

B.Sc. III Year (Theory)
Semester –VI
Paper XX (C)
Microbiology and Disease Management

Unit-2
Disease management:
2. Control methods
C. Fungicides
iii. Mercuric Chloride – Agrosan – GN

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Mercury Fungicides

Mercury fungicides

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graph TD; A[Mercury fungicides] --> B[Inorganic]; A --> C[Organic]; B --> B1["1. Mercuric chloride HgCl2"]; B --> B2["2. Mercurus chloride Hg2Cl2"]; C --> C1["1. Ethyl mercury chloride (EMC)"]; C --> C2["2. Phenyl mercury acetate (PMA)"]; C --> C3["3. Methoxyethyl mercury chloride (MMC)"]
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Inorganic

1. Mercuric chloride HgCl_2
2. Mercurus chloride Hg_2Cl_2

Organic

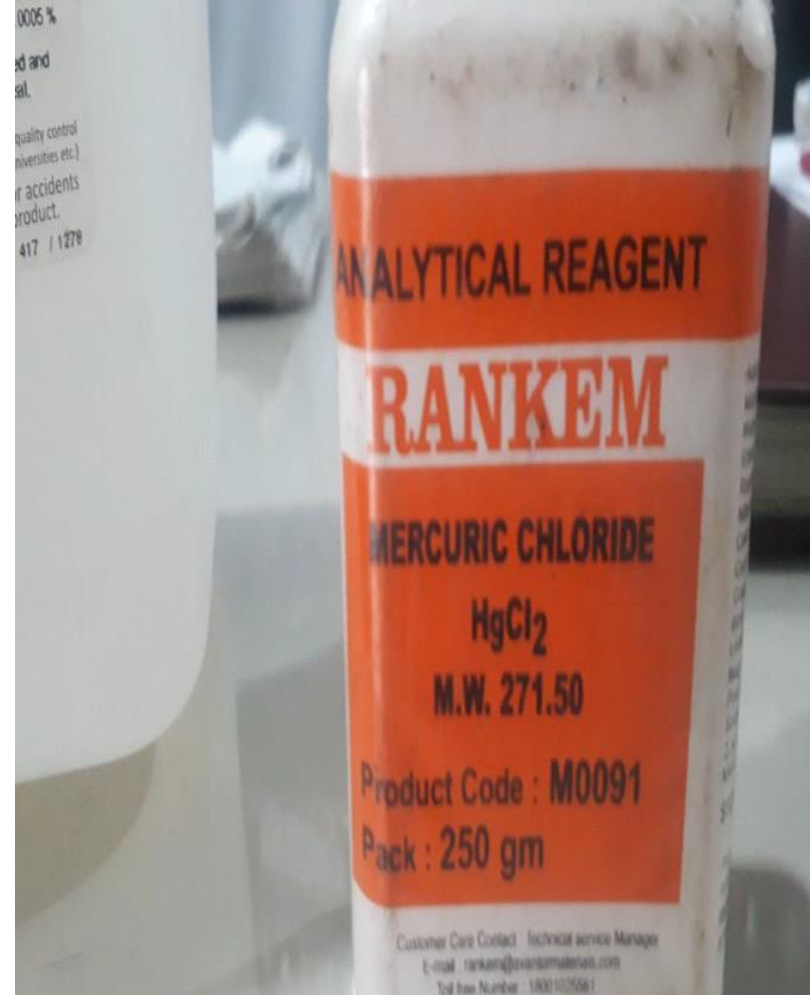
1. Ethyl mercury chloride (EMC)
2. Phenyl mercury acetate (PMA)
3. Methoxyethyl mercury chloride (MMC)

Mercury

- The main source of **inorganic** mercury as a toxic hazard is through the use of mercury-containing materials in dental laboratories , insecticides, and batteries.
- **Organic** mercury compounds are used as seed dressings (treatments to prevent fungal and bacterial infection of seed and to improve the seed's dispersion and adhesiveness) and fungicides.

MERCURIC CHLORIDE (Agrosan-GN)

Mercurial compounds have been known for their fungicidal and bactericidal properties. These have been used mostly for treating the seeds to protect them from fungal attack. Some compounds had been used as fruit and foliage protectants. The first important commercial product was “Uspulum”. Organomercurals are very widely used for seed treatment. Uspulum contained 16.1% metallic mercury in the form of crystal mercuric cyanide ($\text{CHO}(\text{CH})_3\text{C}_6\text{HK}_3\text{HgCN}$). The general structure of these derivatives is R-Hg-X. where R- hydrocarbon with or without substitute groups, X- an acid radical such as chloride, nitrate, acetate, benzoate, gluconate etc.



R is usually ethyl or phenyl group. Some of the important compounds are Agrosan GN(phenyl mercury acetate and ethyl mercury chloride mixture). Such chemical can be used either as dips or dust. Rate of application is 0.25% for wet seed treatment 2.5-6%. The site of fungicidal activity of mercury either as vapour or ion. Organomercurals are more toxic than inorganic mercurals.

Seed injury is considered one of the hazards in the use. Organomercural fungicides are mainly used to control externally seed borne diseases since these compounds are able to eradicate the inoculums from the seed.

Thank You