



TRACE ELEMENTS

Essential for an efficient fertilization program



• What

Trace elements are essential plant nutrients and each contributes to a healthy plant growth. Even though the amounts required are small, a deficiency of any trace element can cause important production and quality losses.



• Which

The main trace elements are Boron (B), Copper (Cu), Iron (Fe), Manganese (Mn), Molybdenum (Mo) and Zinc (Zn).



• Deficiency

Deficiencies can be caused by :

- a deficiency of the trace elements in the soil
- a deficiency of available water-soluble trace elements in the soil caused by too high pH levels. In particular Manganese, Zinc and Iron are not available at higher pH-levels.



• Chelates

A chelate is composed of a trace element and a chelating agent. Chelating agents incorporate trace elements into a soluble bound form. The combination of chelating agent-trace element is water soluble and available for the roots. Chelates thus solve the availability problem of trace elements, especially in alkaline soils.

The quality of the chelate depends on :

- strength of binding between the chelating agent and the trace element, especially at high pH-values
- degradability resistance to UV radiation and oxidation

• Our products

Our trusted GROGREEN brand extends from high quality single nutrient chelates to high quality mixtures, covering a broad range of crops and water qualities. GROGREEN chelates are pure solid trace elements and offer the best guarantee for a healthy crop. All trace elements are 100% water-soluble.



Product	Manganese E13	Zinc E15	Copper E15	Iron E13	Iron D11	Ferox 6	Ferral 6
Chelate	EDTA	EDTA	EDTA	EDTA	DTPA	EDDHA	EDDHA
Composition	13 % Mn	15 % Zn	15 % Cu	13 % Fe	11 % Fe	6 % Fe	6 % Fe
pH stability	3 - 10	3 - 10	3 - 10	3 - 6,5	3 - 7,5	3 - 7,5	3 - 12
Recommended for	Manganese deficient crops	Zinc deficient crops	Copper deficient crops	Iron deficient crops pH <6,5	Iron deficient crops Foliar application Substrate culture pH <7,5	Iron deficient crops pH <7,5	Iron deficient crops Iron sensitive crops pH 7,5 to pH 12
Packing	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes



Product	Gromix S	Gromix FDE	Gromix Subtil E	Gromix Subtil D
Chelate	EDTA / DTPA	EDTA / DTPA	EDTA	EDTA / DTPA
Composition	1 % B, 2 % Cu, 4 % Fe - DTPA 1,8 % Mn, 3 % Mo, 0,75 % Zn	1,5 % B, 1 % Cu, 3,7 % Fe - EDTA 2,5 % Fe - DTPA, 2 % Mn, 0,25 % Mo, 2 % Zn	1,3 % B, 0,28 % Cu, 7,5 % Fe - EDTA, 3,3 % Mn, 0,24 % Mo, 1,3 % Zn	1,3 % B, 0,28 % Cu, 6,5 % Fe - DTPA, 3 % Mn, 0,24 % Mo, 1,3 % Zn
pH stability	3 - 7,3	3 - 7,5	3 - 6,3	3 - 7,5
Recommended for	Blend with peat-moss substrates	Foliar application Soil application	Substrate culture pH <6,3	Substrate culture pH <7,5
Packing	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes	1 kg pots 25 kg boxes



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