

Food Adulteration

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Food is adulterated to increase the quantity and to make more profit. The food is sucked of its nutrients and the place where the food is grown, often contaminated. For e.g.: Milk is mixed with water, Vanaspati is used as adulterant for ghee, Ergot is used as an adulterant for cereals, Chalk powder is used as an adulterant for flour, Chicory is used as an adulterant for coffee, Papaya seeds are used as an adulterant for pepper, Brick powder is used as an adulterant for chillypowder, Wood is used as an adulterant for turmeric and dhaniya powder.

What is adulteration?

An adulterant is a chemical substance which should not be contained within other substances (e.g.:foods, beverages and fuels) for legal or other reasons. The addition of adulterants is called adulteration.

The word is appropriate only when the additions are unwanted by the recipient. Otherwise the expression would be food additive. Adulterants when used in illicit drugs are called cutting agents, while deliberate addition of toxic adulterants to food or other products for human consumption is known as poisoning.

Adulteration in milk and milk products:

Paneer, Khoa, Condensed milk and Milk:

Here adulterant is starch (used to give it thick, rich texture). Its harmful effect is that it is unhygienic, unprocessed water and starch can cause stomach disorders. Starch greatly reduces the nutritive value of the ingredients.

Ice cream: Here the adulterants pepperoni, ethylacetate, butraldehyde, emilacetate, nitrate, washing powder, etc are not less than poison. Pepperoni is used as pesticide and ethyl acetate causes terrible diseases affecting lungs, kidneys and heart.

Ice cream is manufactured in extremely cold chamber where fat is hardened and several harmful substances are added. Also a kind of gum is added which is sticky and slow melting. This gum is obtained by boiling animal parts like tail, nose and udder, etc.

In 2012, a study in India conducted by the Food Safety Standards Authority of India (FSSAI) across 23 states found milk in India is adulterated with detergent, fat and even urea,

as well diluted with water. Of the 1791 random samples from 23 states, just 31.5% of the samples tested (565) conformed to the FSSAI standards while the rest 1226 (68.4%)

6646

failed the test. See: 2012 India milk adulterant scandal.

Adulteration incereals, grains and spices:

Turmeric, Dals and pulses such as Moong or Chana: Here adulterant is Metanil Yellow and Kesari dal (added to enhance the yellow colour of a food substance). It is highly carcinogenic and if consumed over a continuous period of time, can also causes stomach disorders.

Mustard seeds and mustard oil: Here adulterant is Argemone seeds (used to add bulk and weight) and papaya seeds (used to add bulk).The consumption of these can causes epidemic dropsy and several glaucoma. Young children and senior citizens with poor immunity are more susceptible to this.

Black pepper: Here adulterant is papaya seeds (used to add bulk). Its harmful effect is that papaya seeds can accuse severe liver problem and stomach disorders.

Green chillies, green peas and other vegetables: Here the adulterant Malachite Green (to accentuate the bright, glowing green colour of the vegetables)is a coloured dye that has proven to be carcinogenic for humans if consumed over a longer period of time and Argemones seeds (used to add bulk and weight) .

Coffee powder: Here adulterant is tamarind seeds and chicory powder (used to add colour and bulk).Their harmful effects are that these

can cause diarrhoea, stomach disorders, giddiness and joint pains.

Food preservatives have a very extensive use, which often constitutes adulteration. Salt is the classic preservative but is seldom classified as adulterant. Salicylic, benjoic and boric acids, and their sodium salts, formaldehyde, ammonium fluoride, sulphurous acid and their salts are among the principle preservatives. Many of these appear to be innocuous, but there is danger that the continued use of food preserved by these agents may be injurious. Some preservatives have been conclusively seen to be injurious when used for long period.

Adulteration in water:

Water that has been adequately chlorinated, by using the minimum recommended water treatment standard provide protection against viral and bacterial waterborne diseases. However, chlorine treatment alone, as used in the

routine disinfection of water, might not kill some enteric viruses and the parasitic organisms but causes giardiasis, amoebiasis and cryptosporidiosis. In areas where chlorinated tap water is not available or where hygiene and sanitation are poor, one is advised that only the following might be safe to drink: Beverages, such as tea and coffee, made with boiled water.

The safety of canned or bottled carbonated beverages, including carbonated bottled water and soft drinks is questionable nowadays. Where water might be contaminated, one is advised that ice should also be considered contaminated and should not be used in beverages. If ice has been in

6646

contact with containers used for drinking, one should thoroughly clean the containers,

preferably with soap and hot water, after the ice has been discarded.