

ACTS REGULATING THE ENVIRONMENT: NATIONAL POLLUTION CONTROL BOARD

The world is becoming conscious and aware of the dangers with non-scientific methods of land fill, it is time we wake up to the threat staring at us. Unless concrete steps are taken in time, it may either be too late to recover, or too expensive to set things in order.

Government of India recognizes the impact of pollution on environment and to ensure that India moves in the right direction, Central Pollution Control Board (**CPCB**) was established.

Central Pollution Control Board (CPCB) was constituted in 1974 as per the provisions of the Water (Prevention and Control of Pollution) Act, 1974.

The CPCB has been playing a key role in abatement and control of pollution in the country by generating

- ✓ Relevant data.
- ✓ Providing scientific information.
- ✓ Rendering technical inputs for information of national policies and programmes.
- ✓ Training and development of manpower and organizing activities for promoting awareness at different levels of the Government and public at large.

The main function of the Central Pollution Control Board (CPCB)is spelt out in ‘Water (Prevention and Control of Pollution) Act, 1974’ and Air (Prevention and Control of Pollution) Act, 1981.

Functions:

1. To promote cleanliness of streams and wells in different areas of the States through prevention, control and abatement of water pollution.
2. To improve the quality of air and to prevent, control or abate air pollution in the country.
3. Advise the Central Government on any matter concerning prevention and control of water and air pollution and improvement of the quality of air.
4. Plan and cause to be executed a nation-wide programme for the prevention, control or abatement of water and air pollution.
5. Coordinate the activities of the State Boards and resolve disputes among them.
6. Provide technical assistance and guidance to the State Boards, carry out and sponsor investigations and research relating to problems of water and air pollution, and for their prevention, control abatement.
7. Plan and organise training of persons engaged in programmes for prevention, control or abatement of water and air pollution.
8. Organise through mass media, a comprehensive mass awareness programme on prevention, control or abatement of water and air pollution;
9. Collect, compile and publish technical and statistical data relating to water and air pollution and the measures devised for their effective prevention, control and abatement.
10. Prepare manuals, codes and guidelines relating to treatment and disposal of sewage and trade effluents as well as for stack gas cleaning devises, stacks and ducts.
11. Disseminate information in respect of matters relating to water and air pollution and their prevention and control.

12. Lay down, modify or annul, in consultation with the State Government concerned, the standards for stream or well, and lay down standards for quality of air.

13. Establish or recognize laboratories to enable the Board to perform; and

14. Perform such other functions as and when prescribed by the Government of India.

15. In addition to the above, the **CPCB** is empowered, on behalf of the Ministry of Environment & Forests.

To issue directions to any industry, local bodies, or other authority for violation of the notified general emission and effluent standards, and rules relating to hazardous waste, bio-medical waste, hazardous chemicals, industrial solid waste, municipal solid waste including plastic waste under the Environment (Protection) Rules, 1986.

Following proper methods of waste disposal and also acts regulating the environment is the important role of every citizen to protect our environment and to promote health and thereby development of the country.

FOOD HYGIENE

DEFINITION

It implies all conditions and measures that are necessary during the production, processing, storage, distribution and preparation of food to ensure that it is safe, sound, wholesome and fit for human consumption.”

-WHO

Aim

to prevent food poisoning and other food borne diseases.

MILK HYGIENE

Source of infection:

- The dairy animal
- Human handler
- The environment ex. Contaminated vessel, polluted water, flies, dust etc.

MILK BORNE DISEASE

Infection of animals that can be transmitted to man: TB, brucellosis, streptococcal infection, anthrax, leptospirosis, foot and mouth disease.

Infection primary to man that can be transmitted through milk:

Typhoid, cholera, TB, viral hepatitis, diphtheria, streptococcal infection, staphylococcal food poisoning.

Clean and safe milk

- Animal should be clean and healthy.
- Animal is housed and milked should be sanitary.
- Milk vessel must be sterile and kept covered.
- Milk handlers should be free from communicable disease.
- It should be cooled immediately to below 10 degree C after drawn.

Pasteurization of milk

Defined as the heating of milk to such temperature and for such periods of time as are required to destroy any pathogens that may be present while causing minimal changes in the composition, flavour and nutritive value.

Holder method (Vat method): Milk is kept at 63-66 degree for at least 30 minutes and then quickly cooled to 5 degree C.

HTST method (High Temperature and Short Time method): Milk is rapidly heated to a temperature of nearly 72 degree C is held in that temperature not less than 15 seconds and is then rapidly cooled to 4 degree C

UHT method (Ultra High Temperature): Milk is rapidly heated 125 degree C for few seconds then rapidly cooled and bottled as quickly as possible.

Test of pasteurized milk

1. **Phosphatase test** : used to check the efficiency of pasteurization.
2. **Standard plate count** : The bacteriological quality of pasteurized milk is determined by this test.
3. **Coliform count**

Meat Hygiene

The term meat includes various tissues of animal origin.

Diseases:

- Tape worm infestation:** T. solium,
T.saginata
- Bacterial infestation:** Anthrax,
TB,
Food poisoning

Charecteristic of good meat:

- ❖ Should be neither pale pink nor a deep purple,
- ❖ Firm and elastic to touch,
- ❖ Should not be slimy
- ❖ Have a agreeable odour.

FOOD PRODUCTION, PRESERVATION, PURCHASE

CONSUMPTION

Production: Method of production, kind of fertilizer used have some impact on health.

Preservation:

1. Preservation by cooling:

- ✓ Domestic methods:
- ✓ Wrapped in a wet cloth or kept in water , earthen pot or in refrigerator.

Commercial method:

Storing in cold storage chill storage and freezing

2. Preservation by heat:

Domestic heat preservation by

- ❖ boiling,
- ❖ cooking,
- ❖ frying.

On large scale following technique are used:

- Pasteurization
- Sterilization

3. Preservation by dehydration:

- ✓ Natural dehydration.
- ✓ Dehydration by heat.
- ✓ Chemical dehydration.

4. Preservation by chemicals:

- Addition of sugar
- Salt and oil
- Na benzoate citric acid: sauce, pickles

PURCHASE

Food standards

1. **Codex Alimentarius:** Principal organ of FAO/WHO formulates food standards for the international market. Food standards in India are based on the standards of Codex Alimentarius.

2. **PFA standards :** The purpose is to obtain a minimum level of quality of foodstuffs attainable under Indian conditions.

4. **Bureau of Indian standards :** The ISI mark on any article of food is a guarantee of good quality in accordance with the standards prescribed by the Bureau of Indian Standards.

3. **AGMARK standards:** Set by Directorate of Marketing and Inspection of the Govt. of India. It gives the consumer an assurance of quality in accordance with the standards laid down.

Preparation Of Food-

Cooking principles:

- ✓ Conservation of nutrients
- ✓ Duration of preparation
- ✓ Use of resources
- ✓ Safety from resources
- ✓ Safety from hazards
- ✓ Needs of special groups
- ✓ Dietary goals
- ✓ Protection of naturalness

- ✓ Food hygiene
- ✓ Environmental protection

Food handlers:

- ✓ Complete medical examination at the time of employment
- ✓ Person with communicable disease are not employed
- ✓ Person with wound ,skin infection are not permitted to handle food or utensils
- ✓ Hands
- ✓ Hair
- ✓ Overalls
- ✓ habits

Food consumption

- Clean the hands before eating food
- Finger nails should be cut short and free from dirt
- Utensils used should be clean
- Eat in clean and hygienic area
- Well balanced diet

Food borne disaeses

Bacterial disease: Typhoid fever, paratyphoid fever salmonellosis, Ecoli diarrhea, food poisoning.

Viral diseases: Viral hepatitis gastroenteritis.

Parasites: Ascariasis, amoebiasis.

Food additives

Non nutritious substances which are added intentionally to food generally in small quantity to improve its appearance, flavour texture or storage properties.

First category: Colouring agents, flavouring agents, preservatives, acidity imparting agents.

Second category: Contaminants incidental through packing, processing steps, farming practices.

Food fortification

Process where by nutrients are added to food (in relative small quantity) to maintain or improve the quality of diet of group, community or a population

Ex: iodized salt, fluorine to water, Vitamin A and to milk, vansapathi.

Food adulteration

It's an age old problem, it consists of a large number of practices, ex: mixing, substitution, putting up decomposed foods for sale, misbranding or giving false labels and addition of toxicants.

Food material

Common adulterants

Chilli powder

brick powder

Ice cream

cellulose , starch, colours

Rubber

Skimmed rubber

Rice

mud, grits, soapstone bits.

METEOROLOGICAL ENVIRONMENT

CLIMATE

Climate is a geographical concept representing a summation of the whole range of meteorological phenomena

Elements:

- 1) Atmosphere pressure
- 2) Air temperature
- 3) Humidity and Rainfall
- 4) Direction and speed of wind
- 5) Movement of clouds & Character of weather

ATMOSPHERIC PRESSURE

- Man is physiologically adapted to live at 760mm of Hg pressure or close to it
- The atmospheric pressure falls as altitude increases and rises as altitude decreases.
- Measurement: instrument is used is Barometer. well known are Fortin's barometer, the new station barometer and the barograph.

Effects of atmospheric pressure

- a) High altitude:** Physiological changes :increased respiration, increased concentration of Hb, increased cardiac output.

It causes Acute mountain sickness: headache, insomnia, nausea, vomiting, impaired vision. Pulmonary oedema, cough, mental confusion, hallucination, coma.

b) Low altitude:

- ✓ Excess N₂ causes narcotic action leading loss of function and consciousness

- ✓ Excess CO₂ causes convulsion and death
- ✓ When the person comes up to the surface the gases dissolved in the blood are released and cause air embolism

AIR TEMPERATURE

Measurement: thermometer is used

- ✓ Mercury thermometer
- ✓ Alcohol thermometer

Dry bulb thermometer: For accurate reading it is mounted on the “Stevenson screen” at a height of 1.20 to 1.80m above the ground level

Wet bulb thermometer: Same as dry bulb thermometer but the bulb is kept wet by a muslin cloth fed by water from a bottle through a wick.

HUMIDITY

Is the amount of water vapor in the air. Water vapor is the gaseous state of water and is invisible. A device used to measure humidity is called a psychrometer or hygrometer

Effects of high humidity:

- ✓ Difficulty breathing.
- ✓ Asthma,
- ✓ Anxiety.
- ✓ Hyperventilate,
- ✓ Faintness & Loss of concentration,