

## **EFFECT OF DIFFERENT DAIRY CATTLE MANAGEMENT PRACTICES ON RAW MILK QUALITY IN SELECTED VETERINARY REGIONS IN HAMBANTOTA DISTRICT**

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### **Abstract**

The dairy industry is currently expanding in Hambantota district. However, milk producers and customers who collected milk from Hambantota raised concerns about milk quality. Therefore, this study was carried out to evaluate the effect of different dairy cattle management practices on raw milk quality. The study was conducted in the Hambantota district - Southern Province and covered five veterinarian regions. From convenience sampling method five veterinarian regions were selected and simple random sampling method was used to identify the smallholder dairy farms for milk collection. The total number of 450 milk samples was collected, obtained from 30 small-scale dairy farms operating under three different farming systems: intensive (n=5), semi-intensive (n=10), and extensive (n=15). Milk samples were analyzed at the laboratory of Malindu Dairy (PVT) LTD (MDL) in Agunukolapalassa. One-way ANOVA using Post-hoc Least Significant Difference (LSD) and Student's T-test were used to compare milk quality parameters among farming system and standard value. All the statistical analyses were performed at significant level 0.05 ( $P < 0.05$ ). According to the results, milk KQ and SNF % values are higher than in the extensive systems compared to intensive and semi-intensive systems. Significantly high lactometer reading was recorded in extensive farming system. There are no significant differences between all three farming systems on Fat %, TS %, Lactose %, Protein %, Water %, Alcohol and COB. Most of the milk samples in this study area were acceptable good quality level. In all the milk samples, protein, lactose, fat, SNF and TS levels were significantly ( $P < 0.05$ ) higher than standard value. Further lactometer reading and Keeping Quality (KQ) were recorded highest value in extensive farming system than other farming systems and standard value. According to my findings, the extensive farming system's milk quality is higher than the other dairy cattle farming systems in Hambantota selected area. In future, welfare studies of the farming system have to be considered for the improvement of milk quality.

Keywords: Dairy industry, Farming systems, Milk composition, Milk quality, Smallholder dairy farms