



NEW

micronutri **Fe**

Iron fertilisers based on
phosphate knowledge



PRAYON



micronutri Fe

0 - 42 - 48 + 2.8% Fe

Iron (Fe) is an essential element for plant development. Since the 1960s, the only way to ensure iron uptake has been through using chelates. **Prayon has now developed a brand-new fertiliser that efficiently brings together iron and phosphates to guarantee sufficient iron uptake: Hortipray® micronutri Fe.**

The new fertiliser has the following main benefits:

- **full iron content** made available to the plant;
- **pure fertiliser** which only contains nutrients;
- a **water-soluble** and completely **biodegradable** product;
- **low sodium** content;
- **easy to dose** via a separate 'C tank'.

Successful trials

Various trials conducted in close collaboration with Wageningen University (NL) to test Hortipray® micronutri Fe in soilless cultures saw the new fertiliser performing well in comparison with other standard iron products such as DTPA.

Previously, iron precipitated in soilless cultures when no chelates were added, making it unavailable to the plant and resulting in chlorosis (yellowing). With Hortipray® micronutri Fe this is no longer the case: all the iron is directly delivered to the plant without using chelates.

It is well known that to ensure the best possible availability of nutrients, it is advisable to maintain the pH range at around 5.8 in the root zone. In standard practice and in our trials, the

pH can fluctuate between 5 and 8. Under these conditions, Hortipray® micronutri Fe performed well in comparison with standard DTPA. However, **a pH higher than 6.5 should be avoided for all nutrients.**

In the trials, other advantages relating to calcium and tipburn were observed with Hortipray® micronutri Fe vis-à-vis standard iron products. These effects are being investigated further.

Hortipray® micronutri Fe produced excellent results both in laboratory and greenhouse trials on cucumbers. Further trials are currently in progress on a number of other crops such as tomatoes and strawberries.



A pure and biodegradable product

Hortipray® micronutri Fe is a very pure fertiliser that is completely biodegradable and fully water-soluble. Like the rest of the range of water-soluble fertilisers, it also contains only a low level of sodium.

As well as iron (Fe), Hortipray® micronutri Fe provides plants with essential nutrients such as phosphate (P) and potassium (K). The formula is **0 – 42 – 48 + 2.8% Fe**.

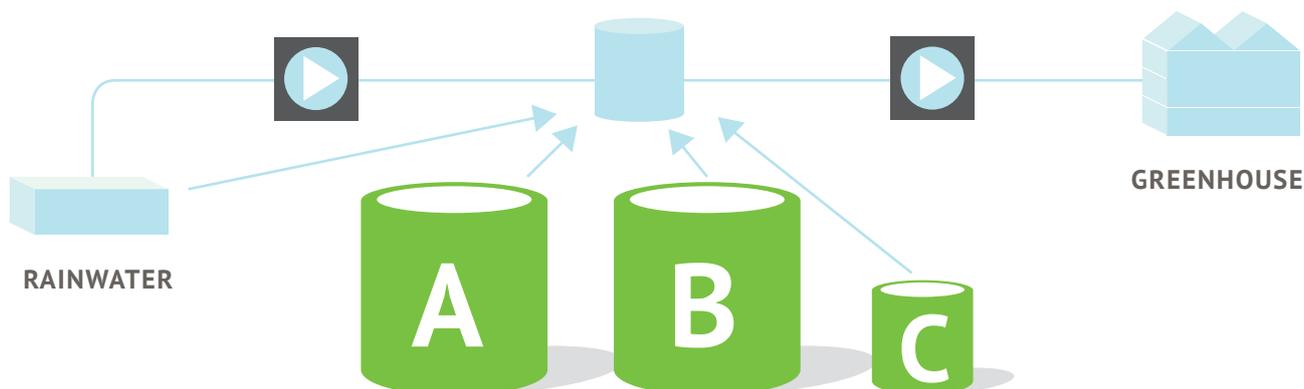
Best to be used in a separate 'C tank'

In current practice, a significant volume of iron can be lost due to an inappropriate pH in the tanks as a result of chelated iron being mixed in a tank (A or B). As a consequence, the chelate molecule is broken down or the iron is released from the chelate before it is dosed into the irrigation system. As such, Fe never reaches the plants, so leading to iron deficiency (which can be seen in the yellowing of the plants).

Prayon recommends using Hortipray® micronutri Fe in a separate tank (which we refer to as the 'C tank') with an agitator to enhance the efficiency of the product.

On average, the size of the C tank will be much smaller than the standard A and B tanks, which are monitored as standard equipment. The A, B and C tanks will be emptied at the same time by the irrigation facility.

At this stage, only Hortipray® micronutri Fe will be dosed into the C tank but Prayon is currently developing other products that can be used in this tank with Hortipray® micronutri Fe.



Hortipray® micronutri Fe is a powdered product. Once dissolved in the C tank, it will maintain the appropriate pH in the tank (in other words, it will keep the pH at

around 9), and therefore no adjustments to the pH will be needed in the tank.

Phosphates and potassium

When preparing the formulation of fertiliser as a whole, both the iron content and the phosphate and potassium content have to be taken into account. Therefore, software provided by Prayon will be available through the website (www.prayon.com) to review the formulation of your fertiliser. Your advisor can also make an on-the-spot calculation of the final formulation.



Specifications



	mol	w/w %
Fe	500 mmol/kg	2,8
P	5,87 mol/kg	
K	10,15 mol/kg	
OH-	4,28 mol/kg	
P ₂ O ₅		42
K ₂ O		48
Solubility	400 g/L water (20 ° C)	

Reconversion table

100,000 L of diluted solution with [Fe] (µmol/L)	10	15	20	25	30	40	50
When MKP 0-52-34 (monopotassium phosphate) is used							
Add micronutri Fe to tank C (kg) +++	2,0	3,0	4,0	5,0	6,0	8,0	10,0
Add HNO ₃ 38% (L) +++	1,1	1,7	2,3	2,9	3,4	4,6	5,7
Remove MKP (kg) ---	1,6	2,4	3,2	4,0	4,8	6,4	8,0
Remove KNO ₃ 13-0-46 (kg) ---	0,9	1,3	1,7	2,2	2,6	3,5	4,3
When Pbooster 0-48-47 is used							
Add micronutri Fe to tank C (kg) +++	2,0	3,0	4,0	5,0	6,0	8,0	10,0
Add HNO ₃ 38% (kg) +++	0,4	0,6	0,8	1,0	1,2	1,6	2,1
Remove Pbooster (kg) ---	1,7	2,6	3,5	4,3	5,2	7,0	8,7
Remove KNO ₃ 13-0-46 (kg) ---	0,3	0,5	0,6	0,8	0,9	1,2	1,5
When H₃PO₄ 59% (phosphoric acid) is used with solid fertilisers							
Add micronutri Fe to tank C (kg) +++	2,0	3,0	4,0	5,0	6,0	8,0	10,0
Add HNO ₃ 38% (L) +++	2,7	4,1	5,4	6,8	8,2	10,9	13,6
Remove H ₃ PO ₄ 59% (L) ---	1,4	2,1	2,7	3,4	4,1	5,5	6,9
Remove KNO ₃ 13-0-46 (kg) ---	2,1	3,1	4,1	5,1	6,2	8,2	10,3
When H₃PO₄ 59% (phosphoric acid) is used with liquid fertilisers							
Add micronutri Fe to tank C (kg) +++	2,0	3,0	4,0	5,0	6,0	8,0	10,0
Remove H ₃ PO ₄ 59% (L) ---	1,4	2,1	2,7	3,4	4,1	5,5	6,9
Remove KOH 50% (L) ---	1,5	2,3	3,1	3,8	4,6	6,1	7,6



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