

Full Length Research Paper

Marketing of dairy goat products in Kenya: A survey of the dairy products in selected supermarkets in Nyeri, Meru and Kiambu counties

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Dairy goat farming is a significant source of income, particularly for low-income families. However, 75% of the dairy goat products business is still unorganized in Kenya, making its marketing difficult. This study surveyed dairy products in selected supermarkets in Nyeri, Meru and Kiambu counties. The purpose was to identify the types of dairy products sold in supermarkets, the sales preferences, reasons for stocking and not stocking the dairy goat products and perceptions about the dairy goat products. The study targeted all the supermarkets that sold dairy products, excluding those that did not sell dairy products or were not willing to be surveyed. A sample of 40 supermarkets and 5 milk dealers in the three counties was obtained through purposeful sampling. Close-ended questionnaires were administered to managers or appointees of the outlets. According to the findings, 10 types of dairy products were stocked by the outlets as follows: Raw cow milk (11%), pasteurized cow milk (87%), long life cow milk (82%), cow milk yoghurt (93%), ghee (24%), cow mil ice cream (67%), cow milk butter (31%), cow milk cheese (36%), cow sour milk (76%) and pasteurized goat milk. Out of the 45 supermarkets/milk vendors surveyed only 5 outlets sold the dairy goat products (pasteurized milk) which thus indicate the gap in the marketing of dairy goat milk and its products in the study counties. The dairy goat products were not stocked because the products were not available (63%), lack of customers' awareness (40%), they were not preferred by customers (18%) and high price (10%). The dairy goat milk was stocked due to customers' preferences (100%). The general perception of the supermarkets was that dairy goat milk was moderately preferred (36%), highly (4%) and not preferred (60%) mainly due to lack of customers' awareness. Thus, measures should be put in place to promote dairy goat milk as an alternative to dairy cow milk due to its high nutritive value and potential.

Key words: Dairy goat products, marketing, supermarkets, sales, preferences, stocking.

INTRODUCTION

Kenya's dairy industry is one of the most important sectors of the economy. The country remains one of

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Africa's largest milk producers, contributing 30-40% of Africa's 5% of world milk production (KNBS, 2019). The world's milk is predominantly cow milk, followed by buffalo milk; the leading producers being Asia (30%), European Union (28%), North and Central America (18%), South America (9%), other European countries (9%), Africa (5%), and Oceania (5%) (Burke et al., 2018). Small scale producers dominate the Kenyan dairy industry. Estimates from the Kenya Dairy Board indicate that milk from livestock stood at 5.2 billion litres annually, of which cow milk account for the largest share (75%), goat milk was about 273,000 tonnes and camel milk, about 1,165,000 tonnes (KDB, 2019). The milk producers sell to processors or traders with the milk flow from traders consisting of two profiles, that is, members of a Dairy Traders Organization (DTA) or non-DTA members. Non-DTA traders sell to mobile retailers, while DTA traders sell to fixed retailers (hawkers or roadside vendors) (Kiambi et al., 2018). The Kenya Dairy Board has licensed 30 milk processors and 67 micro dairies, the bulk of which are privately held, with a total milk processing capacity of around 3.75 million litres per day in 2018 (KDB, 2019). Products such as liquid milk, milk powders, cheese, butter, yogurt, as well as ice cream made from milk obtained from cows, buffalo, camels, goats, or other similar animals are classified as dairy products. Kenya's annual milk and dairy product consumption per capita, which is currently 110 l of liquid milk equivalent, is expected to double to 220 l by 2030. Goats are an important part of the livestock industry because of their capacity to adapt to harsh conditions, making them ideal for landless and marginal farmers. Goats provide a substantial contribution to the supply of milk and milk products, as well as to the rural economy and health. Goat milk contains a higher amount of Ca, Mg and P than cow and human milk (Bhattarai, 2014). Goats also provide farm manure, meat and income (FAO, 2011; Chenyambuga et al., 2014). Dairy goat farming is emerging as a high-return option for Kenyan small-scale farmers, owing to the health and nutritional benefits of the milk, as well as low production costs and ease of management (Mbindyo et al., 2018). Further, the potential of dairy goat farming as a source of livelihood for a large number of farmers, among other factors, is likely to contribute to Sustainable Development Goals 1 and 2 (Karanja-Lumumba, 2010; Al-Khaza'leh et al., 2015; Gebremedhin and Tesfaye, 2015; UN, 2015d). Statistics indicates that Kenya had about 400,000 dairy goats, 80% of which were kept in the Mt Kenya Region (Kikwatha and Kyalo, 2020). In the Mount Kenya Region, the dairy goat population is the highest in Nyeri County with 84,800 goats followed by Muranga County with 51,116 goats (Mbindyo et al., 2018). Though dairy goat production is playing an important role in the improvement of farmers' income especially in Kenya, it faces constraints such as lack of breeding stock, diseases, inaccessible credit, lack of dairy management

skills, un-assured markets, poorly organized marketing channels, unavailability of commercial feeds formulated for dairy goats, acceptance of goat milk and lack of goat milk processing plants (Mbindyo et al., 2014; Ndegwa et al., 2001). Farmers' and consumers' awareness of the market demands within and outside the dairy goat communities still remains low. Although knowledge of the flow of dairy goat milk and its products from producers up to the consumers is important an overview is lacking especially in the Kenyan context. FAO (2011) estimates that over 70% of the milk sold in Kenya originate from dairy cows with only 0.02% from dairy goats. Whereas research has focused more on production, the supply side has been given less attention. This study sought to document the marketing of dairy goat products in three counties of Kenya.

METHODOLOGY

Study sites

Meru is a town in Kenya's eastern region. It is the headquarters of Meru County and the country's fifth-largest metropolitan center. According to the Kenya National Bureau of Statistics (KNBS, 2019), Meru County urban population is estimated to be 138,918 people, while the rural population is 1,406,796 people. Nyeri County is located in the central region of Kenya. Its capital and largest town is Nyeri. It has a population of 759,164 of which 49639 are urban (KNBS, 2019). Kiambu County is located in the central region of Kenya and it has a population of 2,417,735 people. Its capital is Kiambu Town with an approximate population of 29723 (KNBS, 2019). In both counties, agriculture is the principal source of household food, raw materials for agro-based industries, and revenue with the farmers growing a number of crops such as coffee, tea, maize, beans etc. and keeping livestock such as dairy cows, sheep, goats and poultry among others. The three counties are the country's highest concentration of dairy goat activities, including production, processing, and consumption.

Data collection, analysis and reporting

This section discusses data collection, analysis, and reporting. This study focused on supermarkets in the counties of Kiambu, Nyeri, and Meru. The target population was supermarkets and milk vendors in these regions which were mainly located in the urban areas of these regions. A descriptive survey methodology was adopted for this study. The target population for this study was all the supermarkets in Meru Town, Nyeri Town and Kiambu Town. Purposive sampling was used to obtain a sample of 40 supermarkets and 5 milk vendors in the three counties as follows: Nyeri (6), Meru town (3) and Kiambu (36). All available supermarkets that sold dairy products were targeted; however, those that did not sell dairy products or those that were not willing to be surveyed were excluded. Close to all available supermarkets surveyed were medium to small scale in size and were mainly located in the towns. A closed-ended questionnaire was administered to the managers of the outlets or their appointees coupled with an observation of the dairy products stocked in the outlets. Among the questions covered in the questionnaire include the type of dairy products stocked, the preferred dairy products they stocked, the sales preferences of the stocked dairy products, the type of dairy goat milk and products they stocked, the reasons for

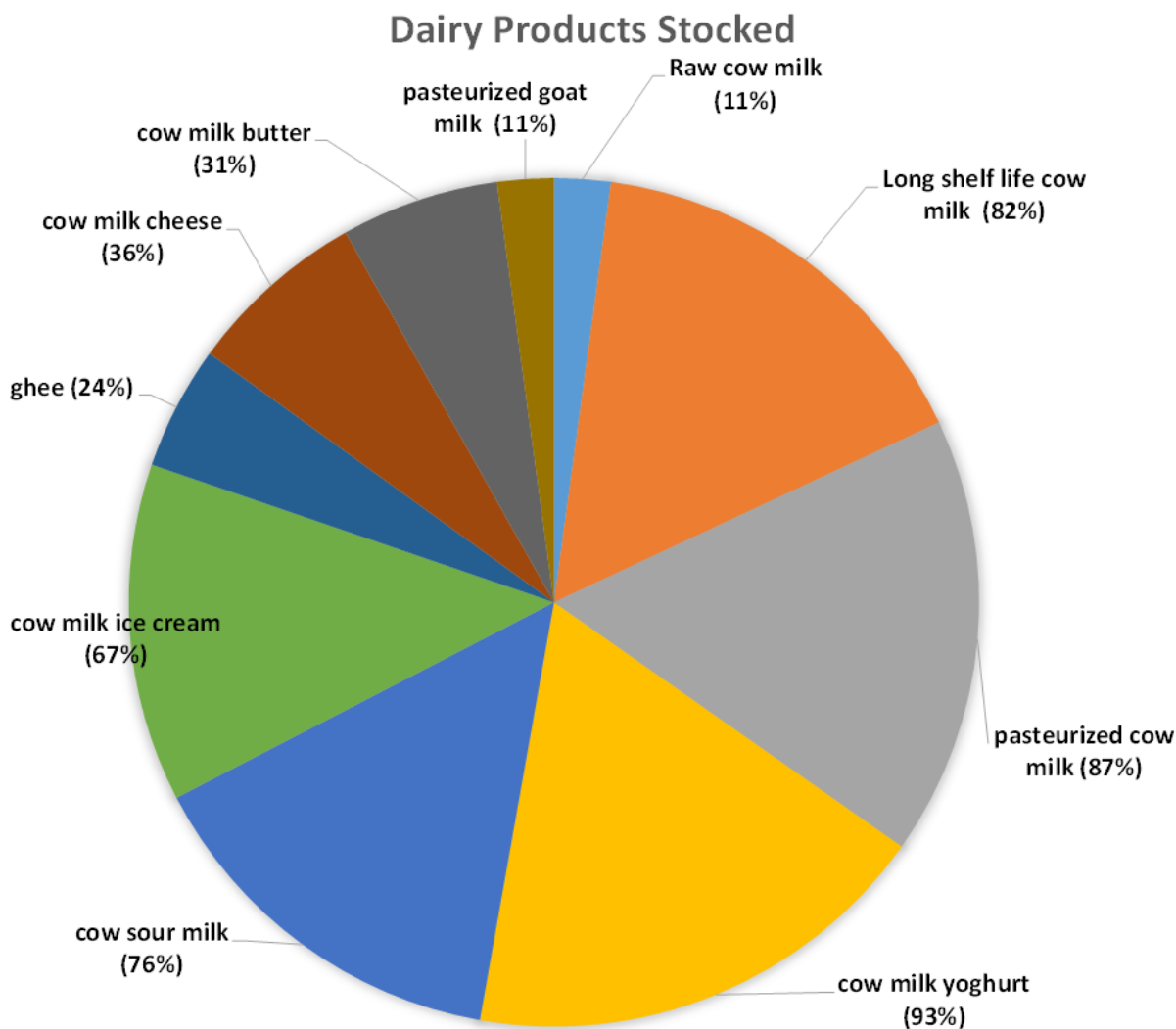


Figure 1. Dairy products stocked in selected supermarkets in Nyeri, Meru and Kiambu Counties of Kenya. Source: Field survey data.

stocking and not stocking dairy goat milk and its products. Survey data were analyzed in SPSS version 25. Descriptive statistics were used for reporting the findings of this study. All ethical considerations were taken into account when conducting the study.

RESULTS

Dairy products in the market

The results in Figure 1 indicate that within the dairy products, ten types of products were stocked by the supermarkets/milk vendors in the study areas as follows: Raw cow milk (11%), pasteurized cow milk (87%), long shelf life cow milk (82%), cow milk yoghurt (93%), ghee (24%), cow milk ice cream (67%), cow milk butter (31%), cow milk cheese (36%), cow sour milk (76%) and pasteurized goat milk (11%). Yoghurt remained the most stocked dairy product while raw cow milk (unprocessed

milk) was the least stocked in all the supermarkets. . Among the dairy goat products only pasteurized milk was available in 5 outlets in Kiambu County only.

Sales preferences of the dairy products

Table 1 reveals that generally, cow milk and its products dominate the Kenyan dairy industry market with long shelf life milk being the most sold dairy cow product followed by pasteurized milk and yoghurt in that order. Raw cow milk and pasteurized goat milk were ranked as the most preferred dairy product that sold very fast compared to ghee, cheese and butter which were the least sold dairy products in the supermarkets. Although yogurt was the most stocked product in all the supermarkets it was however ranked fourth when it came to sales preferences.

Table 1. Dairy products stocked in selected supermarkets in Nyeri, Meru and Kiambu Counties of Kenya.

Dairy product	Number	Ranking	Sales preferences ranking
Raw cow milk	6	9	1
Long shelf life cow milk	37	3	3
Pasteurized cow milk	39	2	2
Yoghurt (from cow milk)	43	1	4
Sour cow milk	34	4	5
Ice cream (from cow milk)	30	5	6
Ghee (from cow milk)	11	8	7
Cheese (from cow milk)	16	6	8
Butter (from cow milk)	14	7	9
Pasteurized goat milk	5	10	1

Source: Field survey data.

Table 2. Reasons for stocking and not stocking dairy goat products.

Reason for stocking	Frequency	Percent	Reasons for not stocking	Frequency	Percent
Customer preferences	5	100	Products not available	25	63
Products are available	5	100	Lack of customer awareness	16	40
			Not preferred by customers	7	18
			High price	4	10

Source: Field survey data.

Table 3. General perceptions of dairy goat products.

Perception	Frequency	Percent
Moderately preferred	16	36
Highly preferred	2	4
Not preferred	27	60

Source: Field survey data.

Reasons for stocking and for not stocking dairy goat products

Table 2 presents the reasons for stocking and not stocking the dairy goat products. The 5 supermarkets stocked dairy goat milk because of customers' preferences and availability of the products (100%) from on farm processing plant known as Toggs within the County. The dairy goat milk products were not stocked due to the following: the dairy goat products were not available (63%), lack of customers' awareness (40%), not preferred by customers (18%) and high price (10%). Observing the prices of pasteurized cow milk and goat milk in the surveyed outlets indicated that the price of goat milk was high with half litre costing Kshs. 167 (1.45\$) compared with that of cow milk retailed at Kshs. 55 (0.48\$).

General perception of dairy goat products

The general perception of the supermarkets is indicated in Table 3. The study reveals that dairy goat products were moderately preferred (36%) and highly preferred (4%). However, a large proportion of the customers (60%) did not prefer dairy goat products due to lack of awareness of its nutritional benefits.

DISCUSSION

As evident from the results, dairy cow milk and its products dominate the Kenyan dairy industry. Cow milk and its related products dominating the Kenyan dairy industry are not surprising since the same finding is common almost all over the world. In many instances, a

goat and in extension its products are universally considered as "poor man's cow" (Iqbal et al., 2008). This maybe the possible reason dairy products are rarely value added especially in developing countries. In this case out of the 45 supermarkets and milk vendors surveyed only 5 outlets sold dairy goat pasteurized milk (11%), which thus indicates the gap in marketing in dairy goat milk and its products in the study counties. Examining the sales preferences indicates that raw cow milk and pasteurized goat milk were the most preferred dairy products in terms of sales while ghee, cheese and butter were the least preferred dairy product in the supermarkets in terms of sales. This finding is important since it indicates that there is potential for dairy goat products especially the raw and pasteurized milk products. This coincides with the findings of Miller and Lu (2019) who indicate that due to increased consumers' demand, high prices, and climate change, new dairy goat industries are emerging and rapidly expanding. The results reveal that the major reasons for not stocking dairy goat products are the products were not available, lack of customers' awareness, the dairy goat products not being preferred by customers and high price. This finding is corroborated with the study findings of Ocaik (2013) who found that the main reason for low goat milk consumption in Turkey was due to low commercial availability of the product. One of the possibilities of these finding is that there may be little output for processing as indicated by Kipserem et al. (2011). The study indicates that the factors of production may have a significant impact on the total output of dairy goat milk produced. Another possibility as indicated by Mbindyo et al. (2018) is that one of the biggest challenges in Meru County, in particular, was the lack of market for dairy goat milk. This is in line with the findings of Ogola et al. (2010), who stated that the dairy goat industry was hampered by a lack of market and distribution channels. The general perception of the supermarkets was that although dairy goat products was moderately and highly preferred by customers, a large proportion of the consumers did not prefer the dairy goat products due to lack of awareness of its existence and nutritional benefits. A similar study in South Africa indicates that majority of farmers were unaware of the nutritional benefits of goat milk but when the nutritional benefits of goat milk and/or its products were explained to them, a large number were willing to consume goat milk and/or its products (Idamokoro et al., 2019). As indicated by Ribeiro and Ribeiro (2010), goat milk is advantageous since its chemical properties can be used to make a variety of products such as low-fat, fortified, or flavored fluid beverage products and ultra-high temperature (UHT) milk, fermented products like cheese (McSweeney, 2007), buttermilk, or yogurt, frozen products like ice cream or frozen yogurt, butter, condensed/dried products, sweets, and candies. Other specialty items that are becoming popular with consumers include the use of goat milk in products that

deal with hair, skin care, and other cosmetics. Thus, measures should be put in place to promote dairy goat milk as an alternative to dairy cow milk due to its high nutritive value (Turkmen, 2017; Jerop et al., 2014; Ali et al., 2010). Thus, measures should be put in place to promote dairy goat milk as an alternative to dairy cow milk due to its high nutritive value and potential (Bhattarai, 2014; Agustina et al., 2021).

Conclusion

This study indicates dairy goat products were not available in supermarkets or among milk vendors in Meru and Nyeri counties but they were available in a few outlets in Kiambu County. The demand for the dairy goat products is high which is evident from the high ranking of its sales preference by the outlets. The lack of customers' awareness of the dairy goat products' nutritional benefits and non-availability of the dairy goat products are major factors affecting the marketing of the dairy goat products. Thus, there is a huge potential for dairy goat products in the market that can be exploited. Creating consumer awareness of important nutritional and health benefits of dairy goat milk and its products is the key to capturing the existing market opportunities for dairy goat milk and its products.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interest.

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