



Reg. No. B5663 Act. No. 36 of 1947

Ironman

Ironman™ forms part of our Bio Innovation™ range



Description

Ironman™ is a liquid fertilizer containing a high content of plant available iron (Fe). The product contains no chemical chelate.

Key Benefits

- A stable Fe-complex is formed during the manufacturing process keeping the Fe available for uptake.
- Contains no chemical chelate.
- Can be applied both foliar as well as to the soil, although the Fe is not stable at a high pH.

Composition

Element	Content (g/kg)	Content (g/L)
Iron (Fe)	72	86

SG = 1.2

Key functions of Fe

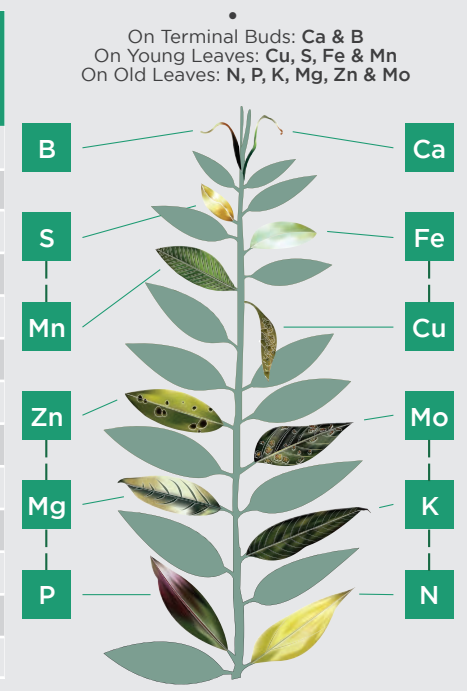
- Involved in cell division and therefore important for crop growth.
- Cofactor for enzymes/proteins involved in photosynthesis and respiration.
- Necessary for maintaining chloroplast functions.

Application Rates

Crop	Dosage
Row crops	Foliar spray 200-750 ml/100 L water Via irrigation system 5-25 L/ha. <i>(Minimum dilution rate 1 L Ironman:250 L water)</i>
Vegetable crops	Foliar spray 200-750 ml/100 L water. Via irrigation system 5-25 L/ha. <i>(Minimum dilution rate 1 L Ironman:200 L water)</i>
Fruit Tree crops	Foliar spray 200-750 ml/100 L water <i>(maximum 10 L/ha)</i> Via irrigation system 15-25 L/ha <i>(Minimum dilution rate 1 L Ironman:250 L water)</i>

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	Interveneal chlorosis of older leaves
1000	S	Yellowing of younger leaves & stunted growth
100	Fe	Interveneal yellowing of younger leaves
20	Zn	Interveneal yellowing and rosettes of young leaves, necrotic spots and twigs die back
50	Mn	Interveneal 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

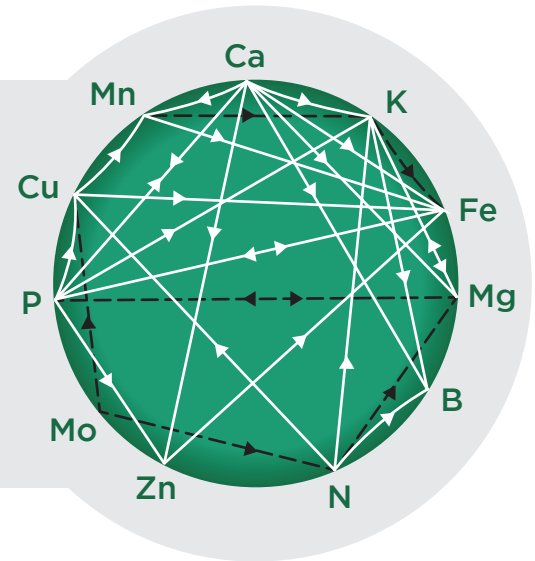


Interactions between nutrients that reduces availability

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	

ANTAGONISM →
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

