

Abstract

The adulteration of milk fat with foreign fat has been and still is a major concern in the dairy industry. The increasing number of food producers and the outstanding amount of imported foodstuffs enables the producers to mislead and cheat consumers. In addition, ignorance and unfair market behaviour may endanger consumer health and misleading can lead to poisoning.

Milk fat is one of the most expensive commodity fats on the market; therefore, the detection of foreign fat in milk fat is a real issue. Introduction of vegetable fat in milk fat reduces the milk fat content of milk thereby reducing the quality and the nutritional value of milk.

The current research was carried out at Industrial Technology Institute (ITI). The Industrial Technology Institute is a wholly owned institute of the Government of Sri Lanka and functions under the jurisdiction of the Ministry of Science and Technology.

The study focused on developing a quick and easy method for the detection of vegetable fat in milk fat. Accordingly using the fatty acid profile of milk to determine the presence of vegetable fat in the milk powder samples was the best method compared to the others. The characteristic feature of milk is its fatty acid composition, which mainly consists of short chain fatty acids, whereas the vegetable fats consist mainly of long chain fatty acids. And hence milk fat purity or more precisely adulteration of vegetable fat in milk can be detected by capillary gas chromatography using the fatty acid profile of milk. .

According to the SLS the milk should contain purely of milk fat and should not contain any traces of foreign fat. Therefore customers should be informed of the addition of vegetable fat in milk fat. Out of the 22 samples which were tested for adulteration, only two samples had added vegetable fat, which cannot be considered as an adulterant since it's mentioned in the ingredients. So the 22 samples of milk powder imported by Sri Lanka are purely of milk fat and safe to consume.