

Stump out calcium deficiencies

STUDIES ACROSS THE WORLD prove that Albion's patented Metalosate Calcium is the most effective way to increase calcium concentrations inside fruit and meristematic tissues, without any phytotoxic side effects.

An increased interest in the use of calcium foliar sprays has been noted and the reason for it is the effect calcium has on fruit quality and shelf life.

Why calcium is essential

Calcium is a divalent cation that is extremely important in maintaining the strength of stems and stalks of plants. It functions in plant cell elongation and division, structure and permeability of cell membranes, nitrogen metabolism and carbohydrate translocation. The mineral also regulates the absorption of nutrients across plasma cell membranes, is non-toxic even in high concentrations and serves as a detoxifying agent by tying up toxic compounds and maintaining the cation-anion balance in the vacuole. It is also one of the most significant factors of firmness and storage life of fruit, as calcium is part of the cell wall and acts as the cement that binds the cell walls together.

Calcium deficiency symptoms

Several factors can cause inadequate calcium in fruit and vegetables, even if the soil and weather conditions seem perfect. The application of nitrogen fertilisers can cause a deficiency. Nitrogen is translocated through the plant approximately 20 times faster than calcium, the slowest moving element in the plant. When unnatural amounts of nitrogen is frequently applied to maintain yields, it can cause plants to grow faster than the calcium can translocate, which then induce calcium deficiencies in growing points and fruit.

A second reason for a calcium deficiency is calcium passively moving through the xylem (water conducting tissue), a movement that is triggered by transpiration. Leaves have a much higher rate of transpiration than fruit, which means that the calcium concentration in fruit will be lower than in the leaves. Leaf calcium concentrations and -appearance is usually a poor indication of a calcium deficiency in fruit. There can



Metalosate Calcium prevents deficiencies that may limit crop growth and yields.

be an adequate or even high concentration of calcium in leaf tissue analyses, while calcium deficiencies still result in fruit.

A solution that works

Metalosate Calcium is the only effective and economic product on the market that brings results without a risk of phytotoxicity. Albion has created a patented method for calcium to move in the phloem of plants and also continue with the same speed as nitrogen.

Each calcium ion in Metalosate Calcium is bonded to two amino acids, creating the Metalosate Calcium molecule. The plant recognises the molecule as a proteinaceous molecule and allows it to travel in the phloem, instead of forcing it to use the xylem route. When in Metalosate form, calcium is allowed to be a mobile element, while Metalosate Calcium will also move to the areas where the greatest need of photosynthates in the plant exists, such as the meristematic tissues and fruit. Tests have shown that 50% of the calcium in Metalosate Calcium will be translocated and moving in the plant within two hours after application.

With thanks to Albion Advanced Nutrition for the use of the editorial Metalosate Calcium (Reg. No. B4261/Act 36 of 1947) Active Ingredients: Ca 60 g/kg, 71 g/l. <<

'n Biologiese benadering tot swartvlekbeheer

>>> van bladsy 13

dat die *Trichoderma* goed kan vestig. Vanaf einde September moet weeklikse bespuitings van *Trichoderma* ook bogronds op die vrugte gedoen word.

Baie navorsing is die afgelope dekade ook op die metaboliëte gedoen wat deur die *Trichoderma*-swamme vrygestel word. Hierdie metaboliëte is in staat om plante se weerstandsmeganismes te aktiveer en op hierdie wyse ook tot siektebeheer by te dra. Afwisselende bogrondse toediening van

Trichoderma en die metaboliëte is dus nodig vir effektiewe biologiese beheer van swartvlek.

- Die enigste kommersiële gewas waar *Trichoderma* groot verliese kan veroorsaak, is by sampioenboerderye.

Vir navrae, kontak Dr Strauss Ferreira by 021 851 2403 of 082 338 5561, of e-pos strauss@agroorganics.co.za. <<