

**COMMUNITY AWARENESS CONCERNING ADULTERATION OF MILK**

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**Abstract:**

*Milk is an essential food for both children in urban and rural areas. A wide variation of adulterants mixing from both regions was observed, which causes diarrhoea, eyesight problems, headaches, etc. The purpose of this study is to allow the consumer to become aware of a few common contaminants in milk and create awareness and educate them by using some household tests for noticing adulterants in milk so they can save themselves from this.*

**Keywords:** Milk, Consumer, Adulteration, Awareness.

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**Introduction:**

Milk is a nutrient-rich liquid food produced by the mammary glands of mammals. It is the primary source of nutrition for young mammals (including breastfed human infants) before they can digest solid food<sup>1</sup>. Early-lactation milk, called colostrum, contains antibodies that strengthen the immune system and thus reduce the risk of many diseases. Milk contains many other nutrients<sup>2</sup>, including protein and lactose. Interspecies consumption of milk is not uncommon - many human beings consume the milk of other mammals<sup>3-4</sup>. India being primarily a vegetarian society, relies on milk rather than meat for its nutritional needs. A glass (250ml) of unadulterated whole milk gives around 146 kcals; 8gms of fat and protein with 257mg of calcium. Calcium and other vitamins and minerals in milk make it an essential part of a healthful diet for people of all ages. The benefits of drinking milk include strengthening bones, improving cardiovascular and oral health and even relief from PMS.

Food is essential for the sustenance of life. It should be pure, nutritious, and free from adulteration for proper human health maintenance. Adulteration of food cheats the consumer and can pose a severe risk to health in some cases. Food adulteration is the deliberate contamination of low-quality food materials, cheap, non-edible or toxic substances. Adulteration of milk reduces milk quality and makes it hazardous to health. Adulterants like soap, acid, starch, table sugar, urea, ammonium sulphate and chemicals like formalin may be added to the milk. Powder milk is adulterated with Melamine<sup>5</sup>.

Milk adulterants have hazardous health effects. The detergent in milk can cause food poisoning and other gastrointestinal complications. Its high alkaline level can also damage body tissue and destroy proteins. Other synthetic components can cause impairments, heart problems, cancer, or death. While the immediate effect of drinking milk adulterated with urea, caustic soda and formalin is gastroenteritis, the long-term effects are much more severe. Urea can lead to vomiting, nausea and gastritis. Urea is particularly harmful to the kidneys, and caustic soda can be dangerous for hypertension and heart ailments. Formalin can cause more severe damage to the body, like liver damage. The health impact of drinking milk adulterated with these chemicals is worse for children. Caustic soda harms the mucosa of the food pipe, especially in kids. The chemical, which contains sodium, can act as a slow poison

for hypertension and heart ailments.

Recently milk adulteration racket was caught in Borivali on 28 October 2013. They would either tear open the packets or use an injection to extract 30%-40% of milk. They would mix water into the boxes, blow air into them to maintain air pressure and then re-seal them. The pilfered milk would then be mixed with water and filled in new packets<sup>6</sup>. This study allows the consumer to detect a few common adulterants in milk. Food safety is essential as many consumers have become victims of consuming adulterated foods like milk. To meet these challenges, consumers must arm themselves against these problems since the working of the market does not automatically protect them. Therefore, a consumer's best defence is information of their rights as a consumer and the remedies that exist to resolve these problems when they occur. Knowledge and awareness about adulterated foods, laws and their rights related to adulterated milk are crucial in a society<sup>7</sup>. Creating awareness and educating the consumers will help them understand what constitutes food adulteration and save themselves. To avoid these dangers, it is best to buy milk from a renowned source. Buying milk sold by reputed companies in tetra packs is also a good option for those who can. To stop rampant adulteration of food items, the cabinet has approved on 1 July 2013 the draft of Safe Food Act-2013, with a provision for 14 years imprisonment or Take 15 lakh in fine for food adulteration. This act will replace the 54-year- old Safe Food Ordinance, 1959 and help stop food adulteration. Public awareness is also essential to reduce the incidence of food adulteration.

**Objectives:**

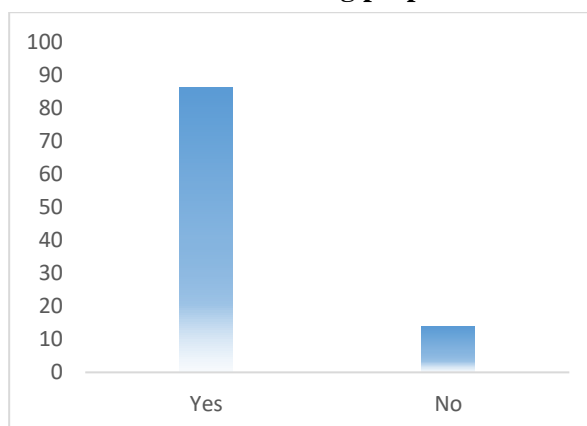
- To know about the customer awareness regarding adulteration of milk.
- To make awareness about milk adulteration among local people in Kalamboli
- To teach the local population in Kalamboli about the adulteration of milk and its harmful effect on the body.
- To inform them about proper choice of food in a day to day life.

**Materials and methods:**

An extensive questionnaire related to milk adulteration for consumers in various localities of Kalamboli was prepared. The survey on adulteration was conducted during October. The questionnaire and leaflets regarding milk adulteration were distributed to each house under study. All answers were evaluated statistically to understand the awareness about adulteration in milk.

**Results:**

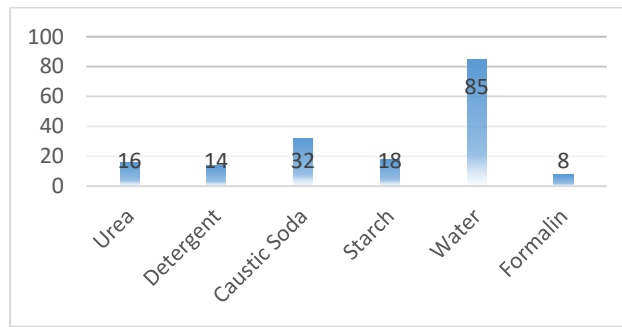
**1) Information about adulteration can be done in milk among people.**



**Fig.1 Information about adulteration can be done in milk among people.**

Out of 100 respondents, 86% of respondents were aware of adulteration of milk & the remaining 14% were unaware of impurity. The above data represents that more respondents were mindful of the adulteration of milk.

**2. Information about adulterants used in milk among the among peoples.**

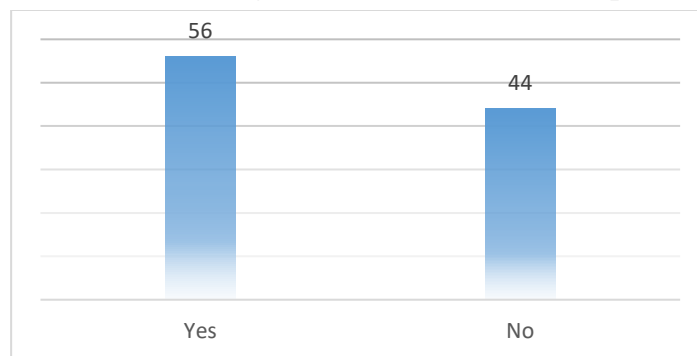


**Fig.2 Information about adulterants used in milk among peoples.**

Out of the 86 respondents, 85% of respondents were aware of the addition of water, 16% were aware of urea addition, 14% respondents were with detergent addition & 32% of respondents were with caustic soda, the 18% of the respondents were with Starch, and 8% of the respondents were with Formalin.

More respondents were aware of adding water to the milk, and only a few respondents were aware of chemicals like formalin, detergents, caustic soda etc.

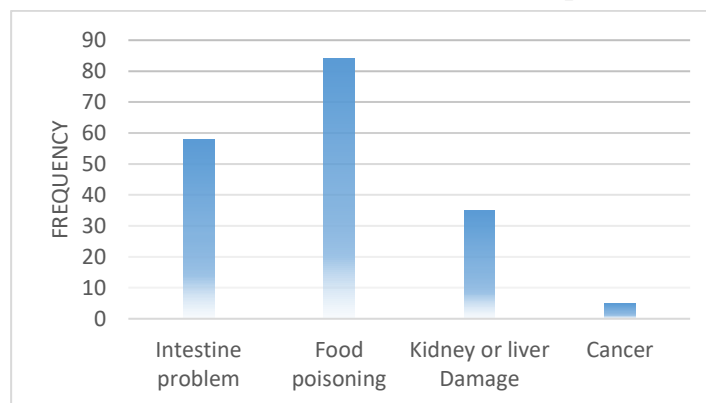
**3. Awareness about the ill effects of consuming adulterated milk and milk products.**



**Fig.3 Awareness about ill-effects of consuming adulterated milk and milk product among respondents.**

Out of the 100 respondents, 56% of respondents were aware of the ill effects of consuming adulterated milk, and 44% were unaware of that. The above data shows that more respondents were unaware of the ill effects of consuming adulterated milk, and few respondents knew about that.

**4. Information about the health hazards of adulterated milk and milk products among respondents.**

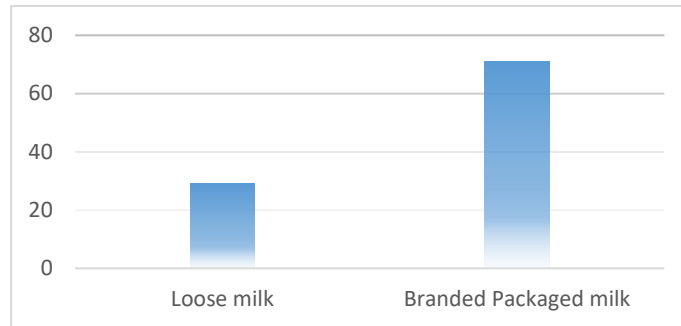


**Fig.4 Information about respondents' health hazards due to adulterated milk and milk products.**

Out of 100 respondents, 58% were aware of the Intestine problem, 84% had Food poisoning, 35% had Kidney or liver damage, and 5% were unaware of cancer.

The above data shows that most respondents were unaware of health hazards due to adulterated milk. Few respondents were aware of intestine problems, food poisoning, Kidney or liver damage problem, and very few knew about cancer.

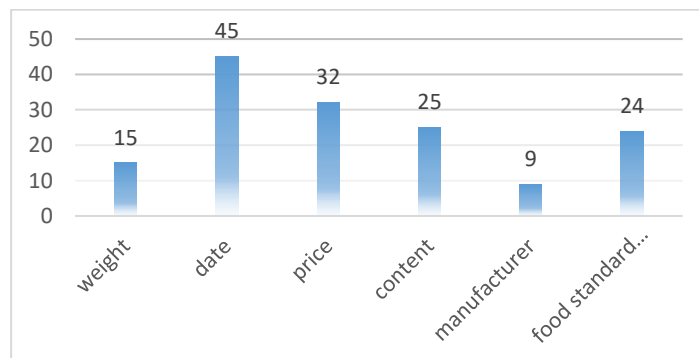
### 5. Survey of use of loose milk and Branded packaged milk



**Fig. 5 Survey of use of loose milk and Branded packaged milk**

From collected data, it was analysed that 71% of the population use branded packaged milk of various brands available in the market, while 29% use loose dairy from the local market. Data shows that people were aware of using branded packaged milk to contain less adulteration. It has gone through pasteurisation and passed many additional testing for different types of impurity.

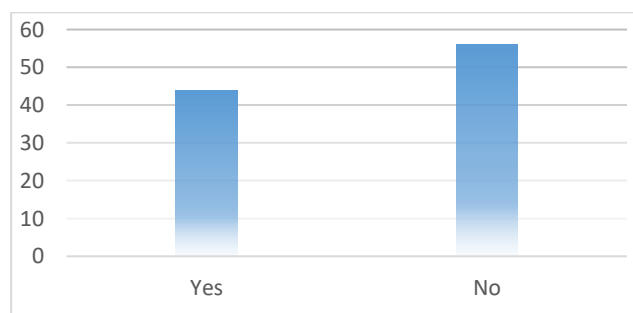
### 6. Information about observing while buying milk among people.



**Fig 6 Information about observing while buying milk among peoples.**

According to the data received from the survey, it reveals that out of 100 respondents, 45% of the population observe the date of the manufacturing as well as the expiry, 32% follow the price, 25% of respondents observe contents, 25% population observe food standard marks like ISI, FPO etc. and 9% & 15% respondents observe only manufacturer and weight. The survey revealed that most respondents observe the manufacturing date, and few respondents observe the price, content, food standard mark, manufacturer, and weight.

### 7. Information about the authorised licence for Milk and Milk Products.



**Fig. 7 Information about the legal licence for Milk and Milk Products among people.**

Out of 100 respondents, 56% were unaware of the authorised license for MMPO, and the remaining 44% of respondents were aware of it. Many respondents were aware of the official claim for MMPO assigned by the government of India to good quality of milk & milk products.

**Conclusion:**

Adulteration of milk is a common phenomenon faced by customers. Public awareness programmes must be organised. People should come forward to know simple measures and techniques to detect adulteration by this innovative concept of educating them by giving pamphlets for detecting adulteration, consumer goods and can be examined instantly which work as a deterrent against adulteration. Legal enforcement is another measure for the prevention of milk adulteration. It will not have any appreciable impact unless awareness of the typical consumer regarding the dangers of impurity and how to take advantage of the legal machinery to force the traders to get proper food and lastly, a sense of honesty among the food traders in the maintenance of the safety and quality of food.

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