

## Product data sheet

### NoroTec Manganese/Copper



## Field of application

Seed treatment to combat manganese and copper deficiencies in arable crops.

### Contents per litre:

90g manganese, 34g copper, 59g sulphur, 24g nitrogen  
The contents are complex-bound.

### Use

Manganese deficiency gives rise to grey leaf spot disease in cereals. The leaves develop grey or brown spots on their lower halves, after which they often break around the middle, wither and die. Graining gets weaker and green shoots develop. Dicotyledonous plants develop yellow, marbled leaves, often with patterns of dark spots between the leaf veins.

Experience has shown us that sandy soils, high pH, high soil content and cold and wet weather are factors that affect deficiencies. The most sensitive crops are oats, wheat, rapeseed, sugar beet and potatoes. Peas and barley are somewhere in the middle, while rye has a relatively small need for manganese.

Manganese deficiency is normally remedied with foliar fertilisation, for example with NoroTec Manganese.

The yellow tip disease affecting cereals is best known as a symptom of copper deficiency. The youngest leaves fade sharply at the tips and along the edges and roll themselves up and then droop down, looking like whips. Heading thus cannot be completed and graining is impossible. Heavy green shoot formation happens often. Copper deficiency is normally remedied with foliar fertilisation with, for example, NoroTec Copper.

A new method coming to Sweden is applying manganese and copper to the seeds along with preparations against diseases.

Advantages of this method are;

- all the manganese and copper that is applied will benefit the plant.
- manganese and copper are available when growth begins.
- increases root development and creates a strong leaf mass.
- ensures a healthy plant that's resistant to disease.

**Treatment:** NoroTec Manganese/Copper is applied in a seed treatment machine with a separate dosing system at the same time as a standard product \* such as Cedomon, Celest, Ceral, Fungazil, Dividend, and Sibutol FS.

**\* For other seed dressings, a test must be performed before commercial use to determine 'compatibility' and function.**

**General:** The operator must clean the spreader cup/spreader chamber regularly.

Recommended doses

Crop	Dosage litres per tonne of seed
Oats	3
Barley	3
Wheat	3

### Warning

Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Toxic to aquatic organisms, may cause long-term adverse effects in aquatic environments.

Keep out of reach of children. Wear suitable gloves and eye/face protection. This material and its container must be disposed of as hazardous waste. Avoid release into the environment. Refer to special instructions/safety data sheets.

To avoid danger to humans and the environment, follow the usage instructions.

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**Storage** Store in a cool, dry place out of reach of children and animals.

*Storage temperature 0°C to +30°C. Shelf life 2 years.*