

Technical Bulletin #21:

# Agrochemical General Information Sheet - Permethrin

**Permethrin: Insecticides**

Registered trade names in Cambodia: Map Permethrin 50EC, Perkill 25EC, Vigo 500EC.

Formulation types: Liquids, powders, dusts, aerosol solutions, and sprays.

Chemical family: Pyrethroid.

**What is Permethrin?**

Permethrin is a synthetic pyrethroid that derivatives of naturally occurring pyrethrin extracted from dried chrysanthemum flowers. Synthetic pyrethroids are more stable than natural pyrethroids, and therefore longer lasting in the field. Although they are often thought of as “safe as chrysanthemums,” they are chemically engineered to be more toxic than natural pyrethroids. Permethrin is used to control insects in agriculture, forestry, household pests, and in public health programs. For agriculture, it controls thrips, leaf miners, whiteflies, aphids, leaf beetles, and caterpillars (stalk borer) on a wide range of agricultural crops, vegetables, corn, and melons. It is effective against all stages of insect growth, particularly larvae.

**How does it work?**

Permethrin can affect insects if they digest it or touch it. Permethrin affects the nervous system in insects, causing muscle spasms, paralysis and death.

**Resistance:**

Resistance to permethrin has been documented in a wide variety of insects. These species include all armyworms, leafminers, diamondback moths, house flies, and tobacco budworms. Many of these species are resistant to other synthetic pyrethroids as well as permethrin. Therefore, permethrin and other chemicals of the same family group as this insecticide should not be applied repeatedly in a crop life cycle.

Human Hazards	Environmental Fate
Moderately toxic	Bird (quail): Nontoxic
Possible human carcinogen	Fish (trout): Extremely toxic
	Mammals (rabbit): Low toxic
	Bee (honey): Highly toxic
	Ground/surface water: No threat

**First aid measures:**

Inhalation: Move to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

Skin Contact: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists

Eye Contact: Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention

Ingestion: Rinse mouth with water. Dilute by drinking 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. See a medical doctor immediately.



### Mitigation Measures:

- Wear protective clothing such as long sleeved shirt, 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 treated areas to prevent accidental exposure during pesticide applications.
- Chemicals should be mixed and tanks cleaned in designated areas.
- Apply under favorable weather conditions.
- Do not contaminate water, food, or feed by improper storage or disposal.
- Not for use or storage in or around the home.
- Do not reuse containers for any purpose.
- Chemical rotation.
- Correct implementation of IPM practices.
- Do not use near open water sources or fish ponds.
- Do not apply when bees are active.

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## Permethrin

### 1. Product Name: Map Permethrin 50EC



Bean cutworm<sup>1</sup>



Leaf miner



Mealy bugs

### 2. Direction for use:

Crop	Insect	Recommended Ratio
Rice	Leaf folder	6-10ml/tank of 16 l, 2-2.5 tanks/1,000m <sup>2</sup>
Grape	Leaf miner	
Cashew	Bug	10-15IL/tank of 16 l, 2-2.5 tanks/1,000m <sup>2</sup>
Coffee	Mealy bugs	
Peanut	Green worm	13-18/tank of 16L, 2-2.5 tanks/1,000m <sup>2</sup>
Soybean	Fruit cutworm	18ml/tank of 16L, 2-2.5 tanks/1000m <sup>2</sup>

<sup>1</sup> Images were taken from <http://onvegetables.com/2011/05/09/western-bean-cutworm-in-vegetables/>