Information

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CALCIUM SPRAYS

Background

Mineral nutrients such as potassium are transported readily in the phloem. Deficiencies are usually prevented by redistributing the element within a local area of the plant. However, calcium does not move well through the phloem and is thought to be entirely transported via the xylem instead.

The xylem carries the transpiration stream and is normally acropetal (root to shoot). Mature leaves seem to transpire the most and will accumulate high levels of calcium because of this process, leaving young growth missing out on this essential macro-element. Calcium is regarded as non-mobile and once deposited in the mature transpiring tissue it is trapped and unable to move to other parts of the shoot or to the rest of the plant.

Calcium is required for the development of the root system and growing points. It is also a key constituent of cell walls. Most calcium is available at pH 6.0-8.0 and can therefore be deficient in soils or composts with a low pH. Levels are required in excess of 1,000ppm.

Deficiency symptoms

Leaves become distorted with their tips hooked back and their margins curled. These margins may also exhibit brown scorching or spotting and often total collapse of the mesophyll tissue. Growing points die and roots are poorly developed and weak.

Example: flower bulbs

In bulbs, there is only really enough calcium to meet the needs of the lower leaves. Scorch is therefore more likely to occur during periods of major growth because the bulb cannot supply enough of this element to meet the demand of the leaves.

Calcium sprays

Calcium is used by some growers to try and harden up plant leaves to avoid scorch during the summer and winter months. The results can be variable depending on the crop, its location, the weather and the time of year the product is applied. An analysis of the compost to establish nutrient levels is recommended. If leaves have been scorched, a comparison between nutrient levels in the scorched and unscorched leaves may give a better idea of what is actually happening in the plant at a cellular level.

It has been found that using ammonium nitrate increases the competition between the ammonium part of the nitrogen and the calcium for uptake within the plant. Nitrate nitrogen does not compete with calcium in this way.

A higher concentration of potassium and magnesium in the compost may also contribute to calcium deficiencies.

There are several companies in the UK who can supply calcium-based foliar feeds including:

1. Solufeeds Ltd
Highground Orchards, Highground Lane, Barnham, Nr. Bognor Regis, West Sussex PO22 0BT.
T: 01243 554090 F: 01243 554568 W: www.solufeeds.com

This company produce a product called Solufeed Panda. It is a specially formulated calcium spray based on calcium nitrate with boron, magnesium and zinc. It is a foliar spray containing surfactants to keep the product on the leaf surface for longer and allow the plant to maximise uptake. The recommended application rate is 5 litres per hectare.

2. Hortifeeds
Park Farm, Kettlethorpe, Lincoln LN1 2LD.
T: 01522 704404 F: 01522 704748 W: www.hortifeeds.co.uk

The products available are either Horti-Chel Calcium liquid or Horti-Chel Calcium + Boron. The liquid based on calcium has 6% nitrate nitrogen to assist in the uptake of the calcium. Maintenance of calcium levels as required has a recommended rate of 3.0 to 6.0 litres in 1,000 litres of water. For crops under protection, apply at a rate of 2.5 to 4.0ml/litre of water. For sensitive crops liable to scorch, the company recommends using the lower rate.

For further detailed information on all of the products, please contact them direct.