

AVOCADO GROWERS TECH NOTE

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JP EXPORTS

Calcium to Hass Avocado Fruit - Now or never

Calcium has long been implicated in improving storage of fruit with the generalisation that the higher the calcium content of the fruit, the better the storage. It is not, however, quite that simple as ratios with other nutrients, like N, are more important than just the level of calcium alone (Arpaia, et al., 2004).

How do we increase the calcium content of Hass avocado fruit?

Avocados, like many crops including kiwifruit, take up most of their fruit calcium in the **early** stages of fruit growth as illustrated in the graph below.

Californian research data producing the below graph shows that virtually all calcium is in the fruit at the **beginning of winter**.

Calcium flow to the fruit is mainly via the xylem transpiration stream, and, it is **not remobilised** within the plant after initial allocation to a site.

Foliar applications of calcium products to avocado fruit have shown to be of limited value.

The **first 2 months following fruit set** appear critical if we are going to have any influence on calcium accumulation. Rapid cell division in early fruit growth is thought to provide a strong sink for calcium.

Calcium has another advantage; in the soil solution it aids in Phytophthora control by a variety of mechanisms, which is important with heavy flowering and wet winters. Calcium can also suppress potassium and magnesium uptake, so monitor nutrient levels with leaf and soil testing.

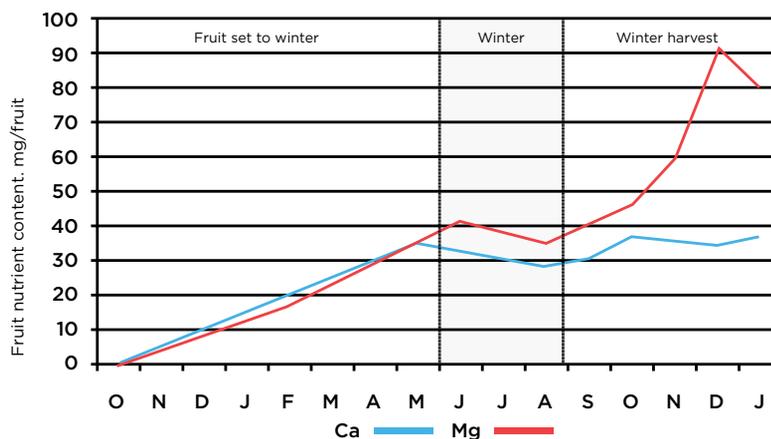
Increasing calcium uptake to fruit is more difficult than most nutrients, but the best opportunity for uptake is by:

- **Increasing available soil calcium**
- **Having a healthy active root system for uptake (Phytophthora control is vital)**
- **Applying water if necessary.**

Apply 200kg/ha gypsum (CaSO₄) after flowering. Only apply when fruit is dry to avoid residues.

(the dust during flowering will have a major negative impact on pollination)

It is believed that anything that increases the transpiration flow in the first 2 months following fruit set will lead to higher calcium levels in fruit, hence, hot dry conditions are favoured.



Calcium (Ca) and Magnesium (Mg) accumulation in Hass avocado fruit from bloom to harvest, California (amended to NZ season). Patterns of nutrient accumulation in 'Hass' avocado fruit, Rosecrance, Faber, Lovatt, Better Crops Vol. 96 (2012, No. 1)

