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Comparison of Chemical Composition of Goat Milk from Farms and Individual Households in Khartoum State, Sudan

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Abstract

Goat was one of the first animals to be domesticated and it remained a popular animal serving the needs of man all over the world. Goat milk is one of the milk sources that is characterised by an economical, nutritional and medical importance, especially for children who suffer allergy from the cow milk. Since goat milk has a high importance as a source of nutrition for poor communities, the present study was conducted to evaluate some of the physio-chemical properties (fat, solids not fat (SNF), density, protein, lactose and acidity) of goat milk. Samples were collected in Khartoum State, Sudan during winter and summer seasons. Fifty samples of raw goat milk were collected from both farms and individual households (25 each). The average fat content, SNF, protein and lactose of goat milk samples were higher during winter season ($5.11\pm 0.2\%$, $9.3\pm 0.07\%$, $3.6\pm 0.03\%$ and $5.0\pm 0.04\%$, respectively). Similarly the average fat and SNF were higher in milk samples obtained from dairy farms ($5.4\%\pm 0.4\%$ and $9.1\pm 0.0\%$, respectively). The fat, lactose and acidity of goat milk samples were significantly ($P\leq 0.01$) different in goat milk samples collected from different sources. The acidity of goat milk samples was higher ($0.15\pm 0.0\%$) during summer. Moreover acidity and density of goat milk samples collected from different sources and during different seasons showed high significant ($P\leq 0.001$) differences.

The present study concluded that generally goat milk is of good compositional quality during winter season and that goat milk revealed high content of protein and lactose for the samples collected from individual households compared to those from dairy farms. Hence this study recommended the improvement of goat production in order to utilise its milk because of its nutritional and economical significance.

Keywords: Compositional quality, farms, goat milk, households, seasons, Sudan