

Survey of milk safety

November 8, 2019

Source: *The Hindu*

Manifest pedagogy: More than hunger, malnutrition has become key issue especially among the infants. Nutritional safety can ensure drastic reduction in IMR. Issues of healthy society is impossible without food safety. Adulteration has emerged a key challenge in ensuring food safety. Legislation backed with effective implementation will be the right step in that direction. The probability of asking the provisions of food safety and its shortcomings is higher in both prelims and mains.

In news: “National Milk Safety and Quality Survey, 2018” has been released.

Placing it in syllabus: Agriculture

Static dimensions:

- FSSAI
- Food adulteration in india

Current dimensions:

- F+ (Food fortification label)
- Food labeling standards
- Highlights of the survey

Content:

FSSAI:

- The Food Safety and Standards Authority of India (FSSAI) has been established under **Food Safety and Standards Act, 2006**.
- It has been **created for laying down science based standards** for articles of food and to regulate their

manufacture, storage, distribution, sale and import.

- **Ministry of Health & Family Welfare**, is the administrative ministry for the implementation of FSSAI.

Functions:

- Framing of Regulations to lay down the Standards and guidelines in relation to articles of food.
- Laying down mechanisms and guidelines for accreditation of certification bodies engaged in certification of food safety management system.
- Laying down procedures and guidelines for accreditation of laboratories and notification of the accredited laboratories.
- To provide scientific advice and technical support to Central Government and State Governments in the matters of food safety and nutrition.
- Collect and collate data regarding food consumption, incidence and prevalence of biological risk, contaminants in food, residues of various, identification of emerging risks and introduction of rapid alert system.
- Provide training programmes for persons who are involved or intend to get involved in food businesses.

Food adulteration in india:

- Adulteration is the **process of adding unwanted substances to the food**, with similar appearance/colour for making profits.
- Adulteration **lowers the quality of food** and toxic chemicals are also added which can be **hazardous to health**.
- The **Annual Public Laboratory Testing Report for 2014-15** of FSSAI says that of the 49,290 samples of food items it tested, nearly one-fifth, were found adulterated or misbranded.

- In 2019, **Rajasthan** has topped in registering cases under Food adulteration act, 1954.

Most **common adulterants** in India:

Milk – water, chalk, urea, caustic soda and skimmed milk.

Tea/Coffee – Tea leaves are usually adulterated with same coloured leaves, and Coffee seeds are adulterated with tamarind seeds, mustard seeds.

Vegetables and fruits – malachite green, a chemical dye, oxytocin saccharin, wax, calcium carbide and copper sulphate.

Sweets – Khoya and chenna in sweets are adulterated with starch. Sugar used in making sweets might be adulterated with tar dye.

Honey – molasses sugar

Dal – arhar dal is usually adulterated with metanil yellow which is a non-permitted food colour

Spices –

Turmeric → metanil yellow

Asafoetida → Soap stone or other earthy material

Black pepper → Papaya seeds, black berries

Red chilli powder → brick powder and artificial colours like Sudan Red

Saffron → coloured dried tendrils of maize cob

Ice cream – pepperoni, ethyl acetate, butyraldehyde, emil acetate, nitrate, washing powder.

F+ (Food fortification label):

- Fortification is the **addition of key vitamins and**

minerals such as Iron, Iodine, Zinc, Vitamins A & D **to staple foods** such as rice, wheat, oil, milk and salt to improve their nutritional content.

- These **nutrients may or may not have been originally present** in the food before processing or may have been lost during processing.
- **Micronutrient malnutrition, also known as hidden hunger** is a serious health risk.
- Sometimes due to **lack of consumption of a balanced diet, lack of variety in the diet or unavailability of food** one does not get adequate micronutrients.
- Hence fortification of food is a safe method of improving nutrition among people as the **addition of micronutrients to food does not pose a health risk** to people.
- **It does not alter the characteristics of the food like the taste, aroma or the texture of the food.**

According to the **National Family Health Survey (NFHS-4)**

- 58.4 percent of children (6-59 months) are anaemic.
- 53.1 percent of women in the reproductive age group are anaemic.
- 35.7 percent of children under 5 are underweight.

In August, 2018, FSSAI introduced the **Food Safety and Standards (Fortification of Foods) Regulations, 2018**, to regulate the provisions regarding fortified food.

Features:

- It **prescribes the standards of addition of micronutrients** for the purpose of food fortification. The manufacturers of the fortified food have to provide a quality assurance undertaking.
- **Packaging and labelling has to state the food fortificant added, +F logo and the tagline "Sampoorna Poshan Swasth Jeevan".**

- It should be in **compliance to** the Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Fortified salt: In 1950, Indians were among the first countries in Asia to implement mandatory salt iodisation. It is fortified with Iodine.

Fortified wheat: The flour is fortified with iron, vitamin A and folic acid.

Fortified rice: Iron, Folic Acid, Vitamin B12.

Fortified milk: Studies suggest the intake of fortified milk by children not only increased mean serum vitamin D levels but also decreased morbidity rates. It is fortified with Vitamin A, Vitamin D.

Fortified oil: Is fortified with vitamin A and D.

Food labeling standards:

According to "**FSSAI Guidelines on Labelling of Food Products**", the various characteristics which should be mentioned are:

- Name of the food product: It should be in clear format on the packaged product in clear font.
- List of Ingredients: Means the elements which have been utilized for making the final product.
- Nutritional Information: Means the calories which one gets from fats, saturated fat, trans fat, cholesterol, sodium, carbohydrates, dietary fiber, sugars, protein, vitamin A, vitamin C, calcium and iron present in the product.
- Declaration regarding Vegetarian or Non-Vegetarian: Green colour small sign present on the corner of the label indicates the product being vegetarian and red colour indicates that the product is non-vegetarian.
- Declaration regarding Food Additives: These are substances which are added to food to preserve flavor or

enhance its taste and appearance.

- Name and Address of the Manufacturer
- Net Quantity: It refers to the weight of the product combined with the packaging weight.
- Code No./Lot No./Batch No: It is a mark of recognition through which the food can be found in the manufacture and even recognized in the distribution.
- Date of Manufacture and Best Before & Use By Date
- Country of Origin for Imported Food
- Instructions for Use

Highlights of the survey:

The “**most comprehensive and representative**” milk safety and quality survey was undertaken on samples picked from over 1,100 town/cities with over 50,000 population collected between May and October, 2018. It was **conducted by an independent agency** at the behest of FSSAI.

Findings:

- **12 out of 6,432 samples of milk tested were adulterated.**
- Six samples were found adulterated with **hydrogen peroxide**, three with **detergents**, two with **urea** and one sample was found to have **neutralizers**.
- Out of 12 adulterated samples, **nine were in Telangana, two from Madhya Pradesh and one from Kerala.**
- **Presence of Aflatoxin M1 residues beyond permissible limits in 368 samples, that is 5.7% of the samples** was detected.
- Aflatoxin M1 was more widely **present in processed milk** samples than in raw milk.
- This is the first time that such a detailed survey of presence of Aflatoxin M1 in milk has been done.
- Amongst the **top three States** with the **highest levels of Aflatoxin M1** residues are **Tamil Nadu, Delhi and Kerala.**
- Around **1.2 % of the samples had residues of antibiotics** above the permissible limits.

- Amongst the top three States with the **highest levels of Antibiotics residues** are **Madhya Pradesh, Maharashtra and UP.**
- Only one **raw milk sample in Kerala** was found to **contain pesticide residue** above the permissible level.
- **About 41% samples, though safe, fall short of one or another quality parameter.**
- **Maltodextrin and sugar** which are added to raise the level of fat and SNF (Solid Non-fat) were present in processed milk.

FSSAI Survey has clearly shown that milk being sold in India is largely safe for consumption. While combatting adulteration requires more vigilant citizens and enforcement machinery, contamination in milk requires systemic improvements through the supply chain.