

## 2. Pesticides

Nutrients, especially of agricultural origin products production, consumption and storage during the food directly or indirectly damages any kind of organism, disease-spreading insects, plant pathogens and agricultural pests such as weeds push away, destroy all chemical and biological agents or products and that are used to reduce the effects of "pesticide" is referred to as.

1. Biocidal action: Killing Microorganisms
2. Biostatic action :By inhibiting the Growth of Microorganisms

**Pesticides can be classified in many ways:**

**A. According to the formulation;**

The active substances used in the production of powder, granules, solution, pellets and pesticides are mixed with some auxiliary substances. This mixture is called formulation. In this way, safer, less harmful and economical use is provided for human and environmental health.

**B. According to the target organism type;** herbisit, insectisit, fungisit, rodentisit, nematosit, algisit etc. Apart from this, some pesticides drive away, repel or attract certain living things.



**C. According to the mode of action;** through nutrients, through contact, through respiration

**D. According to the active ingredient it contains;**

a. containing chlorinated hydrocarbons.

b. acetyl choline esterase inhibitors

- Organophosphate Pesticides

- Carbamate Pesticides

c. Pyrethroid Pesticides

**DDT** is one of the best known of chlorinated hydrocarbons. This group of pesticides are fat-soluble and tend to accumulate in living tissue. The use of DDT has been banned in Turkey since 1985. BHC (benzene hexachloride), Chlordane, Heptachlor, Aldrin, Dieldrin, Endrin, Lindane, Toxaphene are other chlorinated hydrocarbon insects that are prohibited.



**Acetylcholine esterase inhibitors** are 2 groups including organophosphate and carbamate. Both groups inhibit the enzyme acetylcholine esterase. Organophosphate insecticides account for about half of the pesticides on the market. A large part of it can be fragmented in nature. Those containing carbamate (carbamic acid esters) are easily broken down in nature, especially by sunlight. Their effect is lower than in organophosphates.

**Piretroit** based pesticides are obtained from the extracts of *Pyrethrum* sp. and *Chrysanthemum*. They are broad-spectrum. In mammals, its toxicity is low and it can break down in nature. But it is an expensive pesticide group and has started to be used in recent years. Pyrethrin-derived insecticides are also produced synthetically today.



## **Environmental problems related to pesticides;**

- Pesticides can affect living things other than the target organism.
- Resistance to pesticides can be improved.
- They may have a carcinogenic and mutagenic effect.
- Since most of them tend to accumulate, it's a big risk that they're going into the food chain.