence of *Staphylococcus aureus* was clearly associated to high scores of CMT and strongly related to decreased milk yields. Moreover, inappropriate managerial practices like the feeding condition and cleaning of milking area correlated positively with microbic values, specifically staphylococcus (61 %) and molds (58 %), confirming the relation between the adoption of bad managerial practices and the presence of the major bacteria causing subclinical mastitis. Finally, incidence and degree of CMT was positively correlated with age of ewes, pH, electric conductivity and fat, protein and total solids contents of the milk. It was negatively correlated with milk yield, titratable acidity and milk density.

Keywords: Awassi sheep, milk production, milk quality, subclinical mastitis