

Technical Bulletin #53:

Agrochemical General Information Sheet – Mancozeb

Mancozeb: Fungicide

Registered trade names in Cambodia: Manthane M-45-80 WP

Formulation types: Dustable powder (DP), Powder for dry seed treatment (DS), Suspension concentrate (SC), Water Dispersible Granule (WG), Wet Powder (WP)

Chemical family: Dithiocarbamate

What is Mancozeb?

Mancozeb is a broad spectrum fungicide. It is used to control a number of fungal diseases, such as Anthracnose, Pythium blight, leaf spot, Downy mildew and rust on wide range of field crops, fruits, nuts, and vegetables such as cucurbits, banana, papaya, pepper, eggplant, sweet potato, onions/chives, garlic, tomatoes, herbs, okra, lettuce, etc. In the market, Mancozeb is also sold in combination with many other fungicides to give more specialized effects.

How it works? (Mode of Action)

Mancozeb is a non-systemic fungicide with protective and contact action. When fungi come in contact with Mancozeb, it acts on multiple sites in fungal cells disrupting lipid metabolism, respiration and production.

Resistance

Resistance occurs when a pathogen becomes insensitive to a fungicide. Mancozeb has been in the market since 1948 and there are not yet any reports about disease resistance. However, we still must take preventative measures to avoid a resistance to develop. To delay resistance, cultural control measures can be used to reduce the pathogen populations by reducing its survival rate, dispersal and reproduction. The cultural measures include: the use of disease-free, healthy seeds, management of plant nutrition, and use of crop rotation and plant cultivar mixtures.

How to use it

Mancozeb is one of the best options we have to control fungal disease. When weather conditions are favorable for fungal disease development it is better to use it in a preventative way and should be alternated with other fungicides like Chlorothalonil. When you see the first symptoms of a fungal disease or it has been consistently hot or rainy, you should do a first application of Mancozeb. Seven days later, do another application of Chlorothalonil. If there still exist favorable conditions for disease, continue using these two products alternating them every 7 days.

Human Hazards:	Environmental Fate:
Moderately irritation to skin	Bird (quail): Slightly toxic
Low acute toxicity	Fish (trout): Moderately toxic
Probable human carcinogen	Mammals (rabbit): Slightly toxic
	Bee (honey): Non-toxic
	Ground water/surface water: No threat

First aid measure:

Inhalation: Move the victim to fresh air and keep at rest. If symptoms persist, call a physician.

Skin Contact: If clothing and skin are contaminated, remove the clothes and wash the contaminated skin with copious amounts of soap and water.

Eye Contact: If eyes are contaminated, flush with plenty of clean water for about 10 to 15 minutes. If irritation persists, seek medical advice.

Ingestion: Call a health center or doctor immediately for treatment advice. Give the intoxicated person a glass of water if able to swallow. Do not induce vomiting unless told to do so by the health center or doctor. Do not give anything by mouth to an unconscious person.

Mitigation Measures:

- Wear full protective clothing such as a long-sleeved shirt, long pants, rubber gloves, boots, glasses, etc. while mixing and spraying.
- Wash thoroughly the contaminated clothes and parts of the body after spraying.
- Contain spills and absorb with sand, soil, or absorbent granules.
- Do not allow product or washings to enter the waterways or sewer.
- Do not smoke, drink, eat and chew anything while spraying.
- Triple rinse empty containers prior to disposal. Do not re-use empty containers for any other purpose
- Store in the original container in a cool, dry, ventilated place.
- Keep away from foodstuffs, empty foodstuffs containers and animals feed.
- Avoid contact with mouth, eyes and skin.
- Do not allow product to get wet in storage.
- Never use or storage in or around the home.
- Keep container sealed when not in use.
- Do not apply around open bodies of water (fish ponds) and water sources.
- Chemical sprayers and mix tanks have to be cleaned in designated areas.
- Apply under favorable weather conditions.
- Practice chemical rotation.
- Practice correct implementation of integrated pest management (IPM) practices.

Cambodia HARVEST

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Mancozeb

1. Product Name: Manthane M-45-80 WP



Leaf spot on coffee



Early and late blight on tomato leaf



Incomplete seeds on rice



Downy mildew on grapes

2. Direction for use

Crop	Target Insect	Recommendation Rate
Rice	Yellow leaves	50g/tank of 16 l, 400l/ha (25 tanks/ha or 3tanks/1.000m ²)
	Dead/burn leaves, incomplete seeds	
Grapes	Anthracoze (black spot), Downy mildew	80-100g/tank of 16 l, 500-600 l of water/ha (31-38 tanks/ha or 3-8 tanks/1.000m ²)
Coffee	Leaf spot	500-600g/100 l of water
	Burn leaves	
Cashew	Leaf spot, burn leaves	300-350g/100 l of water
Lychee	Mildew	350g/100 l of water
Tomato, potatoes	Early and late blight, Anthracnose, leaf mold, septoria leaf spot	50-70g/tanks of 16 l, 480 l/ha (30tanks/ha or 3tanks/1.000m ²)

Note: - Apply on stem and in flowering stage
- Pre-harvest interval: 7days