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The food adulteration and detection in common food items

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Abstract

Foods provide us important nutrition and play a vital role in proper health. Food is one of the basic needs for our life. But now days many people malpractice the adulteration of food products to gain profit in an illegal way and earn many by deceiving the consumers. The main objective of this study is to analyze the awareness of food adulteration among consumers. The major finding of the study is that majority of literate consumer also had lack of knowledge about food adulteration and poor buying practice. It is necessary for mankind to overcome this malpractice. In the present review we will discuss about some of the food adulterant causing serious health problem.

Key words: Food adulteration, Consumers awareness, Human health.

Introduction

Food adulteration in India is getting deadlier day by day. Food adulteration is harmful for human being so it is considered as a crime. in spite of strict measures against adulteration, it is still practiced just for profit putting human lives in danger. In backward or developing countries, such kind of adultery at ion is usually seen. It is essential for the consumer to be aware of common adulterant and their effect on health (Acharya and Shah,1999), Adulteration in food not only decreases our social value but morality too (Ankleshwaria and Shah,1999). The awareness of consumers plays important role in preventing food adulteration. Therefore basic screening tests should be known to common people (Vasanthakalaam, 1996).

The causes of adulteration may be..

- Availability of too many products in the market.
- Consumer mentality of bargaining.
- Poor buying practices of consumers.
- Availability of adulterants.
- Consumer psyche.

Food can be adulterated in two ways, either “intentionally” or “unintentionally” (Bansal et .al. 2015).the intentional food adulteration involves the substances added in food to improve appearances, flavor, texture or storage properties and broadly identified as food additives (Misra 1992: Gupta and Panchal,2009). While the unintentionally food adulteration involves the use of pesticides, growth promoters, components of packaging materials, solvent and enzymes used in food processing etc.

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There are different forms of adulteration according to the nature or physical properties of the food adulterant. These can be categorized into two parts.

(1) Separable:-
the physical mixing of adulterants or addition of particles which can be separable or weeded out after detection.

(2) Inseparable:-
The physical mixing of adulterants or addition of liquids which cannot be separated out or in broader terms which are inseparable after detection.

Test of Adulterants in various food. :-

Objective of the study

- To analyze the awareness of food adulteration among consumers.
- To evaluate type of adulterant in food item.
- To examine the buying practice of food items.

Result and Discussion

Food product	Adulterants	Test	Health effect on humans
Black piper	Papaya seeds, light berries.	Shake a small quality of sample with water. Papaya seeds will float in water in water and black pepper will settle down.	Lathyrism, stomach disorders.
Turmeric powder	Chalk powder	If the mixture releases small bubbles, it indicates the presence of chalk powder.	Stomach disorder, Kidney stone.
	Starch powder, wheat flour etc.	Add few drops of toilet cleaner to the sample. Instant pink/violet color, which disappears on dissolution with water, Indicate pure Turmeric. If color persists hence metanil yellow is present.	Stomach disorder, neurotoxin
	Lead chromate, saw dust	Shake ½ test spoons with 5 ml of water and a few drop of toilet cleaner. Pink color indicates the presence of lead chromate.	Damage all the body system.
Synthetic milk	Urea, detergent, soap, sodium hydroxide.	Take small amount of milk. Add ½ test spoons of soybean or arhar dal powder. Mix up the contents thoroughly. After five minutes add $_{1/4}$ test spoons of turmeric powder in it a change in color from yellow to red indicates the the presence of urea/washing powder in the milk.	carcinogenic
Honey	Sugar syrup, Glucose or starch.	Refrigerate honey bottle if it is pure it will not solidify.	Harmful for diabetic patients.
Ghee	Mashed potato, sweet potato.	Boil 5 ml of sample, cool it and add a drop of tincture iodine solution. Blue color indicates the presence of mashed potatoes.	Cardiovascular disease.

Suggestions:-

- Manufacturers should not only focus on increasing their profit but also take care on the consumer health.
- Consumer should select product with the AGMARK and ISI symbols.
- Retailers should take the initiative and suggests them the best products.
- Proper food laws should be formulated by the government and rigid testing procedures should be adopted for standardizing the food products.
- Government should take necessary step to create awareness program to consumer regarding their rights and responsibilities to consume any things.

Conclusion

Food adulteration is a great cause of concern as it affects human health directly. Threes a critical need of stringent regulation and applicability of strict rules for production of better food quality products to the consumers of India. Consumers have to be alert and check the adulteration by their own time to time using the simple and easy experiments discussed above to keep themselves healthy. The government and institution should implement a well- structured educational programme on food adulteration which would lead to increase the label while purchasing packed food item. Greater consumer vigilance and action can alone improve the situation.

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