Chapter 2
The Role of Milk Quality in Improvement of Dairy Production

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EXECUTIVE SUMMARY

Milk is a complete feed, composed of carbohydrates, proteins, vitamins, and minerals of great importance for human nutrition, in addition to playing a representative role in aspect economy. However, milk production is very affected by market variations, such as production costs, influences of exportation activities of the product and international market. To avoid these challenges, every component in the production chain must focus mainly on the sustainability and profitability of dairy farming, especially the producer, the first link in the chain. In this chapter, the relationship between indexes and different areas of the milk production chain is presented, that could generate information able to aid the sustainability and profitability of dairy farms. Also, it will discuss each of these components and its relation to obtaining the maximum amount of information possible to contribute to the dairy industry.

INTRODUCTION

Animal Science Institute of Nova Odessa is a research institution operating in São Paulo state, in which the main objective is to develop and apply research focused on sustainable agriculture, for local farmers. However, through partnership with other commercial and research institutes, the results obtained in research projects are extensively used in the country. Another important contribution to agriculture and husbandry is to transmit knowledge and technology to farmers, in order to implement these results for improvement. The Institute has research projects in dairy and beef cattle, sheep farming, swine, poultry and aquaculture.

Our team belongs to The Milk Quality Laboratory, with research focused on improvement of milk quality in production systems, using data from herds for diagnosis of potential problems on farms.

CASE DESCRIPTION

Milk is a product obtained from complete and uninterrupted milking under hygienic conditions of healthy, well-fed, and resting dairy cows. Milk from other animals must be named according to the species they belong. It is considered an easily accessible, complete and one of the most nutritious foods in the world due to its significant amounts of water, proteins and high quality fats, in addition to minerals such as calcium, sodium, potassium, selenium, magnesium and vitamins such as riboflavin, vitamin A and vitamin B12. Due to its complex composition, it is considered of great importance for the health and immunity of neonates, as well as of adult humans.

The chemical classification of milk can be stratified into more than 50 chemical compounds of varying importance, thus defining its quality. Quality is one of the main points for the production chain to achieve sustainability and profitability. In this context, two scenarios can be found: the first scenario is focused on the dairy farm, in which quality can be used for milk production monitoring and planning in order to ensure commercialization and profitability of the activity. In addition to the dairy farm scenario, the industry scenario is also highlighted, which has milk quality as a challenge and incentive for production, industrial yield and variety of products according to the consumer market and microbiological safety.

Involved in both scenarios, legislation and resolutions stand out, which establish minimum acceptable standards of quality and good practices for obtaining the raw material, processing and marketing of the final product. The establishment of these standards aims to guarantee the marketing of safe products for the national and international market.

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