



## Pesticide Poisoning

**For Prelims:** [Droughts](#), [Crop Failures](#), [pesticide poisoning](#), Insecticides Act, 1968 and the Insecticides Rules, 1971.

**For Mains:** Importance of pesticides as per agricultural productivity is concerned and associated health and Environmental concern.

**Source:** TH

### Why in News?

Recently, in **Maharashtra** which is prone to [droughts](#) and [crop failures](#), [pesticide poisoning](#) has claimed the lives of many farmers and farm workers in recent years.

- 20 farmers have died due to pesticide poisoning in Yavatmal district alone **since 2017**.
- Many others have suffered from [respiratory problems](#), [skin rashes](#), [eye irritation](#), [neurological disorders](#), **reproductive issues**, [cancer](#), and even death.

### What are Pesticides?

- **About:**
  - Pesticide is any **chemical or biological substance** intended to **prevent, destroy or control damage** from pests which has both **agricultural** and **non-agricultural** uses.
  - They also pose serious risks to [human health](#) and the **environment**, especially when they are **misused, overused**, or **sold illegally**.
- **Types:**
  - **Insecticides:** The chemicals that are used to protect plants from insects and pests are known as Insecticides.
  - **Fungicides:** This class of crop protection chemicals is used to control the spread of fungal diseases in plants.
  - **Herbicides:** Herbicides are chemicals that kill or control the growth of weeds in the cultivation area.
  - **Bio-Pesticides:** They are Pesticides of biological origin, i.e., derived from animals, plants, bacteria etc.
  - **Others:** This includes plant growth regulators, nematicides, rodenticides and fumigants.
- **Pesticide Poisoning:**
  - **Pesticide poisoning** is a term that refers to the **adverse effects of exposure to pesticides on humans or animals**.
  - According to the [World Health Organization \(WHO\)](#), **pesticide poisoning** is one of the leading causes of **death** among **agricultural workers** worldwide.
  - Pesticides can be classified into two types, **Acute (short-term)** and **chronic (long-term)**.
    - **Acute poisoning** occurs when a person **ingests, inhales, or comes into contact** with a large amount of pesticide in a **short period of time**.
    - **Chronic poisoning** occurs when a person is exposed to **low doses** of pesticide

over a **long period of time**, which can cause damage to various organs and systems in the body.

▪ **Recently Banned Pesticides:**

- The government has banned three more insecticides in **2023: Dicofol, Dinocap, and Methomyl**, in addition to **monocrotophos**.

## How Pesticides are Regulated in India?

- Pesticides are regulated under the **Insecticides Act, 1968** and the **Insecticides Rules, 1971**.
- The **Insecticides Act of 1968** covers the **registration, manufacture and sale of pesticides in India**.
- The Act is administered by the **Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare**.

## Note

The **Pesticide Management Bill, 2020** was introduced in **Rajya Sabha** in 2020. It seeks to regulate the **manufacture, import, sale, storage, distribution, use, and disposal of pesticides**, in order to ensure the availability of safe pesticides and minimize the risk to humans, animals, and environment. The Bill seeks to replace the **Insecticides Act, 1968**.

## What are the Concerns regarding uses of Pesticides?

- **Harmful Effects on Farmers:**
  - Experts believe that **chronic low-level pesticide** exposure is associated with a broad range of **nervous system symptoms** such as **headache, fatigue, dizziness, tension, anger, depression, and impaired memory, Parkinson's disease, and Alzheimer's disease**, among others.
- **Harmful Effect on Consumers:**
  - Pesticides go up the food chain by working their way through the environment and into the soil or the water systems after which they are taken by **aquatic animals or plants** and ultimately humans. This process is called Biomagnification.
- **Harmful Effect on Agriculture:**
  - Continued use of pesticides for decades has contributed significantly to the **current ecological, economic and existential crisis** of the Indian agriculture sector.
- **Regulatory Issues:**
  - Although agriculture is a **state subject, education, and research** related to insecticides are governed by the **Insecticides Act, 1968**, which is a **central act**. Therefore, **state governments do not have a direct role** in amending this act.
    - It is due to this that an estimated **104 pesticides** that are still produced/ used in India, have been banned in two or more countries in the world.
  - In 2021, non-profit **Pesticide Action Network (PAN)** International released a list of **highly hazardous pesticides**, of which over **100 pesticides** are currently approved for use in India.

## Way Forward

- **Regulatory Reforms:**
  - Strictly enforce regulations to **curb the illegal sale and misuse of pesticides**.
  - Implement penalties for those found violating pesticide usage guidelines.
- **Government Support:**
  - Provide financial support to farmers to help them adopt safer and more **sustainable agricultural practices**.
  - This could include **subsidies for organic farming, integrated pest management, or the purchase of safer pesticides**.

▪ **Community Awareness Programs:**

- Conduct awareness campaigns at the community level to educate people about the risks associated with pesticide use.
- Involve local communities in monitoring and reporting cases of misuse or poisoning.

▪ **Compensation Mechanism:**

- Establish a **compensation mechanism** for victims of **pesticide poisoning**.
- Ensure a **swift and transparent process** for **filing claims** and **receiving compensation** for medical expenses and economic losses.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

**Q. Lead, ingested or inhaled, is a health hazard. After the addition of lead to petrol has been banned, what still are the sources of lead poisoning? (2012)**

1. Smelting units
2. Pens and pencils
3. Paints
4. Hair oils and cosmetics

**Select the correct answer using the codes given below:**

- (a) 1, 2 and 3 only  
(b) 1 and 3 only  
(c) 2 and 4 only  
(d) 1, 2, 3 and 4

**Ans: (b)**

**Q. In India, the use of carbofuran, methyl parathion, phorate and triazophos is viewed with apprehension. These chemicals are used as (2019)**

- (a) pesticides in agriculture  
(b) preservatives in processed foods  
(c) fruit-ripening agents  
(d) moisturizing agents in cosmetics

**Ans: (a)**

- To promote organic farming, the Department of Agriculture, Kerala, has ordered a ban on the use of around 17 pesticides since 2011.
- The list of banned pesticides are:
  - **Insecticides:** Cabofuran, Methyl Demeton, Methyl Parathion, Monocrotophos, Phorate, Methymol, Profenofos, Triazophos, Endosulfan
  - **Fungicides:** MEMC, Ediphenphos, Tricyclazole, Oxythioquinox
  - **Weedicides:** Anilophos, Paraquat, Thiobencarb, Atrazine
- Therefore, option (a) is the correct answer.