

CARBAMATES

- Carbamates are organic compounds. They are derived from carbamic acid. As organophosphate insecticides, carbamate insecticides also **inhibit cholinesterase enzymes**.
- Carbamates are used to kill pests in **homes, gardens, and agriculture**
- They are **relatively unstable compounds** that break down in the environment within weeks or months

Acute toxicity

- Onset and severity of symptoms are dose related in the case of carbamate pesticides.
- **Excessive salivation** and **heavy breathing** are observed after 30 min following administration of a low dose of carbamate pesticide.
- When the dose level is higher, it will cause **excessive tearing, urination, uncontrollable defecation**(discharge of feces from body), **nausea**, and **vomiting**
- At the maximum dose, additional symptoms develop that include violent intestinal movements, muscle spasms, and convulsions. In some cases death occurs owing to respiratory failure resulting from paralysis of respiratory muscles

Chronic toxicity

- Unlike organophosphorus compounds, carbamate compounds do not cause a delayed neurotoxic reaction when inhibiting cholinesterase.
- Rats fed high doses of carbaryl for long time did not show any symptoms of reproductive or foetal effects.
- On the other hand, rats fed very high doses of carbofuran (5 mg/kg/day) for 2 years showed decrease in weight.
- Prolonged or repeated exposure to carbofuran may cause the same effects as an acute exposure