



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.