

CHANGES IN PHYSICOCHEMICAL CHARACTERISTICS IN SAANAN GOAT MILK THROUGHOUT A LACTATION

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Values on cellular and physicochemical characteristics of milk are helpful to detect the degree of sub clinical and/or clinical mastitis in goats. Since these values are likely to change throughout a lactation, for diagnosis of mastitis, a correlation with the stage of lactation is necessary. The objective of the present investigation was to examine the changes in cellular and physicochemical characteristics of goat milk throughout a lactation.

Composite milk samples from 10 goats from a farm in Matara, were collected into sterile glass containers, sealed air tight, labelled, and transported in ice to the veterinary diagnostic laboratory of the University of Peradeniya. At the onset of sampling, the goats were either in their 2nd or 3rd lactation and were approximately 2 weeks after kidding. Seven successive samplings were done in approximately one-month intervals by the same person. The somatic cell count (SCC), California Mastitis Test (CMT) reading, electrical conductivity (EC) and chloride ion concentration (Cl %) were measured within 48-72 hours after sampling. The climatic data for the area were also recorded.

Sampling commenced in July 1999 and continued till January 2000. Only thirty-eight samples were processed and analyzed, as all the 10 goats were not sampled on every occasion due to unavoidable circumstances. The mean SCC ($\times 10^3/\text{ml}$) values on the 7 consecutive sampling dates were 380, 1055, 3087, 2495, 4460, 2931, and 1600; the EC (milliSiemens/cm) values were 4.80, 5.34, 4.32, 5.34, 4.55, 10.86, and 7.01; and Cl % values were 0.08, 0.08, 0.08, 0.06, 0.06, and 0.11%, respectively. The chloride ion concentration was not analyzed on the first sample collected. The average temperature, relative humidity, and rainfall during the period were 28.3° F, 78%, and 1200 mm respectively. The goats were fed with jak leaves, *Bracharia brizantha*, and Prima feed mixture, containing 9-12%, 8.5%, and 15% protein, respectively on dry matter basis).

A progressive elevation in the SCC during the first 4 months, followed by a decline during the last two months was observed. However, 16 out of 38 samples analyzed had CMT scores >1 indicating a substantial frequency of subclinical mastitis. Consequently, the increase followed by the decline in SCC remained even after disregarding the high SCC values corresponding to >1 CMT scores. There was no obvious difference in the values between the 2nd and 3rd lactation, at any of the sampling dates. A notable change was not evident in EC or Cl% throughout a lactation. There is evidence in these data to suggest that there is an increase in SCC throughout a lactation in Saanan goats and therefore, the SCC values must be interpreted in relation to the stage of lactation. However, further studies on a larger number of samples are necessary to establish this

phenomenon on SCC (if any), in EC, or CI % throughout a given lactation. It appears that CMT readings on goat milk do not correspond well with SCC values when performed 48 hours after milk collection. This finding becomes important when dispatching and transporting goat milk samples to a distant laboratory, in order to detect subclinical mastitis in the field.