



KELOA

MICRONUTRIENTS **MIX**



Introduction

MICRONUTRIENTS CHELATES

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KELOMIX are a group of products in which the micronutrients source is bound to an organic ligand in order to improve its availability to plants. These products include natural and synthetic complexes.

The benefit that most producers seek from using micronutrients fertilisers is an increase in income due to increased yield or quality of harvested products. In the most severely deficient soils, the application of micronutrient fertiliser makes an absolute difference between being able to use land productively for agriculture, horticulture or forestry, or not. "(RW, Belletal, 2008)"

Generalised relationship between soil types and properties and micronutrient deficiencies (Alloway et al., 2008d; c)

Soil type/ properties	Deficient micronutrients(s)
Sandy textured and strongly leached soils	B, Cl, Cu, Fe, Mn, Mo, Zn
High soil pH (>7)	B, Cu, Fe, Mn, Zn
High CaCO ₃ content (>15%); calcareous soils	B, Cu, Fe, Mn, Zn
Recently limed soils	B, Cu, Fe, Mn, Zn
High salt content	Cu, Fe, Mn, Zn
High organic matter content (>10% OM)	Cu, Mn, Zn
Acid soils	Cu, Mo, Zn
Heavy clay	Cu, Mn, Zn
Gleys	Zn



Introduction

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Impacts of micronutrients deficiencies on food production and human health

Impacts on crop production

- **Reduces yields.**
- **Poor quality produce, e.g. low oil content, poor fibre quality, deformed fruits.**
- **Decreased N fixation by leguminous crops.**
- **Reduces crop vigour.**
- **Low germination rates.**

Impacts on human health

- **Shorter storage life.**
- **Reduced efficiency of macronutrients.**
- **Impacts on human health**
- **Premature deaths.**
- **Impairment of mental and cognitive development.**
- **Reduces productivity, with higher rates of chronic disease and disability.**

Crop sensitivity/susceptibility to micronutrient deficiency

Cereal						
Barley	L	H-M	H-M	M	L	M
Maize (corn)	M-L	M	M	L	-	H
Oats	L	H	M	H	M-L	L
Rice	L	H	M	M	L	M
Rye	L	L	L	L	-	L
Sorghum	L	M	H	H-M	L	H-M
Wheat	L	H	M-L	H	L	M-L
Fruits						
Apple	H	M	-	H	L	H
Citrus	L	H	H	H	M	H
Grapes	H	M	H	H	L	L
Vegetables						
Beans	L	L	H	H	M	H
Broccoli	H	-	-	M	M	-
Cabbage	H	M	M	M	H-M	-
Carrot	M	H	-	M	L	L
Cauliflower	H	-	-	M	M	-
Lettuce	M	-	-	M	M	-
Pea	L	M-L	M	H	M	L
Potato	L	L	-	H	L	M
Spinach	M	H	H	H	H	H-M
Tomato	H-M	M	H	M	M	H-M
Other crops						
Alfalfa	H	H	M	M-L	M	L
Clover	M	L	-	-	-	M
Cotton	H	M	M	M-L	-	H
Grass	L	L	H	M-L	L	ML
Linseed/flax	M	-	H	L	-	H
Oilseed rape/canola	H	L	-	-	H	M
Soybean	L	L	H	-	H	M
Sugar beet	H	M	H-M	M	M	M
Sunflower	H	H	-	-	-	-

Compiled from various sources: Alloway (2008b; c); Shorrocks (1991b); New Ag International (2003; 2007); IFA (2008); inputs from IFA member companies.

(High; M-medium; L-low, - unknown/no data).

Solids

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KELOM
PREMIUM

Solid. Iron, Mn and Zn EDDHA
(microgranulated).



Iron (Fe) chelated by EDDHA	4,5	%w/w
Manganese (Mn) chelated by EDDHA	1,0	%w/w
Zinc (Zn) chelated by EDDHA	0,5	%w/w
pH (1% water)	7-9	
Solubility	300g/L	



new

IMPORTED FROM SPAIN

KELOM
MIXSOLIDO

Solid. EDDHA + EDTA.
(microgranulated).



Iron EDTA (Fe)	7,5	%w/w
Manganese EDTA (Mn)	3,5	%w/w
Zinc EDTA (Zn)	0,7	%w/w
Copper EDTA (Cu)	0,28	%w/w
Boron (B)	0,65	%w/w
Molybdenum (Mo)	0,3	%w/w
pH (1% water)	4,5	
Solubility	80	g/l



new

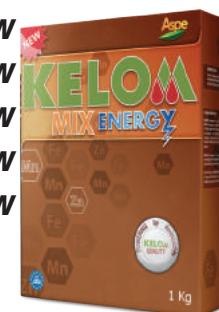
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KELOM
MIX ENERGY

Solid. Iron EDDHA + Mn, Zn
EDTA + Aminoacids
(microgranulated).



Iron (Fe) EDDHA ortho-ortho	3,1	%w/w
Iron total (Fe)	4,5	%w/w
Manganese (Mn) EDTA	1,25	%w/w
Zinc (Zn) EDTA	1,50	%w/w
Free aminoacids	2,0	%w/w
Water solubility	100g/L	
pH (1% water)	8	
Color	Black	



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Liquids

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KELOM
MIXTOTAL

*Liquid. Fe EDDHSA + Mn, Zn,
Cu CITRATE + Mo.*



Iron (Fe) EDDHA	4,5	%w/w
Manganese (Mn) CITRATE	2,5	%w/w
Zinc (Zn) CITRATE	0,5	%w/w
Copper (Cu) CITRATE	0,4	%w/w
Molybdenum (Mo)	0,2	%w/w
Density	1,4	
pH (1% water)	5-5,5	



KELOM
plex

Liquid. Fe, Mn and Zn poliolis.



Iron (Fe) chelated poliolis	2	%w/w
Manganese (Mn) chelated poliolis	2	%w/w
Zinc (Zn) chelated poliolis	2	%w/w
Density (20 C°)	1,24	
pH (1% water)	2	



new

IMPORTED FROM SPAIN

new

IMPORTED FROM SPAIN



