Insecticides of Public Health Importance

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Types of Insecticides

Two major types of insecticides are used in Public Health

• Residual Insecticides
• Non-residual insecticides
Non-residual Insecticides

- Do not possess a lasting effect
- Are unstable in light and air
- Eg is Pyrethrum – quick-acting with a knock down effect
  - Can be used as dusting powder, atomised space spray or in slow-burning coils which produce insecticidal smoke
Residual Insecticides

• Stable, organic chemicals when applied to a surface

• They remain toxic for sometime, usually several months to insects resting on that surface

Commonly used residual insecticides are:

1. Organochlorides
2. Organophosphates
3. Carbamates
1. Organochlorines (Chlorinated Hydrocarbons)

Examples include;

• DDT (Dichloro-diphenyl-Trichoroethane)
• Gamma BHC (Gamaxane,Lindan)
• Chlordane (Octachlor)
• Dieldrin
• Aldrin
2. Organophosphates

Examples

- Abate (Temephos)
- Ronnel (Fenchlorphos)
- Malathion (Cynthion)
- Dichlorvos (Nuvan)
- Fenthion (Baytex)
- Fenithrothion (Sumithion)
3. Carbamates

• Examples
• Carbaryl (Sevin),
• Propoxure (Baygon)
Insecticide Poisoning

Organochlorides

• Signs of acute poisoning by organochlorides include: Convulsion, Liver damage

• Chronic poisoning; will lead to nervous symptoms (hyperexcitability, anxiety and tremors), Loss of appetite and weight loss

• Treatment: Phenobarbitone, Remove patient from contact with insecticide
Insecticide Poisoning

Organophosphates

• Organophosphates inhibit cholinesterase leading to symptoms of excess acetylcholine
• Symptoms of organophosphate poisoning include bronchial disturbance, headache, faintness, blurred vision, nausea, abdominal cramps, bronchospasm, excessive salivation, muscle twitching, convolution and coma.
• Treatment – IV Atropine, and 2-pyridinium aldoxin methiodide (2-PAM-iodide)
Insecticide Poisoning

Carbamates

• Poisoning by carbamates leads to irreversible cholinesterase inhibition complex.

• Treatment – Atropine only