

# Product Data Sheet

## NoroTec™ Manganese/Copper



### FIELD OF APPLICATION

Foliar micronutrient against manganese and copper deficiency in agricultural crops.  
Micronutrient for foliar and seed application against manganese and copper deficiency.

#### Content per litre

85 g Manganese, 33 g Copper, 59 g sulphur, 21 g nitrogen.  
The content is chelated.

#### Precaution

Irritant to eyes and skin. Harmful: Risk of serious health injuries at long time exposure by breathing or eating.  
Toxic to water living organisms, can cause harmful effects in the water environment.

Keep out of reach for children. Do not breathe spray mist .Use suitable protective gloves and eye/face protection.  
This material and its container shall be taken care of as hazardous waste.  
Avoid contaminating the environment. Read special instructions/safety data sheet.

To avoid risks for humans and the environment, follow the recommendations.

#### Storage

Stored in frost free, cool and dry premises. *Storage temperature -0°C to +30°C.* Shelf life 2 years.

### FOLIAR APPLICATION DIRECTIONS FOR USE

Manganese deficiency gives “grey-spot disease” in cereals. The leaves get grey to brown spots on the lower part and often the leaves breaks in the middle, decay and dye. The grain setting will be weak and green shoots develop. Dicotyledonous crops get yellow veins, often with dark spots between the veins.

The symptom of copper deficiency is well known as yellow tip disease. The youngest leaves turn pale in the tip and along the borders, fold and break to a whiplash. Ear formation will be incomplete and grain setting fails. A strong formation of green shoots is usual.

NoroTec™ Manganese/Copper shall be used at an early stage to achieve the best effect or when manganese and copper deficiency occur.

The low rate in the table below is used for prophylactic treatment and the high rate at symptoms of deficiency. The treatment may need to be repeated. The first treatment can be done at the same time as the weed control spray.

Recommended dosage rates and time of application

Crop	Time of treatment	Dosage rate NoroTec™ Manganese/Copper litre per ha	Amount of water litre per ha
Cereals	At of tillering	1,0-1,5	100-200
Potato	1. 2-3 weeks after emergence 2. Before flowering	1,0 1,0	200-300

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### Compatibility

NoroTec™ Manganese/Copper is chelated and is therefore compatible with plant protections, **but not with MCPA and Duplosan Super**. Follow always the instruction on the label for the plant protection product. At hesitation check the compatibility in a small pre mix. Contact your local supplier for more information.

### Preparation and treatment

The sprayer is filled to 2/3 of water and the ingredients are added in the order below. The agitation shall be working all the time.

- Plant Protections according to instructions.
- NoroTec™ Manganes/Copper.
- Add remaining amount of water.

### Caution

Avoid treatment at extreme climatic conditions as high temperature, frost, rain or when frost and rain are predicted. At sunny weather, the treatment shall be done early in the morning or evening. Don't spray plants covered by water droplets or before a rain. The spray solution shall keep a temperature of min. 10°C. The best effect is obtained if there is no rain within at least 2 hours after treatment.

### Cleaning

Sprayer: Clean the spray equipment before and after the treatment. At mixing with plant protections follow the instructions for cleaning of plant protections.

Empty containers: Wash three times. Wash water to be added to the spray solution. Cleaned empty package to be deposited according to local rules.

## SEED APPLICATION DIRECTIONS FOR USE

Advantages with the application;

- All manganese and copper applied will be taken up by the seed & plant.
- Manganese and copper are available, when the growth starts.
- Increased root development and a strong leaf mass is created.
- Ensures a healthy plant that is resistant to diseases.

NoroTec™ Manganese/Copper is applied in a seed treatment machine in a separate dosage system = co-applied with standard seed treatment products like \* Tripod, Tripod Plus, Baytan T, Beret Gold, Chinook, Cruiser 350 FS, Dividend, Hypro Duet, Jockey, Kinto, Latitude, Maxim XL, Maxim100 FS, Raxil Star, Raxil T, Redigo Deter and Rovral.

For other seed treatment products a test shall be conducted prior to commercial treatment to evaluate compatibility.

**GENERAL:** The operator shall clean the atomizing zone/spraying chamber regularly.

Recommended dosage rates

Crop	Dosage rate NoroTec™ Manganese/Copper litre per tonnes seed
Barley	2-3
Oat	2-3
Wheat	2-3