Reg. No. B5497 Act. No. 36 of 1947

ZincNiSel

ZincNiSel™ forms part of our **Bio Innovation**™ range

bio innovation i-range

Description

ZincNiSel™ is a liquid fertilizer containing a high content of plant available zinc (Zn), nickel (Ni) and selenium (Se).

Key Benefits

- High content of plant available nutrients.
- Contains no chemical chelates.
- Can be applied both foliar as well as to the soil. Ions are not stable at high pH ranges.

Composition

Element	Content (g/kg)	Content (g/L)
Zinc (Zn)	127	177
Nickel (Ni)	0.190	0.264
Selenium (Se)	0.0135	0.019

SG = 1.39

Key function of elements

- **Zn** is a component of more than 300 enzymes and proteins in crops.
- **Zn** has a key function in the formation of growth hormones such as auxins.
- **Ni** is a component of the urease enzyme and is therefore beneficial in N-metabolism.
- **Ni** plays an important role in the function of 9 enzymes including superoxide dismutase (SOD) that protect crops against free radicles.
- **Ni** and **Se** is both beneficial for crop development and yield.
- **Se** is involved in the function of several proteins and optimizes respiration.

Application Rates

Crop	Dosage
Row crops	Foliar spray 0.5 L/ha Via irrigation system 1-2 L/ha (Recommended to use with AnnGro™)
Vegetable crops	Foliar spray 0.5 L/ha Via irrigation system 1-2 L/ha (Recommended to use with AnnGro™)
Fruit Tree crops	**Young trees:** Foliar spray 100-150 ml/100 L water (min 500 L water/ha) **Older trees:** Foliar spray 100-150 ml/100 L water (min 1000 L water/ha) (Recommended to use with AnnGro™)

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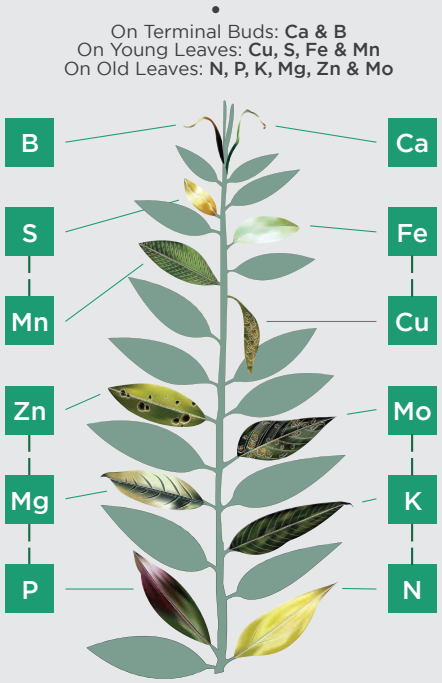
Average concentration in plant tissue & General deficiency symptoms

mg/kg in dry leaf mass	Element	Deficiency symptoms
15000	N	Yellowing of older leaves & stunted growth
2000	P	Dark green/purple older leaves & stunted growth
10000	K	Yellowing & necrosis of leaf margins for older leaves
5000	Ca	Deformed young leaves & desiccation of growing points
2000	Mg	Interveinal chlorosis of older leaves
1000	S	Yellowing of younger leaves & stunted growth
100	Fe	Interveinal yellowing of younger leaves
20	Zn	Interveinal yellowing and rosettes of young leaves, necrotic spots and twigs die back
50	Mn	Interveinal yellowing of younger leaves with necrotic spots
6	Cu	Yellowing and curling of leaf blades with white tips, die back of shoots
20	B	Thick textured leaves & affect flowering and seed filling.
0,1	Mo	Yellow, wilted and rolled-up leaves with burned margins
0,1	Ni	Small curled older leaves with necrotic tips

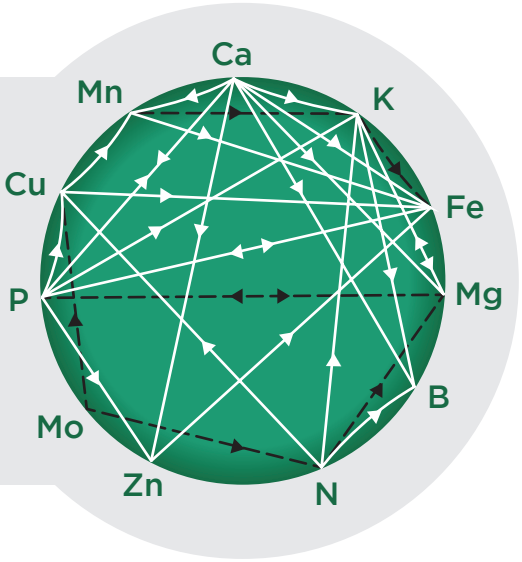


Interactions between nutrients that reduces availability

Macro-elements	Micro-elements
Zn - P	Zn - Fe
Zn - N	Mn - Fe
Fe - P	Mo - Fe
Cu - P	Cu - Fe
Mo - S	Cu - Mo
Zn - Mg	Cu - Zn
B - Ca	

ANTOGONISM
Decreased availability of a nutrient to a plant due to the action of another nutrient

STIMULATION
High level of a nutrient increases the demand by the plant for another nutrient



Effect of pH on nutrient availability