

Food for Thought: Issues of Food Safety



Toxics Link
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The Ministry of Food Processing Industries, Government of India, has declared the year 2008-09 as 'Food Safety and Quality Year'.

Previously in 2006 the Food Safety and Standards Act 2006 was introduced to give more importance to the safety standards.

"Food safety" implies absence or acceptable and safe levels of contaminants, adulterants, naturally occurring toxins or any other substance that may make food injurious to health on an acute or chronic basis.

Sources of Food Contamination: How Safe is your food?

We are what we eat. Our nutritional status, health, physical and mental faculties depend on the food we eat and how we eat it.

Food contamination can take place at various stages of the food chain. From farm to table.

¹Lokeshwari, 2006

Apart from chemical contamination of food from various sources such as industries, vehicles, pesticides and fertilizers, pollution resulting from growing of vegetables in degraded environmental conditions in peri-urban zones also affect food safety. This is coupled with further pollution from vehicles and industries during marketing.

The common sources include presence of heavy metals, pesticides, preservatives, colouring agents and other additives and adulterants in food.

Heavy Metals

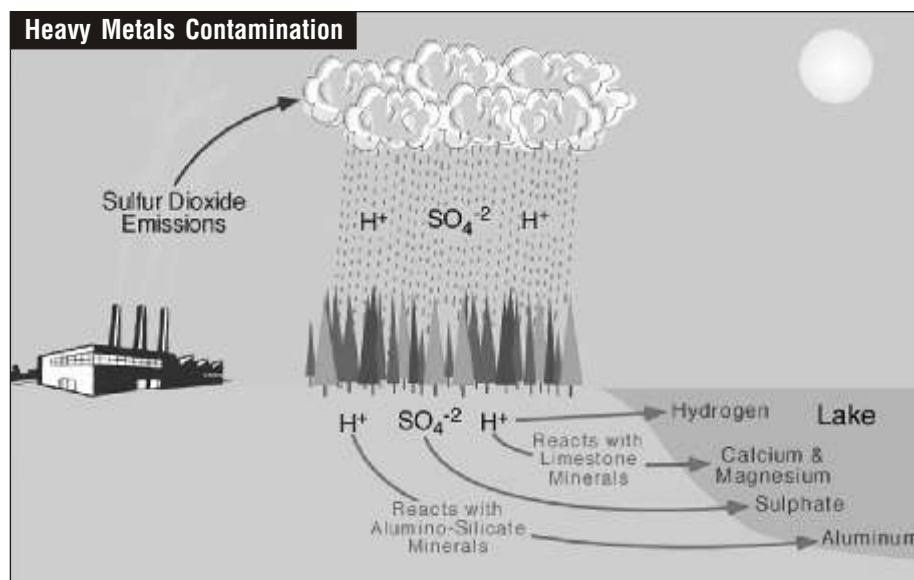
Presence of heavy metals in food has become a burning issue in recent years because of their potential accumulation in biosystems through contaminated water, soil and air.¹

The toxic metal content of the food is influenced by many factors ranging from the environmental condition during growth to post harvest handling, processing, preparation and cooking techniques. Metal content increases in some commodities grown in contami-



AT A GLANCE

- ◆ The Ministry of Food Processing Industries, GOI, has declared 2008-09 as Food Safety and Quality Year.
- ◆ Food Safety implies absence or safe levels of various kinds of contaminants.
- ◆ Sources of food contamination include harmful chemicals, heavy metals, pesticides, preservatives, colouring agents, additives, adulterants etc.
- ◆ Food Contamination leads to life-threatening diseases and is a major cause of health hazard especially in developing countries.
- ◆ India needs to do a lot in terms of effective implementation of the existing laws to deal with the, menace of unsafe food.



nated soils or atmosphere. Metals used in food processing equipment or food-packaging material may contribute to food contamination. However, post harvesting handling steps such as washing generally removes metal contaminants if contamination is through air. Cooking also has the ability to reduce metal content, although some foods can absorb metals if the cooking water is contaminated.²

Impact of heavy metals

Heavy metals are dangerous because they tend to bioaccumulate.

Bioaccumulation means an increase in the concentration of a chemical in a biological organism over time, compared to the chemical's concentration in the environment. Lead and cadmium are most common heavy metals, which are contaminated through food. Long-term exposure of lead leads to acute or chronic damage to the nervous system on humans. High exposure can lead to obstructive lung disease and has been linked to lung cancer, and damage to human's respiratory systems, while long-term exposure in cadmium is associated with renal dysfunction.

Legal Provisions

There are in fact legal provisions in India to curb the menace of toxins such as heavy metals in food.

Section 20 of the Food Safety and Standards Act-2006 of India states that "No article of food shall contain any contaminant, naturally occurring toxic substances or toxins or hormone or heavy metals in excess of such quantities as may be specified by regulations".

Pesticides

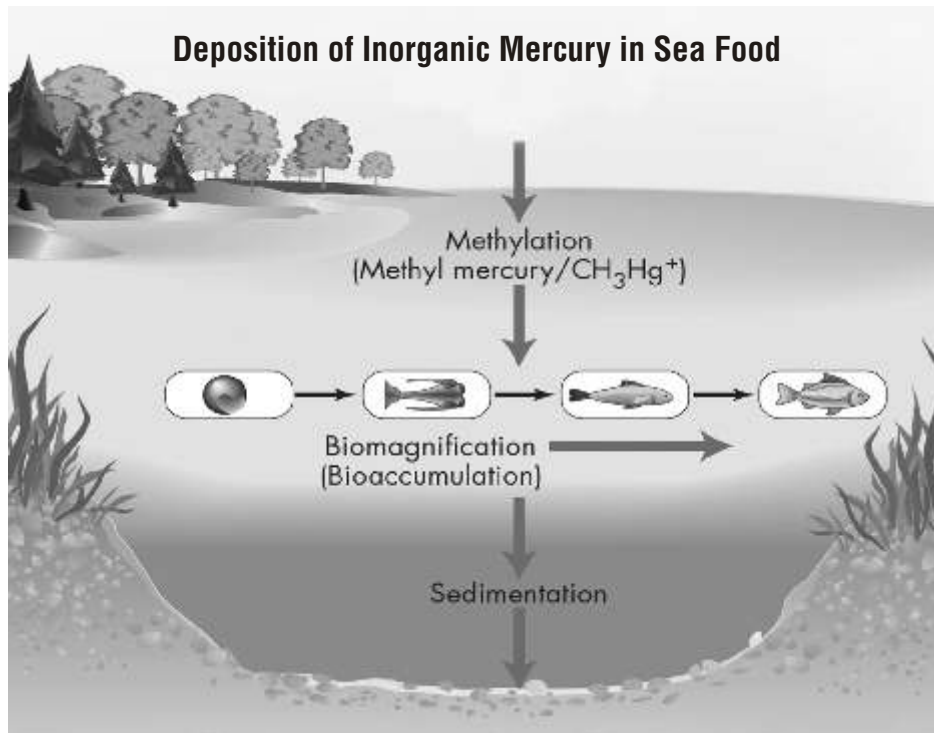
Pesticides are a group of chemicals designed to control weeds, diseases, insects, fungi or other pests on crops, landscape or animals. The most commonly used pesticides are insecticides (to control insects), fungicides (to control fungi) and herbicides (to control weeds). The world has seen enormous rise of pesticides uses for agricultural purposes to enhance the food production and feed the population of the world.



India uses about 30,000 tons of pesticides a year, more than 60% of it on food crops. Use of excessive pesticides contaminates soil, water and finally enters the food chain and contaminates the food produced. About 20% of Indian food products contain pesticide residues above the tolerance level compared to only 2% globally. No detectable residues are found in only 49% Indian food products compared to 80% globally.³

Impacts of Pesticides

Pesticides are widely used throughout the world in agriculture to protect crops but they pose significant health problems besides commonly contaminating soil, air and water. The high-risk groups exposed to pesticides include the production workers, formulators, sprayers, mixers, loaders and agricultural farm workers.



The United Nations Environment Program estimates accidental pesticide poisoning causing 20,000 deaths and 1 million cases of illness per year worldwide. Pesticides have been implicated in human studies with leukemia, lymphoma, aplastic anemia, soft tissue sarcoma and cancers of the breast, brain, prostate, testis and ovaries. The International Agency for Research on Cancer has found "sufficient" evidence of carcinogenic potentiality in most of the pesticides beyond the threshold limit.

Legal provisions

Section 21: (1) of the Food Safety and Standards Act-2006 states that no article of food shall contain insecticides or pesticides residues, veterinary drugs residues, antibiotic residues, solvent residues, pharmacological active substances and microbiological counts in excess of such tolerance limits as may be specified by regulations.

²Effects of processing on heavy metals content of food, Morgan JN, U.S. Environment Protection Agency, National Exposure Research Laboratory, Cincinnati, Ohio 45268, USA.

³Concept paper-Kheti Virasats Medical workshop Impact of Pesticides on Health: A critical and in-depth scientific analysis



(2) No insecticide shall be used directly on article of food except fumigants registered and approved under the Insecticides Act, 1968. Explanation. -For the purposes of this section, -

(1) "Pesticide residue" means any specified substance in food resulting from the use of a pesticide and includes any derivatives of a pesticide, such as conversion products, metabolites, reaction products and impurities considered to be of toxicological significance and also includes such residues coming into food from environment.

Similarly Rule - 65 (Para-XIV) of the Prevention of the Food Adulteration rule 1955 has the provision on the restrictive use of pesticides (insecticides) where as Rule 65 (2) has also stated that the insecticides content shall not exceed the tolerance limit prescribed for the food items mentioned below.

The prescribed Acceptable Daily Intake (ADI) and Maximum Residue Limit (MRL) for India is being determined based on the recommendation of the Codex Committee on Pesticides Residues (CCPR) a subsidiary body of the Codex Alimentarius Commission.

Food additives

Food additive means any substance not normally consumed as a food by itself and not normally used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packaging,

transport or holding of such food results, or may be reasonably expected to result (directly or indirectly), in it or its by-products becoming a component of or otherwise affecting the characteristics of such foods. The term does not include contaminants or substances added to food for maintaining or improving nutritional qualities.⁴



Some additives have been used for centuries; for example, preserving food by pickling (with vinegar), salting, as with bacon, preserving sweets or using sulphur dioxide as in some wines.

In the past 30 years, however, with the advent of processed foods, there has been a massive explosion in the chemical adulteration of foods with additives. In several cases, artificial food additives have been linked with cancer, digestive problems, and neurological conditions such as Attention Deficit Disorder (ADD). They can be also linked with diseases like heart disease, obesity, rapid heartbeat and more. Most food additives are tested in isolation rather than in combination with other additives. The long-term effects of consuming a combination of different additives are currently unknown. Some people are sensitive to particular food additives and may have reactions like hives or diarrhoea. This doesn't mean that all foods containing additives need to be automatically treated with suspicion. Many of the food additives used occur naturally within foods that are regularly consumed.

Types of food additives

The different types of food additives and their uses include:

- **Anti-caking agents**—stop ingredients from becoming lumpy.
- **Antioxidants**—prevent foods from oxidizing, or going rancid.
- **Artificial sweeteners**— increase the sweetness.
- **Emulsifiers**— stop fats from clotting together.
- **Food acids**— maintain the right acid level.
- **Colours**— enhance or add colour.
- **Humectants**— keep foods moist.
- **Flavours**— add flavour.
- **Flavour enhancers**— increase the power of a flavour.
- **Mineral salts**— enhance texture.
- **Preservatives**— stop microbes from multiplying and spoiling the food.
- **Thickeners**— enhance texture.
- **Stabilisers**— maintains uniformity of food dispersion.
- **Flour treatment**— improves baking quality.
- **Glazing agent**— improves appearance and can protect food.
- **Propellants**— help propel food from a container.



⁴Codex Alimentarius, Second Edition (Revised 1995), Volume 1A (General Requirements), p.11

Studies that test the safety of additives are based on animal trials. It is difficult to deduce whether the results of an animal study equate to human health, though many of these studies show that some additives could be cancer causing.

The list of the 12 most dangerous additives include:

1. Preservative Sodium Nitrate
2. Butylated Hydroxyanisole (BHA)
3. Butylated Hydroxytoluene (BHT)
4. Propyl Gallate
5. Monosodium Glutamate
6. Trans-Fat
7. Aspartame
8. Acesulfame-K
9. Food colorings: Blue 1, 2;
10. Red 3;
11. Green 3;
12. Yellow 6

It is estimated that we consume about 5 Kgs of food additives as preservatives, colors, bleaches, flavors, emulsifiers and stabilizers every year in the food we eat. This not only results in extra work for our body to remove them, but also makes us susceptible to disease. (Source: Consumer VOICE, 2007).

Food adulteration

Food adulteration is the act of intentionally debasing the quality of food offered for sale either by the admixture or substitution of inferior substances or by the removal of some valuable ingredient. Food is declared adulterated if:



- A substance is added, which depreciates or injuriously affects it
- Cheaper or inferior substances are substituted wholly or in part
- Any valuable or necessary constituent has been wholly or in part abstracted



- It is an imitation
- It is coloured or otherwise treated, to improve its appearance or if it contains any added substance injurious to health

Types of adulterants

Intentional adulterants: Intentional adulterants are those substances that are added as a deliberate act on the part of the adulterer with the intention to increase the margin of profit. E.g. sand, marble chips, stones, mud, chalk powder, water, dyes, etc., these adulterants cause harmful effects on the body.

Incidental adulterants: These adulterants are found in food substances due to ignorance, negligence or lack of proper facilities. It is not a willful act on the part of the adulterer. e.g. pesticides, droppings of rodents, larvae in food.

Metallic contamination: Metallic contamination comprises of arsenic from pesticides, lead from water, mercury from effluent, from chemical industries, tins from cans.

A study conducted to assess the 'Knowledge of Consumers Regarding the Nature and Extent of Adulteration of Indian Foods' in Hisar, Haryana in the year 1999, found out that all the food samples except ghee collected from the households of the respondents were found to be adulterated. The main adulterants in milk was water (70%), turmeric powder contained chalk powder (43.3%), chilly powder had artificial color (100%), essential oils were removed from cardamom (36.6%), green gram and urad bean had water soluble colors, chick pea flour had artificial colors (70%) and chalk powder was present in sugar (36.6%).

(Source: Nutrition and Health Journal, 1999)

Every consumer wants to get maximum quantity of a commodity for as low a price as possible. This attitude of the consumer being coupled with the

intention of the traders to increase the margin of profit, where the quality of the commodity gets reduced through addition of a baser substance and / or removal of vital elements. Table No.1 depicts the details of most common adulterants in different food articles and also method to detect them.

Preservatives

A preservative is a natural or synthetic chemical that is added to different products including food to prevent decomposition by microbial growth or by undesirable chemical changes. They are added to food to increase their shelf life, to keep them away from going bad or developing mould, or becoming rancid. It is not always known



what the long-run effects of preservatives are. Food preservatives have a very extensive use, which often constitutes adulteration. Salt is the classic preservative but is seldom classified as an adulterant. Salicylic, benzoic, and boric acid, and their sodium salts, formaldehyde, ammonium fluoride, sulphurous acid and its salts are among the principal preservatives. Many of these appear to be innocuous, but there is a danger that the continued use of food preserved by these agents may be injurious. Some preservatives have been conclusively shown to be injurious when used for long periods and they have been shown to cause respiratory and other health problems.

Colouring agents

A colour additive is any dye, pigment or substance that can impart colour when added or applied to a food, drug and cosmetic or to the human body. Colours added to packed food come under the category of 'additives'. Colorants are



Table 1: How to Test for Food Adulteration?

Food Article	Adulterant	Simple Method for Detecting the Adulterant
Milk	Water	Put a drop of milk on polished vertical surface. The drop of pure milk either stops or flows slowly leaving a white trail behind it. Whereas milk adulterated with water will flow immediately without leaving a mark.
	Urea	Take 5 ml of milk in a test tube and add 2 drops of bromothymol blue soln. Development of blue colour after 10 minutes indicates presence of urea.
Mustard Seeds	Argemone Seeds	Argemone seeds have rough surface and mustard seeds on pressing is yellow inside while argemone seed is white.
Ice Cream	Washing Powder	Put some lemon juice, bubbles are observed on the presence of washing powder.
Sugar	Chalk	Dissolve sugar in a glass of water, chalk will settle down at the bottom, similarly for salt.
Silver Foil	Aluminum Foil	On ignition genuine silver foil burns away completely leaving glistening white spherical ball of the same mass while aluminum foil is reduced to ashes of black Grey colour.
Honey	Water	A cotton wick dipped in pure honey burns when ignited with a matchstick. If adulterated presence of water will not allow the honey to burn, if it does will produce a cracking sound.
Coffee	Chicory	Gently sprinkle the coffee powder on surface of water in a glass. The coffee floats over the water but chicory begins to sink down within few seconds. The falling chicory powder particles leave behind them a trail of colour, due to large amount of caramel they contain.
Tea	Coloured leaves Used tea Iron fillings	Rub leaves on white paper, artificial colour comes out on paper. Tea leaves sprinkled on wet filter paper. Pink or red spots on paper show colour. Move a magnet through the sample. Iron will stick to the magnet.
Red Chilli Powder	Rodamine Culture	Take 2gms sample in a test tube, add 5ml of acetone. Immediate appearance of red colour indicates presence of Rodamine.
	Brick Powder	Brick powder settles fast chilli powder settles slowly when put in water.
Turmeric Powder	Metanil Yellow	Add a few drops of HCl to the extract of turmeric from water. Instant appearance of violet, when the colour persists when diluted with water indicates the presence of metanil yellow.
Dal arhar, moong, washed channa	Metanil Yellow	Extract the colour with Luke warm water from the sample of pulses, add drops of HCl. A pink colour indicates presence of metanil yellow.
Green vegetables like chilly	Malachite green	Take a small part of the sample and place it over a moistened white blotting paper, the impression of the colour on paper indicates the presence of malachite green
Pure Ghee or Butter	Vanaspathi	Take one teaspoonful of melted ghee or butter with equal quantity of conc. Hydrochloric acid in a test tube and add to it a pinch of cane sugar. Shake well for one minute and let it stand for five minutes. Appearance of crimson colour in lower layer shows the presence of vanaspathi.
Black Pepper	Papaya Seeds	Float the sample in alcohol. The mature black pepper berries sink while papaya seeds and light black pepper float.
Hing	Soap Stone or earthy matter	Shake a little portion of sample with water and allow settling. Soapstone or earthy matter will settle down at the bottom.
Saffron	Coloured dried tendrils of maize cob	Pure saffron will not break easily like artificial. Pure saffron when allowed to dissolve in water will continue to give its colour so long as it lasts.
Common Salt	White powdered stone	Stir a spoonful of sample salt in water. Chalk will make the solution white and other insoluble impurities will settle down.

Source: Clean India 2001 <http://www.cleanindia.org/resoucewatch/foodadulteration.htm>

added to eliminate the color loss of foods due to exposure to light, air, extreme temperature, moisture and storage conditions, to correct natural variations in color, to enhance natural colors and to provide color to colorless foods. There are two types of colourants: natural like chlorophyll, caramel and Annatto; and synthetic ones that are chemically synthesized and have high tinctorial strength (coloring capacity). Synthetic colors spread uniformly in foods, are stable and are usually inexpensive. Hence, they are preferred by the food industry. Synthetic colors are classified as 'food colors' and 'non-permitted colors'. The first are those that can be used in foods after thorough toxicological evaluation. Use of non-permitted colors can result in severe gastrointestinal side effects; allergy and can even damage some vital organs.

There are **eight** food colors permitted in India:

- Tartrazine and Sunset Yellow for yellow;
- Carmosine, Ponceau - 4R and Erythrosine for red;
- Brilliant Blue and Indigo Carmine for blue; and
- Fast Green for green

But these are basic colors and different shades and hues can be made from these.

However, there are many food preparations in which non-permitted colors are used. They are, usually confectionery, sweets, ready-to-drink beverages, soups, vegetables like carrot and green peas, cooked foods and non-vegetarian foods.

Food ripening agents

A commonly used agent in the ripening process is calcium carbide, a material most commonly used for welding purposes.



Calcium Carbide

Treatment of food with calcium carbide is extremely hazardous because it contains traces of arsenic and phosphorous. Once dissolved in water, the carbide produces acetylene gas. Acetylene gas may affect the neurological system by inducing prolonged hypoxia. Since the amount of carbide needed to ripen the immature fruit is more than its usage elsewhere, it makes the fruit tasteless and toxic. One can distinguish the artificially ripened fruit by the uniform skin color in fruits like tomato, mango, papaws, etc and in the case of banana, yellow color fruit with dark green stem. In some cases it is only the skin that changes color, while the fruit itself remains green and raw. Also calcium carbide reduces the ripening period from 7 days to 3-4 days. What's worrying is that the artificially ripened fruit often looks better than the one that has gone through the natural process. Eating such fruits causes mouth ulcers, gastric irritation and sore throat.

Some Common Terms associated with Food Safety

Acceptable Daily Intake or ADI is a measure of the amount of a specific substance (usually food additive or pesticide) in food that can be ingested (orally) over a lifetime without an appreciable health risk. "Without appreciable risk" refers to the practical certainty that injury will not result, even after a lifetime of experience. ADIs are expressed by body mass, usually in milligrams (of the substance) per kilograms

of body mass per day. The concept of ADI was first introduced in 1961 by the Council of Europe and later the Joint Expert Committee on Food Additives (JECFA), a committee maintained by two United Nations bodies: the Food and Agricultural Organisations and WHO.

The ADI is a practical approach in determining the safety of food. It also serves to ensure that the actual human intake of a substance is well below toxic levels. The ADI is generally being determined based on a scientific review of all available toxicological data on a specific additive based on both observations in humans and tests in animals. Laboratory tests in animals determine the maximum dietary level of the additive that is without demonstrable toxic effects, i.e., the "No Observable Effect Level" (NOEL). This level is then extrapolated to man by dividing the no-effect level by a large factor, often 100. This results in a substantially lower level for man, and thus a large margin of safety.

Maximum Residue Limits (MRLs) for pesticides are established in most countries to safeguard consumer health and to promote Good Agricultural Practice (GAP) in the use of insecticides, fungicides, herbicides and other agricultural compounds. MRL is the maximum concentration of a substance, expressed in milligrams per kilogram (parts per million, ppm) or in micrograms per kilogram (parts per billion, ppb) that is legally permitted in a food commodity.



An MRL is typically applied to a veterinary drug or a pesticide and is established for particular food commodities such that potential consumer exposure to residues is judged to be toxicologically acceptable. The MRL set for a substance may differ for different food commodities, reflecting the contribution of the particular food to a "standard" diet. Normal intake of food containing residue of a substance at its MRL is not expected to result in the ADI being exceeded.⁵

Since residues of pesticides and drugs may be broken down in tissue into various metabolites, MRLs are expressed either in terms of the amount of the parent compound remaining, or a metabolite that is representative of the residue of toxicological concern in the food. Estimates are usually made by comparing the acceptable daily intake (ADI) with a calculation of the total intake of the residue based on the MRLs and food intake data of these commodities for which MRLs have been established.

Codex Committee on Pesticides Residue Committee of the Codex Alimentarius Commission develops and maintains acceptable pesticide Codex maximum residue limits (MRLs) for food commodities in international trade. However, neither the USA nor the EU approves Codex MRL. Instead, they independently set their own standards. But India is accepting MRL standard determined by Codex.

Food Safety and Cultural Practices

To ensure food safety and also to avoid episodes of food borne illness, make sure you and your family is not a victim of preventable food borne illness. (Source: Ministry of Health and Family Welfare)

- Always wash your hands well with soap and warm water, before and after food handling
- Keep hot foods hot. If a food is cooked and put out to serve, make sure that you keep the food hot if it is not going to be eaten right away. If you are going to cool the food in the refrigerator, be sure to cool it quickly in a shallow container. Perishable food should never be kept at ambient temperatures, (specifically between 5°C and 60°C) for more than 2 hours. Bacteria can grow well at these



temperatures and may grow to levels that could cause illness.

- Keep cold foods cold. Cold salads, sandwiches, meat products, dairy products and other foods, which require refrigeration, should always be kept cold (below 5°C). If they are allowed to warm up, bacteria may be able to grow to dangerous levels.
- Don't cross contaminate. It is vital that you cook poultry, fish, seafood, meat and meat products thoroughly to kill the harmful bacteria that may be on them. That is why it is very important to make sure that you don't allow the juices associated with raw meat to contaminate other areas of your kitchen. If you do so, you may then allow those bacteria to get into foods that don't get cooked before you eat them.
- Thaw food. Frozen raw fish, seafood, poultry, meat and meat products should never be thawed by leaving them on the kitchen table / slab at room temperature. The proper way to thaw such products is to either thaw them in the refrigerator or thaw them in a microwave oven or in cold water that is changed every 30 minutes.
- Wash fruits and vegetables thoroughly. Since fresh fruits and vegetable are grown in open environment, they may come in contact with a wide range of bacteria.
- Keep egg refrigerated and never eat raw eggs. Eggs may contain the bacteria Salmonella in their yolks, and so it is very important never to leave eggs at room temperature, or you will allow the Salmonella to multiply and grow. Because there may be Salmonella in

eggs, you should also always make sure that you cook your eggs thoroughly before eating them (e.g. well cooked omelet, well boiled egg).

- Cook food thoroughly. Make sure to cook food thoroughly, particularly the meat products. Depending upon the type of dish made, thorough cooking would be signified by colour, texture and taste.
- When in doubt, throw it out. Never taste food, which you think may be spoiled. If you are uncertain as to whether or not a food is still safe to eat, do not eat it.

Thus consumers should take appropriate actions at certain critical points to prevent food borne illness. They are purchasing, storing, pre-preparation, cooking, serving, and handling leftovers.



Gender & Food safety

Although both rural women and men have different and complementary roles in guaranteeing food security at the household and community levels, women often play a greater role in ensuring nutrition, food safety and quality. In much of the developing world, women produce most of the food that is consumed in their homes, and are generally responsible for processing and preparing food for their households. Women tend to spend a considerable part of the cash income that they generate from marketing activities on household food requirements.

Thus recognizing women and men's distinct roles in family nutrition is a key to improving food security at the household level. As women do most of the cooking in their homes, education about hygiene and sanitation needs to target their concerns and schedules. Furthermore, policies that take account of women's key roles in preparing food and collecting water and fuel can simultaneously reduce their heavy workload and improve their families' nutrition. *Source: FAO*

⁵ www.nfrd.teagasc.ie

The Food Safety and Standards Act-2006

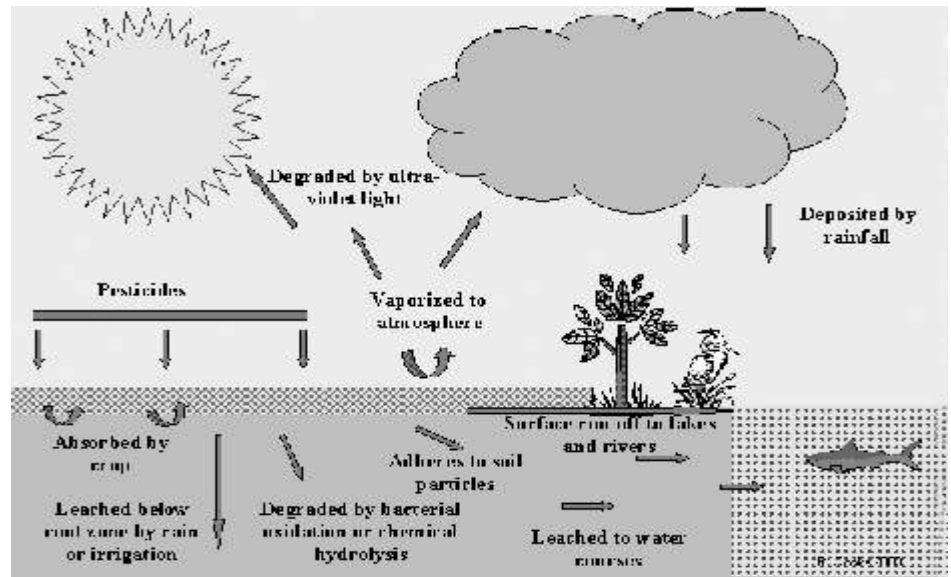
The Food Safety and Standards Act 2006, is an important initiative and development to safe guard food safety and health of the consumer at the same time giving due importance to safety standards in India. The objective of the law is to consolidate eight laws governing the food sector and to establish the Food Safety and Standards Authority (FSSA) to regulate the sector.

Relevant provisions of the act

1. The act has the features to achieve appropriate levels of protection of human life and health and protection of consumers' interests including fair practices in all kinds of food;
2. Carry out risk management based on risk assessment; also to adopt risk management measures necessary to ensure appropriate levels of health protection;
3. Risk assessment is to be based on the available toxicological evaluation (e.g. JECFA) and extensive open and transparent discussion with all stakeholders, and the underlying principle is to ensure protection of consumers by preventing fraudulent, deceptive or unfair trade practices.
4. In case of suspected risks of the public consuming contaminated food, the FSSA will take appropriate steps to inform the general public of the risk to health;
5. If any lot of food fails to comply with food safety requirements it shall be presumed that the whole consignment fails to comply with these requirements.
6. The act lays down food safety standards to ensure fair trade practices while



The pesticide cycle



achieving an Appropriate Level of Protection (ALOP) of human life and health;

7. The act also ensures that foods are not to contain any contaminants such as toxic metals, toxins, pesticide residues, antibiotics and veterinary drugs, in excess of limits prescribed under the regulation.

The Food Safety and Standards Authority of India (FSSA) acts as an autonomous body under the Ministry of Health and Family Welfare, Government of India. The Authority consists of a Chairperson and the twenty-two members in which one-third will be women members.

Consumer Protection Act-1986 and Food Safety

The consumer Protection Act, 1986, provides for the better protection of consumers. Unlike existing laws, which are punitive or preventive in nature, the provisions of this Act are compensatory in nature. The act is intended to provide simple, speedy and inexpensive redressal to the consumers' grievances, award relief and appropriately compensate the consumer. The act has been amended in

1993 both to extend its coverage and scope and to enhance the powers of the redressal machinery.

The Food Safety Act-2006 explicitly deals with the overall concerns related to food safety in India. The act envisages three-tier quasi-judicial consumer dispute redressal machinery at the national, state and district level. These agencies are popularly known as consumer forums or consumer courts. The Consumer Protection Act, which has been defined as "the Magna Carta of Consumers", spells out six consumer rights: Right to Safety, Right to Information, Right to Choice, Right to Representation, Right to Redress, and Right to Consumer Education. Still, the present scenario is not very encouraging. Unfortunately the consumer courts have become replica of legal courts, as the procedure is no longer simple and quick. The consumer redressal process is relatively cumbersome and more expensive and time-consuming than desired. The process involves engaging professional personnel for filing the case and attending the court proceeding and certain other formalities like producing the bill, warranty cards etc. These procedures need to be made simpler and quicker for making the process more meaningful and realistic.

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