



# **INORGANIC INSECTICIDE**

## Inorganic insecticides

1. Paris green, an arsenical compound was first used in 1867 for the control of Colorado potato beetle.
2. **Paris green is a mixture of** Copper acetate and Copper arsenate.
3. **Mercuric chloride** is used in book binding. Ants are repelled by ant tapes containing mercuric chloride.
4. **Cryolite** is Sodium fluoaluminate.
5. **Coalter** is an adhesive for the control of grasshoppers.
6. **Pentachlorophenol** is used as a repellent against termites.
7. **Formaldehyde** is used in poison bait of houseflies.
8. **Phosphorous** is used as poison bait for cockroaches.
9. **Thallium sulphate** is used in poison bait of ants.
10. **Drie-die** is a finely divided silica gel which abrades the insect cuticle.
11. **Metalddehyde** is a molluscicide.
12. **Elemental sulphur** is used for the control of mites.
13. **Bordeaux mixture** is a mixture of Copper sulphate, lime and water (1:1:100)
14. First inorganic systemic insecticide is **Sodium selenate**.

## Arsenic compounds:

- Stomach poisons
- The water solubility of arsenic may result in entering the foliage and causing burning injury to plants, and hence water insoluble compounds are preferred for insect control
- Arsenates are more stable and safe for application on plants than arsenites  
Arsenites are mainly used in poison baits since they are phyto-toxic.
- Causes regurgitation, torpor (sluggishness) and quiescence
- Disintegration of epithelial cells of the mid-gut.
- Clumping of the chromatin of the nuclei
- Slow decrease in oxygen consumption due to the inhibition of respiratory enzymes
- Water soluble arsenic causes wilting followed by browning and shriveling of the tissue.
- **Paris green** is a mixture of Copper acetate and Copper arsenate

Character	Calcium Arsenate	Lead Arsenate	Arsenite
Common name	-	-	Paris green
Usage	Dust or spray	Spray or Bait	Bait
LD50-mg/kg	35-100	10-100	22
Dosage	0.675 to 1.350 kg with equal quantity of slaked lime in 450 litres of water	0.45 to 1.8 kg of lead arsenate is diluted with 200-240 litres of water	-
Pest	Leaf eating pests	Gypsy moth	Colorado potato beetle

# Flourine Compounds:

- Stomach poisons and slightly contact poisons.
- The kill is more rapid than that of arsenicals
- Toxixity is related to the fluorine content and solubility in the digestive juices of insect.
- Produces spasms, regurgitation, flaccid paralysis and death
- **Sodium fluoride: 93 to 99%** purity in commercial products.
- Highly phyto-toxic and used in poison baits
- Used exclusively against cockroaches, earwigs, cutworms, grasshoppers etc.

## Other inorganic compounds

### 1. Sulphur: Primarily fungicide and acaricide

- Formulated as fine dust (90 to 95% a.i. with 10% inert material)
- Also formulated as wettable powders.
- Effectiveness increases with fineness of sulphur particles

### 2. Lime Sulphur: Aqueous solution of calcium poly-sulphide

- Prepared by sulphur solution in calcium hydroxide suspension
- Used against scales, mites, aphids besides powdery mildew

## Properties:

1. Affect nervous system causing paralysis at higher concentration
2. Not phytotoxic
3. Leave no harmful side effects

4. Highly toxic to mammals

5. No residue problem

So can be used safely before harvest of the produce