



Dissolvine[®] Q40

Dissolvine[®] Q40 is a microgranular iron chelate and is developed for the correction and prevention of iron deficiency in a wide range of agricultural and horticultural crops, particularly in alkaline and calcareous soils. **Dissolvine[®] Q40** gives best effect when applied dissolved to the plants through the soil or rooting media.

Dissolvine[®] Q40-contains 60 grams of iron per kg of product chelated as **Fe-EDDHA** derived from ethylenediamine-N,N'-bis(2-hydroxyphenylacetic acid).

Crops and Soils Susceptible to Iron Deficiency

Horticultural crops, particularly perennials, and fruit crops are most commonly susceptible to iron deficiency. This is of commercial importance in fruit trees like apple, pear, apricot, cherry, plum, lemon, orange, lime and mandarin; in berries like strawberry and grape, and in vegetables like tomato, cucumber and bean. Other crops susceptible to iron deficiency include roses, ornamentals and arable crops such as cotton, cereals and soybean. Iron has to be applied to most high productive crops under arid and semi-arid conditions and always in green houses and soilless media for productive and economic growth.

Soils susceptible to iron deficiency are primarily alkaline and calcareous. These soils may be rich in iron but the most of it is not available to the plants. Other soils poor in iron and where iron deficiencies might occur are highly leached soils and soils in areas with a low level of iron in the mother material.

Effects and Symptoms of Iron Deficiency

Iron deficiency starts with interveinal yellowing. The deficiencies of Fe and Mg (magnesium) are somewhat similar as both are characterized by a failure in chlorophyll production. Iron deficiency, however, unlike Mg deficiency always begins to show in the younger leaves. Mn (manganese) deficiency, on the other hand, demonstrates a more spotted appearance of yellow/white spots against the green leaf color.

These are the Most Frequent Symptoms of Iron (Fe) Deficiency:

- ☼ Chlorosis, yellowish spots on leaves, spreading until the leaf becomes almost white.
- ☼ Premature leaf fall.
- ☼ Reduced production of new fruit bearing branches.
- ☼ Small, woody textured, flavorless fruit.
- ☼ Die back of new growth.
- ☼ Stunting.

Directions for Use

Dissolvine[®] Q40 is meant for application to the soil, as a solution in water.

Dissolvine[®] Q40 is photodegradable: it has to be mixed with the soil during or immediately after application.

Application of the Product

The product can be applied by drenching, soil injection or drip-irrigation and is also used in hydroponics. The preferred moment of application is just after regrowth. It is advised to split high dose rates into two applications (for fruit trees: one application after regrowth and one just after flowering). This also counts for areas with high levels of rainfall. **Dissolvine[®] Q40** can also be applied when deficiency symptoms occur during the growing period. Irrigate if necessary to bring the product in the active root zone.

A. Drenching

Prepare a groove of a 15-20 cm depth, in the drip zone underneath the tree or on each side of the plantation line. Apply the dissolved **Dissolvine[®] Q40** to the groove. Close the groove immediately afterwards. May be made by either drenching around a single tree or by drenching a whole plot of trees at the same time.

B. Soil Injection

Dissolvine[®] Q40 can also be applied with a spear injector or a coulter injector. Injections should be made one meter apart around the tree. Assure sufficient water supply for good absorption.

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C. Drip-irrigation

Because of its excellent solubility, **Dissolvine® Q40** can be applied by drip-irrigation. Feed the plant with the calculated dosage for 10-15 days in the dripping water. Repeat the application periodically for best result. Concentrations above 0.5% is to be avoided when applying. Continuous feeding is also possible. The end solution should contain 15 to 40 g of **Dissolvine® Q40** / 1000 liter. Prepare the solution for one or maximum two weeks use and keep it in complete darkness. Do not use acids in the same tank, the pH of the solution should be above 3.5.

D. Hydroponics

The pH in hydroponic systems can easily rise upto 7 and higher especially during strong growth periods. Also when the water used contains very high levels of zinc replacement of ¼ - ½ of the applied Fe-DTPA by **Dissolvine® Q40** is recommended.

Behavior in the soil

Good stability: the behavior of **Dissolvine® Q40** is independent of the type of soil and its pH. **Dissolvine® Q40** performs even in very alkaline soils (pH ≤ 10).

Quick recovery: the easy absorption by the roots results in a quick recovery of the crop.

High efficiency: total recovery of the plants that suffered from iron chlorosis.

Lasting action: at the recommended dose rates the results will last throughout the season

Compatibility

The product can be mixed with most other fertilizers and agrochemical products without inactivation, precipitation or scorching problems. In liquid fertilizers it is though recommend the mixture to be used without delay if not ion exchange is to occur with reduced effect of the nutrients.

Mixing

Mix 1 kg **Dissolvine® Q40** in 20 liters of water. Stir gently until completely dissolved. Pour the solution into a tank and add the required amount of water. Ensure that the entire product has been well dissolved to avoid blocked nozzles.

Packing

The product is packed 1, 10, 25 kg net in cardboard boxes with an inside polyethylene bag. Shelf life of the product is greater than 3 years.

Precautions

- √ Store in original box, keep tightly closed and store in cool dry place.
- √ Store away from children, pets, livestock and foodstuff.
- √ Wear gloves and wash hands after application and before meals.

No health hazards are involved in normal handling of **Dissolvine® Q40** but it is advisable to follow the above precautions.

Dose Rates

As a guide the recommended rate should be judged according to the age of the plant. A fully mature tree should be treated with a higher rate and a juvenile tree ought to receive a lower. Rates are also to be modified after intensity of symptoms from previous years, the deficiency degree of the crop at application time and application method.

Always adapt to the crop and cultivar involved and to the local circumstances.

Arable Crops and Open Field Horticultural Crops

<u>Soil application, arable crops</u>	5-10 kg/ha	Apply pre-drilling or pre-planting to bare soil in a convenient volume of water, cultivate after spraying.
<u>Soil application, horticultural crops</u>	15-40 kg/ha	Apply through the watering system. Use enough water to wet the top 10 cm of the soil.
Citrus (Lemon), Avocado	50-200 g/tree	Use clean water immediately afterwards to wash the iron chelate from the foliage.
Citrus (Orange), Peach	50-100 g/tree	
Apple, Pear	40-75 g/tree	
Normal vine	5-10 g/plant	
High vine	10-25 g/plant	
Nurseries	40-50 kg/ha	
Strawberries	30-50 kg/ha	
Vegetables	30-70 kg/ha	

1 kg/ha = 0.9 lbs/acre

1 g/l = 0.13 oz/gal

Main characteristics

- Solubility in water: 60 g/l (20 °C, for practical use)
- EC (1 g/l): 0.70 mS/cm

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