ENGAGE
The Power of Nutrition

Bio-Chel Ca

Bio-Chel Ca is a multi-function calcium chelate, providing growers and farmers with a source of fully available calcium for both root and foliar application.

Bio-Chel Ca is the strongest calcium chelate in the world with 22% calcium in the chelate powder and 10% calcium in the liquid.

A major benefit of Bio-Chel Ca is its purity. All other calcium nutrients have another salt attached such as nitrate, sulphate, phosphate, chloride or other, which the plant must deal with.

Being fully chelated ensures Bio-Chel Ca's availability over a wide range of pH's (4-9). This compares to other calciums which are only available at 6.5-8.5pH.

For leaf application Bio-Chel Ca provides a source of available calcium which unhindered by anions salts and due to its organic make up, stimulates leaves and roots to accept higher rates of calcium.

CROPS

- Brassicas
- Potatoes
- Legumes
- Top Fruit
- Vine Crops
- Soft Fruit
- Leafy Salads
- Root Crops
- Fruiting Vegetables
- Stone Fruit
- Citrus
- Ornamentals

Two available versions

Soluble Powder	Calcium w/w (22% CaO)
Liquid	Calcium Ca w/v (10% CaO)

Usage

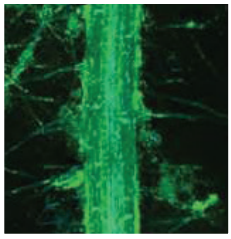
- In all irrigation types and water sources to replace Calcium Nitrate and Calcium Chloride.
- As a foliar calcium that is highly efficacious and can be used at any stage of growth.
- As a source of calcium for hydroponic substrates such as Coir and Rockwool for use in crops such as tomato, pepper, cucumber and strawberry.
- As a chelating agent for rootzone available nutrients.
- In conjunction with Bacillus Subtilis or with compost tea's to increase colonisation.

Bio-Chel Ca in the Rootzone

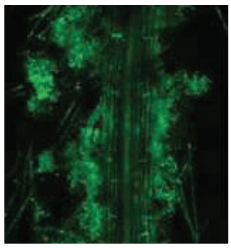
In the rhizosphere, or root zone of a plant, complex interactions are constantly occurring between plant roots and soil microbes.

The microbes live in the soil and gain needed energy sources from plants while aiding in nutrient transfer to the plants and creating an environment more conducive to good root growth.

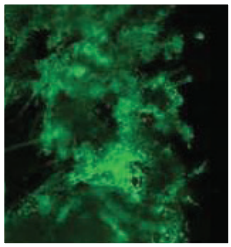
Level of Bacillus colonisation under the support of Bio-Chel Ca



Control



100 ug ml -1 Bio-Chel Ca



200 ug ml -1 Bio –Chel Ca

The addition of Bio-Chel Ca to a standard fertiliser programme will support the micro-organism population of six different functional groups. These groups include the beneficial bacteria (Bacillus Subtilis). The three pictures (below left) illustrate the level of colonisation on roots under the support of Bio-Chel Ca.

Benefits

- In irrigation systems Bio-Chel Ca may be used to bridge the calcium gap associated with nitrogen in fruit growing. The powder form is highly soluble (600g per litre) and available so works well within a two tank feed system
- As foliar calcium, Bio-Chel Ca will provide a calcium source which will penetrate the leaf at a much higher level due to the organic compounds and provides an anion free calcium which is unhindered in acceptance by plants.
- The level of soluble lignin in Bio-Chel Ca allows the product to bind plant growth promoting rhizobacteria to roots. This binding encourages the auxin response for enhanced growth.
- The natural chelating effects of Bio-Chel Ca will, with continued use, transfer a level of chelation to nutrients present in the rootzone, thereby creating greater availability to the growing crop and reduce antagonistic relationships between nutrients.
- Bio-Chel Ca contains natural surface-active polymers. This ensures even calcium distribution over the leaf surface without the need for additional adjuvants.
- Bio-Chel Ca remains hygroscopic after application. This holds the calcium in a water-soluble form on the leaf so that it can diffuse and penetrate the leaf even after the spray application has dried.

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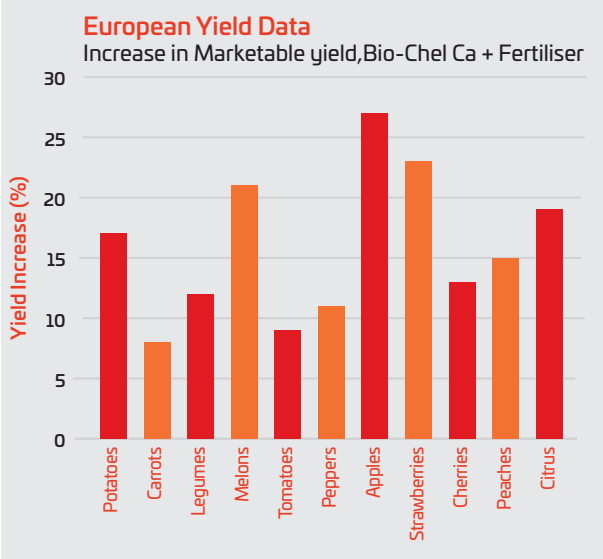
Increased Yields

Trials across many crops illustrate that Bio-Chel Ca is not only a source of calcium but will, due to the benefits listed, aid crop yield when used regularly. The graph below shows European yield data.



Compatibility

Bio-Chel Ca is non-reactive. The chelation in Bio-Chel Ca is strong which prevents the calcium from actively reacting with other elements and salts.

This sets Bio-Chel Ca apart from all other calcium fertilisers as it will sit in any spray tank without fear of reaction. It can be mixed with sulphate and phosphate/phosphite fertilisers and all known pesticides which maximises its flexibility in use.

Crop Timings and Application Rates

	Liquid	Powder
Drip irrigations for substrate grown crops	Use 10-20 litres/ha per week from planting through to end of harvest for fruiting and flowering crops and every 2-3 weeks for vegetable crops with a higher calcium demand. Apply at normal injection rates. Bio-Chel Ca levels can be adjusted to suit individual crop requirements.	Use 5-10 kgs/ha per week from planting through to end of harvest for fruiting and flowering crops and every 2-3 weeks for vegetable crops with a higher calcium demand. Apply at normal injection rates. Bio-Chel Ca levels can be adjusted to suit individual crop requirements.
Soil application	Use 20 litres/ha as a base dressing at planting to promote nutrient absorption and reapply during periods of calcium requirement. Apply in 400-800 litres of water.	Use 10-20 kgs/ha as a base dressing at planting to promote nutrient absorption and reapply during periods of calcium requirement. Apply in 400-800 litres of water.
Foliar application	Apply at 2-5 litres/ha as a source of supplementary calcium. Use as required. Apply in 400-600 litres/ha for optimum results.	Apply at 1-3 kgs/ha as a source of supplementary calcium. Use as required. Apply in 400-600 litres/ha for optimum results.

For more detailed application rates per crop please visit engagecropsolutions.com or speak to an Engage advisor.

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