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Socioeconomic Impacts of Adulteration in Goat Cheese Production to Public Health in Brazil

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Abstract

The authenticity of foods became a serious world-wide problem. It is becoming more and more important to detect the introduction of adulterated food in the market. The adulteration of goat cheese is becoming more frequent in Brazil. Seasonality in production of goat milk and higher prices than those for cow milk are the main reasons why producers are adulterating goat cheese. Preliminary results show that each year about 70 to 245 thousands of new cases of allergy to cow milk in children up to 12 months of age are reported in Brazil. Thus, the development and adoption of fraud detection techniques become compulsory. This study aims to assess the socioeconomic impacts of adulteration of goat milk products with cow milk. The main impacts to the public health system are related to the cost of treatment of allergic children after consuming cow milk instead of goat milk products. In Brazil, the most used methods to detect IgE antibodies, which are responsible for the allergy, are the RAST and the skin test with immediate result. Another alternative is to remove cow milk from allergic children's diets. These treatment and prevention methods are expensive and hard to implement in public health programs. Genetic techniques like molecular markers became useful to check the quality of new food products, enabling the identification of origin of components of contained in those products. With this technique it is possible to detect cow milk in goat cheese through the differences of molecular weight of the β -casein fragments. With this study it was possible to show that, comparing to other techniques, molecular markers represent a fast and cost-effective method to detect goat cheese adulteration with cow milk. This improves food safety to consumers with cow milk allergy and thereafter, increases the demand for original goat cheese, benefiting the whole chain, including farmers, dairy industries and traders.

Keywords: Allergy to cow milk, economic of biotechnology, molecular markers