

sonar Gluco-Mn

**COMPLEXED ORGANIC
MANGANESE CORRECTOR**



COMPOSITION

	%w/v
Manganese (Mn)	6, 1
pH 6-7	
Density: 1.3	

Natural Chelating Agent (Hepta-Gluconic Acid)



CHARACTERISTICS

SONAR GLUCO Mn is an organic fertilizer. Mn is chelated by gluconic acid, which makes an easier uptake and transport through the plant. This way it keeps or corrects the ideal levels of Mn in the crops.

Manganese supplied to plants in **SONAR GLUCO Mn** is:

Efficiently and quickly taken up by plants from solutions in foliar nutrition.

Safe for plants (according to the recommended doses).

Stable in multicomponent solutions used in foliar treatments.

SONAR GLUCO Mn is essential for:

- Activation of enzymes for the synthesis of chlorophyll
- The assimilation of nitrogen.
- Synthesis of ascorbic acid
- Oxidation reduction reactions in photosynthesis

Manganese deficiency is shown by yellowing of leaves, black spots on the leaf, light green mottling between main veins, loss to quality, eg. Poor skin finish in potatoes.

WHY IS Mn IMPORTANT FOR?

Manganese is used in plants as a major contributor to several biological systems including photosynthesis, respiration and nitrogen assimilation. Manganese is also involved in pollen germination, pollen tube growth, root cell elongation and resistance to root pathogens.

Transport of Mn within the phloem is limited. Therefore any deficiency symptoms will generally be visible first on the younger leaves. Severe deficiency symptoms can lead to interveinal yellowing with brown or grey flecks (grey speck in oats) and the brown discolouration of cotyledons and seeds of legumes.

Delayed maturity is another deficiency symptom in some species. White / Gray spots on leaves of some cereal crops are a sign of Manganese deficiency.

Once applied, either into the soil, hydroponics or foliar, product is readily assimilated by plants, and Mn on it moves free into floem.

DOSES AND APPLICATION

Crop	Aim / problem	Recommendation	Time
In all crops	To provide Mn	1-3 L/ha (with foliar fertilizer in at least 200 L water. Upon application with backpack sprayer 0.5% -1% numerous applications of small amounts increase effectiveness)	When required
Cereals	Yield, N efficiency, photosynthesis rate, winter hardiness	2-3 L/ha (recommendation for winter cereals)	In autumn from the 3 leaf stage
Cereals	Tillering, yield, N efficiency, stability	2-3 L/ha (recommendation for winter cereals)	In spring from the start of vegetation
Cereals	Tillering, yield, N efficiency, stability	2 times, 2-3 L/ha (recommendation for summer cereals)	From 3 leaf stage.
Potatoes	Reduction in susceptibility to scab	2-3 L/ha	From 3 leaf stage.
Potatoes	Skin quality, resilience	1-2 times, 2-3 L/ha	From the beginning of row closure
Legumes (soy included)	Yield, photosynthesis rate, resilience, winter hardiness	1-2 times, 2-3 L/ha	From 6 leaf stage
Oilseed rape	Yield, photosynthesis rate, resilience, winter hardiness	2-3 L/ha	In autumn from the 4 leaf stage.
Oilseed rape	Yield, photosynthesis rate, resilience, winter hardiness	1-2 times, 2-3 L/ha	In spring from the start of vegetation through to the beginning of flowering
Sugar beet	Yield, photosynthesis rate, winter hardiness	3-5 times, 2-3 L/ha	From 6 leaf stage
General vegetables	Improvement on leaf quality, photosynthesis rate, N efficiency	2-3 times, 2-3 L/ha	Once sufficient leaf mass has developed

SONAR GLUCO Mn is compatible with the common plant protection products. Since not all the influences appearing in practice are predicatable, a miscibility test with small amounts of the products provided for th spraying is always useful. In case of mixture with fertilizers or plant protection products fill sprayer up to 2/3 with water and add products separately. Add Gluco Mn as the last component.

! Shake it before use



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