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Food Adulteration

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SUMMARY

Food adulteration has become a very common practice in our country and we are consuming these foods almost every day, which have numerous harmful effects to our health. Every day we watch in the TV news how the unhygienic and spurious foods are entering into our houses. Adulteration of foods has many effects on individuals as well as on the community health. Food adulteration means anything adding or subtracting with food making it dangerous to health. This adulteration may be done intentionally or unintentionally. Intentional adulteration is a criminal act and punishable offense. The process of lowering the nutritive value of food either by removing a vital component or by adding substances of inferior quality.

INTRODUCTION

"Food adulteration is the process by which the quality of the food or its products is reduced through the addition of a foreign or inferior substance or the removal of a vital element." We daily consume safe and nutritious food to become healthy. It is the duty of a Welfare State to ensure that all its citizens have access to safe and nutritious food. As per law, the food offered for sale for human or animal consumption must be uncontaminated and unadulterated. Contamination and adulteration in food not only reduces its nutritional quality but may affect its safety, which may in turn affect the health of the consumers adversely.

Types of adulteration:

There are three types of adulteration

1. Intentional adulterants:

Intentional adulterants are sand, marble chips, stone, mud, chalk powder, water, mineral oil and coal tar dyes. This adulteration cause harmful effects on the body.

2. Metallic/Natural contamination:

Metallic contaminations include arsenic from pesticides, lead from water, and mercury from effluents of chemical industries, tin from cans

3. Incidental adulterants

Incidental adulterants are pesticide residues, tin from can droppings of rodents, larvae in foods. Metallic contamination with arsenic lead mercury can also occur incidentally. Pests such as rodents and insects intrude into the food at high degree and produce filth in the form of excreta, bodily secretions and spoilage through microorganisms. The most common incidental adulterants are pesticides, D.D.T and marathon residues present on the plant product.

Food Adulterations Categories

Replacement: Complete or partial replacement of a food ingredient or valuable authentic constituent with less expensive substitute with the intention of circumventing on "origin" and false declaration of the "process".

Addition: Addition of small amounts of non-authenticated substances to mask inferior quality ingredient.

Removal: Removal of authentic and valuable constituent without purchasers knowledge Food Adulterations

List of Adulterants/Contaminants in Foods and Their Effects on Our Health

	Adulterant	Harmful Effect
Milk	Water, Urea, Starch	Reduced nutritional value, Digestive issues
Sugar	Sand, Chalk, Lime	Digestive problems, Weakening of bones
Turmeric Powder	Lead Chromate, Metanil	Liver damage, Skin disorders
Red Chili Powder	Brick Powder, Artificial Colora	Digestive problems, Stomach irritation
Black Pepper	Papaya Seeds, Millet Flour	Digestive problems, Respiratory issues
Ghee	Vanaspati, Animal Fat	Reduced nutritional value, Heart problems
Honey	Sugar Syrup, Glucose	Reduced nutritional value, Allergic reactions
Olive Oil	Other oils (palm oil), colourants	Reduced health benefits, Digestive issues
Green Leafy Vegetable	Pesticides, Insecticides	Nervous system disorders, Respiratory issues
Pulses	Kesari Dal, Stones	Digestive issues, Dental problems
Tea	Used Tea Leaves, Artificial Col	Reduced quality, Digestive issues
Spices (e.g., Cumin)	Sawdust, Starch	Reduced flavour, Digestive problems
Fruits	Calcium Carbide, Ethephon	Digestive issues, Respiratory problems
Edible Oil	Argemone Oil, Non-edible Oils	Liver damage, Digestive problems
Coffee	Chicory, Roasted Gram	Reduced flavour, Digestive issues
Flour (e.g., Wheat)	Chalk Powder, Adulterated Flou	Digestive problems, Reduced nutritional value

(https://www.tataaig.com/knowledge-center/health-insurance/food-adulteration)

How Can You Prevent Consuming Adulterated Food?

Local and Direct Sourcing: Opt for purchasing essential food items, especially grains, from local markets or directly from farmers near your vicinity.

Homemade Spice powder making: Consider preparing items like red chili powder at home by grinding dried red chillies on your own. This way, you have better control over the purity of the spice.

Choose most Trusted Brands and Organic Products: Priorities branded and organic products over cheaper alternatives for a healthier lifestyle. Trusted brands often invest in quality assurance.

Be Cautious with Colors: Avoid food items with unnaturally dark colors, as they might indicate artificial additives or adulterants.

Check Seals and Packaging: Always inspect the seals of items like milk, oil, and other liquids to ensure they are intact. This helps verify the authenticity of the product.

CONCLUSIONS

Food adulteration is a threat, which all of us face regularly. Detection of adulteration in food is an essential requirement for ensuring safety of foods we consume daily. Although lab techniques are accurate and precise, yet they are costly and time consuming to perform. It is essential to develop reliable quick screening tests which a common person can perform at the level of homes so as to have a broad picture of status of adulteration in his food in case of doubt. Although there is great scope for improvement and further development, some quick methods of detection of adulterants, developed by various government and private agencies for household application, have been presented.

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