

Technical Bulletin #19:

Agrochemical General Information Sheet - Malathion

MALATHION: Insecticides/Miticides

Registered trade names in Cambodia: Malate 20EC, Malate 50EC

Formulation types: Emulsifiable Concentrate (EC), Wettable Powder (WP) and others

Chemical family: Organophosphorus

What is Malathion?

Malathion is an organophosphate (OP) insecticide that has been registered for use in the United States since 1956. It is widely used against a variety of target pests such as mites, sucking and chewing insects, weevils (maize weevil), leaf beetles, soil beetles, leaf miners, caterpillars (armyworm), and fruit flies.

How it works? (Mode of Action)

Malathion kills insects by preventing their nervous system from working properly. When the chemical comes in contact with insects, it attacks enzymes in the nervous system, causing insect paralysis and disturbs normal breathing and eventually they die. Malathion works more effectively if the temperature is 20 °C or higher.

Resistance:

No matter how good the application of any insecticide is, there will be always some individual insects that will survive. Offspring of these surviving insects will acquire resistance to that insecticide and to other insecticides that have the same or similar mode of action.

To delay insecticide/miticide resistance:

- Rotate Malathion with insecticides belonging to different groups that control the same pests.
- Do not spray Malathion or any other insecticide belonging to the same group more than two times per crop cycle.
- Insecticide/miticide use should be based on an IPM program that includes scouting and record keeping and considers cultural, biological, and other chemical control practices.
- Monitor treated pest populations for resistance development.
- Contact the local extension specialist or certified crop advisors for any additional pesticide resistance-management or IPM recommendations for the specific site and pest problems in your area.

Human Hazards	Environmental Fate
Low acute toxicity	Bird (quail): Moderately toxic
Slight eye irritation	Fish (trout): Toxic
Slight skin irritation	Mammals (rabbit): Slightly toxic
	Bee (honey): Highly toxic
	Ground/surface water: Low risk to water contamination
	Soil: low persistence and is degraded rapidly in soil by sunlight and microorganisms



First aid measures:

Inhalation: Move person to fresh air. If person is not breathing, call a health center or doctor immediately for further treatment advice.

Skin Contact: Take off contaminated clothing. Rinse skin with plenty of water for 15-20 minutes. Call a health center or doctor for treatment advice.

Eye Contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call to health control center or doctor for treatment advice.

Ingestion: Call a health center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Mitigation Measures:

- Applicator must wear protective clothing such as long sleeved shirt and long pants, rubber gloves, boots, goggles, etc.
- Wash with soap and water after use.
- Do not eat, drink, or smoke while preparing or applying pesticides.
- Avoid allowing children, pets, or sensitive people in treatment areas to prevent accidental exposures during pesticide applications.
- Chemical mix tanks have to be cleaned in designated areas.
- Apply under favorable weather conditions (no wind or rain).
- Do not contaminate water, food, or feed by improper storage or disposal.
- Do not store and do not use in or around the home.
- Do not reuse containers for any purpose.
- Rotate use with other chemicals.
- Correct implementation of IPM practices.
- Do not use near open water sources.
- Do not apply when bees are active.

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