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**MILK QUALITY CONTROL AND REGULATION IN DAIRY
PRODUCTION: A CASE OF DAIRY PRODUCERS IN KIKUYU
DIVISION, KABETE DISTRICT, CENTRAL PROVINCE - KENYA**

By

Tuei, B. Chepkoech

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MILK QUALITY CONTROL AND REGULATION IN DAIRY PRODUCTION: A CASE OF DAIRY PRODUCERS IN KIKUYU DIVISION, KABETE DISTRICT, CENTRAL PROVINCE - KENYA.

B. Chepkoech Twei

Ministry of livestock development, PDLP's office –Nairobi Province

P. o. Box 47010 00100 Nairobi, Tel : 0723 3012777/0736951273

Abstract

Regulation in the dairy industry targets the small scale producers and milk traders with the aim of ensuring that they meet requirements for milk quality control. The paper presents results from a study carried out in Kikuyu division, Central province of Kenya that assessed the challenges and the benefits accrued to on farm clean milk production and the level to which farmers were aware of regulations governing the dairy sector. The farmers were producers of milk only and possessed no milk bar licenses, public health licenses, business producer licenses nor single business licenses. They had little knowledge of laws regulating dairying with 40% identifying Kenya Dairy Board (KDB) as law enforcers, 20% as law enforcers and educators while 40% had no knowledge of their mandate. Farmers adopt hygienic milk production and handling if the practices are cost effective and simple to understand. Those who carried out milk production, disease control and facility hygiene were 55% while 21.1% tested for mastitis and another 22.9% able to keep the zero grazing units clean. Information on milk quality control was acquired from extension workers from the Ministry of Livestock development by 52% of the producers, 36% from the veterinary department of the same ministry and 12% through seminars. There is need to develop pro-poor interventions, strengthen infrastructure, farmer groups and security so as to maximize the production of quality and quantity of milk.

Keywords: *milk quality control, regulation*

Introduction

Kenya is the leading milk producer in East Africa, producing an estimated 3.2 billion litres per year by approximately 600,000 small holder farmers producing an estimated 75% of Kenya's milk supply. (Mwambia, 2006). Commercialization of the dairy industry is only possible if the quality of milk and milk products is improved. Wahome (2006) reported that dairying has a huge potential of turning around the economy in Kenya especially in the rural areas but is littered with hurdles particularly poor quality of milk and hygiene along the supply chain. In Kenya the quality of both formal and informally marketed milk in Kenya does not meet the Kenyan national quality standards and bacterial growth occurs before farmers sell their milk. (Mwangi 2000). The main role of Government of Kenya is to create a conducive environment for private

sector investment in milk production, processing, marketing and delivery of key support services. This function is carried out by KDB in collaboration with the Ministry of Livestock Development where their mandate is to improve producer price of milk, lower consumer price and increase milk intake by processors. According to Owango et al., (1998), the sale of raw milk in urban areas was considered illegal and those found retailing milk in such areas were harassed. Only Kenya Cooperative Creameries (KCC) was licensed by Kenya Dairy Board (KDB) to retail milk to scheduled urban areas, however sale of raw milk was tolerated in other areas including retail sales by District Dairy Farmers Cooperatives. However, over time the regulatory environment has changed with the informal milk market now licensed and the milk traders now paying KDB a cess fee of 20 cents per litre of milk produced on behalf of the producers. The quality of milk policy is such that the roles of KDB are to be streamlined, self regulation enhanced and a transition towards a stakeholder managed institution.(MoLDF , Draft Sessional paper in dairy development 2007).

Methodology

A total of 85 dairy producers were sampled from Kikuyu division, Kabete District in Central Province, Kenya. The sample was selected in stages using purposive and stratified sampling. Farmers were drawn purposively from market outlets situated in three location in the district. Samples were drawn from each stratum by simple random sampling. Sampling size was 10% representative of the target population of 850 dairy producers.

professionals in dairy sector who interacted with the farmers. An interview guide was used to assist in the discussion with probing and clarification being made. They included officials from the Ministry of Livestock, KDB, cooperatives, self help groups and a milk traders group. An observation checklist was used to record events taking place in the farm from which general notes were made. The guidelines in the checklist generated information required such as the level of milk hygiene at farm level, milk handling practices, milking procedures and type of milking equipment in use.

Data analysis

Quantitative data was collected by use of questionnaires. These were checked to ensure that the questions were answered correctly. The open-ended questions were summarized into meaningful variables and given variable values. Classification of variables was also done where this was required. This was then analyzed using Statistical Package for Social Scientists (SPSS) computer software. The data was presented in tables.

Qualitative data generated from key informants was analyzed by noting themes that emerged from their opinions. It also involved classifying information and organizing data according to research questions from which conclusions were drawn. The observations recorded in the field by the use of an observation checklist also enriched the quantitative data collected. These gave a

reflection of similarities and differences in related information collected and offered a base for comparing data collected. This was used to better evaluate the extent to which findings were trusted and inferences made to them.

Results and discussions

Milk quality control by dairy producers

Dairy production is a beneficial income generating activity in the area where there are established formal and also informal markets in which milk quality control is emphasized. In the area the farmers breed kept good breeds of dairy cows that were high milk producers. Findings show that 55% practiced clean milk production, disease control and facility hygiene. Milkmen maintained personal hygiene and majority cleaned udder before milking. It was noted that most used aluminum containers for milking although plastic containers were also used. These containers were washed and dried in the sun. A relatively low percentage (22.1%) of respondents test for mastitis so as to control contamination of milk. Contamination of milk resulting from the farmers' lack of knowledge and poor hygiene of zero grazing units was high with only 22.9% able to keep the units clean. Units observed were dirty, reasons being lack of capital and labour for maintenance of concrete floors. The study established that producers get to know about milk quality control from government extension workers (52%), 36% through the veterinary officers and only 12% through seminars. Milk sold to the cooperatives was safe for consumption since it was free from antibiotic residues. A total of 83.5% of the participants observed withdrawal period of 3 days for those animals treated with antibiotics. In addition milk from animals that had calved down was not delivered to the cooperatives with 90.3% of the participants doing their deliveries after 7 days to avoid contamination of milk with colostrums. Moreover those that deliver milk with colostrums have their milk tested, rejected and penalized by cooperatives. The majority of the farmers were in agreement that good quality milk stayed longer before spoilage and that it assured them of good markets since such milk was never rejected and therefore always paid for.

Milk marketing and income

The study found out that most farmers sell their milk to the dairy cooperatives. However the same farmers sell some milk to other outlets like to milk hawkers in an attempt to secure a higher price for their produce. This explained the variation in price per litre of milk of between Kenyan shillings (Kshs) 29 – 40 with 67.1% farmers having sold their milk at a price of Kshs 27 per litre. The findings also showed that most farmers retained on average of 4 litres of milk per day for feeding the calves and home consumption. About 12.9% of the respondents obtained on average Ksh.20, 000 per month from sale of milk. Dairying is an income generating activity in which savings can be improved through proper feed management. The findings showed that milk was lost through accidental spillage rather than by spoilage with 77.6% losing 1 litre of milk per day, during milking while the cooperatives lose 300 litres per month through spillage during

transportation. There were indications that milk spoilage occurs in the rainy season when conditions are conducive for bacterial growth.

Regulation

The Study found out that the dairy producers possessed no licenses being producers of raw milk only. They did not venture into value addition that would have otherwise necessitated that they acquire permanent business premises that have white walls, water and electricity and therefore qualify for a public health license. Those handling 500-3000 litres of milk were classified as mini dairies and pay KDB Kshs 6000 for licensing. In addition KDB required a primary producer license of Kshs2500 from those who sell milk directly to consumers at farm-level and a cess fee of 20 cents per litre of milk produced. The farmers were not aware of regulations governing the dairy industry even if they are abiding to the laws through the cooperative societies. Some 40% of the farmers were aware that the KDB are law enforcers only while 40% they are educators and law enforcers while 20% have no knowledge of their mandate. This correlates with findings that farmers get to know about milk quality control measures through seminars. In spite of the fact that farmers abide by the dairy regulation through the cooperatives, they are not informed about them because they are at primary level of milk production. The farmers are aware that KDB is the regulation authority in the dairy sector and have come in contact with them during seminars as educators.

RECOMMENDATION

In order to improve milk quality from smallholder farms there is need to avail new designs of for small amounts of milk, affordable, stable and well suited for public mode of transport. Strengthening farmer and stakeholder groups will empower them to lobby for services such as credit, education, milk cooling facilities, roads or piped water all of which will improve the quantity and quality of product milk.

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