

Survey of postharvest handling, preservation and processing practices along the camel milk chain in Isiolo district, Kenya

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Abstract

Despite the important contribution of camel milk to food security for pastoralists in Kenya, little is known about the postharvest handling, preservation and processing practices. In this study, existing postharvest handling, preservation and processing practices for camel milk by pastoralists in Isiolo, Kenya were assessed through cross-sectional survey and focus group discussions. A total of 167 camel milk producer households, 50 primary and 50 secondary milk traders were interviewed. Survey findings showed that milking was predominantly handled by herds-boys (45.0%) or male household heads (23.8%) and occasionally by spouses (16.6%), sons (13.9%) and daughters (0.7%). The main types of containers used by both producers and traders to handle milk were plastic jerricans (recycled cooking oil containers), because they were cheap, light and better suited for transport in vehicles. Milk processing was the preserve of women, with fresh camel milk and spontaneously fermented camel milk (suusa) being the main products. Fresh milk was preserved by smoking of milk containers and boiling. Smoking was the predominant practice, and was for extending the shelf life and also imparting a distinct smoky flavour to milk. The milk containers were fumigated with smoke from burned wood of specific tree species such as *Olea africana*, *Acacia nilotica*, *Balanities aegyptica* and *Combretum* spp. Boiling was practised by primary milk traders at collection points to preserve milk during times when transport to the market was unavailable. Milk spoilage at the primary collection point in Kulamawe was aggravated by lack of cooling facilities. At the secondary collection point in Isiolo town, milk was refrigerated overnight before onward transmission to Nairobi. The mean quantity of traded milk was 83.2 ± 3.8 litres. The main problems experienced by milk traders in Isiolo included milk spoilage (43.0% of respondents), delayed payments—after one or two days (19.9%), loss of money due to informal courier (12.2%), low prices of fermented milk (10.9%), milk rejection by customers in Nairobi (7.1%), inadequate supply during dry season (3.5%), loss of milk due to bursting of containers (2.1%) and milk not being supplied by producers due to insecurity (1.3%). In-depth understanding of the postharvest handling, preservation and processing practices would help to devise appropriate strategies that would increase the quantity and improve the quality of marketed camel milk. Such strategies should include the improvement of infrastructure such as milk transport, collection, cooling and processing facilities of suitable capacity.