

CONSUMPTION OF SAFE FOODS

Ques. - What makes food unsafe?

Ans. Microbes (bacteria and moulds) and their products are responsible for food spoilage. Natural enzymes present in food also lead to its deterioration. Besides, insects and rodents, adulterants, natural toxins and various chemical residues beyond permissible levels, make the food unwholesome. In addition to moisture and environmental conditions like temperature, storage time also influence the quality of the food.

Ques. - How do we select safe food?

Ans. Selection of the right food (raw material) is the first step to ensure safe and good quality diet. Following points must be kept in mind while procuring food/raw material:

Buy Foods with certification mark on it: Food items purchased from reliable sources having a high turnover ensure their freshness. Some foods carry certification mark assuring good quality.

For example: AGMARK for honey and ghee; FPO (Fruit Products Order) for fruit and vegetable products (jams, squashes, etc); ISI (Bureau of Indian Standards) for food colours and essences.

Raw material should be free from visible foreign material: Food grains purchased should be free from foreign matter and infestation (rodent excreta and insect remains). They should be of uniform size and should not be shrivelled, shrunken and mouldy. Foodstuffs should be free from artificial colours.

Always choose foods in sealed branded containers over unsealed/open containers: There is a risk of adulteration when fats/oils are purchased loose from unsealed containers. Therefore, it is always safer to purchase reputed brand products in sealed sachets/containers.

Buy milk from reliable source: It is necessary to buy pasteurized milk in sachets from a reputed dairy or a reliable vendor to avoid the risk of adulteration and contamination. Milk products such as butter, ghee and should also be purchased from reliable sources.

Choose Whole spices against the ground ones to avoid adulteration: Whole spices, uniform in colour, size and shape should be preferred. Since powdered spices are more likely to be adulterated, always buy certified products.

Fruits and vegetables that show patches, mechanical damage and bruise, or are wilted and decayed with visible evidence of insects and moulds, should be avoided.

Eggs should be fresh and free from cracks. **Meat or poultry** must be examined for characteristic colour, odour and texture, and should be purchased fresh or frozen.

Freshness of fresh-water **fish** is indicated by a stiff body, bright, clear and bulging eyes, reddish gills, tight scales and absence of stale odour or discolouration. Fresh fish will not show any pitting on finger pressure.

Ques. - What are the best practices of storage?

Ans. Agricultural commodities should be dried adequately and protected from moisture in a safe storage structure (eg. tin with a tight lid) to prevent damage from moulds. Microbes like bacteria and mould produce toxins (eg. aflatoxins). Rodent attacks, and the presence of insects and microbes, not only reduce the availability of nutrients but render the foods harmful. Frequent and careful disinfestation of the storage premises using pesticides like aluminium phosphide is essential. Some traditional household practices such as application of edible oils to grains, placing dried neem leaves in storage bins etc., are known to prevent infestations.

Ques. – Why do foodborne diseases occur?

Ans. Foodborne infections and toxicities are common particularly with consumption of susceptible foods such as milk products like khoa, meat, poultry and even cooked foods like rice. Improper processing, handling and cooking, and keeping cooked foods in warm conditions for several hours before eating, promote bacterial growth and toxin production.

Ques. - How should perishable foods be handled safely?

Ans. Perishable foods like milk, meat, vegetables and cooked foods, are prone to spoilage due to microbial growth. These foods should be stored under refrigeration, preferably at a temperature of 10 °C or less, which retards multiplication of microorganisms. However, even refrigerated foods, if stored for long, can get spoiled.

Cross contamination can be avoided by keeping cooked and raw food separately.

In case food which is cooked has to be stored for some time, it should be kept either hot (more than 60 °C) or be cooled quickly (below 10 °C). Most microorganisms multiply at temperatures between 10 °C and 60 °C. Refrigerated cooked food should be heated before consumption. However, repeated heating may be avoided as it destroys heat liable nutrients present in the food.

Ques. - What about personal hygiene?

Ans.

- Food handlers should observe good personal hygiene to maintain food safety. They should be free from obvious signs of illness, wounds and sores.
- Use of spoons and ladles should be encouraged to avoid contamination, as traditionally in India, cooked food is touched by the hands while preparing, serving and eating.
- Hands should be washed thoroughly before starting the preparation of food and after every interruption.
- Household pets like cats and dogs often harbour dangerous pathogens. They should be kept away from places where food is cooked, stored or served.

Ques. - What are the common adulterants?

Ans. Foods may be adulterated with non-food material or inferior quality product.

Spoilt, stale or poor quality food is made attractive and fresh by adding harmful colours or other chemicals.

Frequently adulterated food items are milk and milk products, cereals, pulses and their products, edible oils and spices.

The different classes of adulterants include non-permitted colours like:

Metanil yellow; non-edible oils like castor oil; cheaper agricultural produce like various starches in milk powder; extraneous matter like husk, sand and sawdust; and metal contaminants like aluminum or iron filings

Consumption of adulterated foods could lead to disease outbreaks of epidemic proportions. Buying from a reliable and reputed source, careful checking of foods before purchase and insisting on certified brands will all minimize the risk of food adulteration.

Ques. - How to minimize effects of pesticide residues?

Ans. Pesticides, used during cultivation of crops, can remain as residues in foodstuffs, especially vegetables and fruits. Exposure of the population to pesticide residues may be harmful and can be minimized by washing the foodstuffs thoroughly in running water or by peeling. Cooking and other processes can also reduce such residues.

Insect control operations such as disinfection in the kitchen by spraying pesticides is another source of contamination. Utmost care should be taken to ensure that eatables are well covered and protected from exposure to such harmful agents.

Ques. – What are the methods of removal of the pesticide residues from the food products?

Ans.

Most of the pesticide residues can be removed by adopting following four methods of residues removal:

Washing The first step in the removal of pesticide residues from the food products is washing. Washing with 2% of salt water will remove most of the contact pesticide residues that normally appear on the surface of the vegetables and fruits. About 75- 80% of pesticide residues are removed by cold water washing. The pesticide residues that are on the surface of the grapes, apples, guava, plums, mangoes, peaches, pears etc, fruity vegetables like tomatoes, brinjal, okra require 2-3 washings. The green leafy vegetables must be washed thoroughly. The pesticide residues from green leafy vegetables is removed satisfactorily by normal processing such as washing blanching and cooking.

Blanching A short treatment in hot water or steam applied to most of the vegetables. Certain pesticide residues can effectively be removed by blanching. But before blanching it is very important to thoroughly pre-wash the vegetables & fruits etc.

Peeling Both systemic and contact pesticides that appear on the surface of the fruits and vegetables can be removed by peeling. Steps such as concentration, dehydration, and extraction from the raw product can further reduce pesticide residues in the end product. The net influence of processing almost always results in minimal residues in processed food.

Cooking

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- ***Dairy products***

Boiling of milk at elevated temperatures will destroy the persistent pesticide residues.

- ***Vegetable Oils***

Refined oils will have fewer amounts of pesticide residues. Household heating of oils up to a particular flash point will remove pesticide residues.