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# Greenfert

## CAL-O



**Greenfert CAL-O - the calcium OXIDE based calcium leaf fertilizer for fruit, Vegetable and viticulture**

### Nutrients and their functions:

Calcium (Ca) Calcium uptake and transport Calcium is absorbed into the plant via the root tips. Calcium is transported into the plant via the protoplasm of the xylem of young shoots and leaves; barriers ensure a controlled transport. The transpiration all pull prioritizes the supply of calcium to young leaves, which puts the leaves in direct competition with the fruit. During periods of rapid growth there can be a hormonally induced displacement of calcium from the fruit into the tips of the shoots. The reverse path, however, is not yet known. Calcium in the fruit One of the principal functions of calcium in the plant cell is to stabilize and thereby ensure the function of the cell membranes.

Typical symptoms of a lack of Calcium are therefore degenerative cell alterations such as, for example, bitter pit, discoloration of skin and flesh, water core and lenticel spotting. The young fruits are supplied with calcium via the nutrient stream until they are the size of walnuts. The calcium concentration is then diluted by the growth of the fruit.

The purpose of a quality assurance

### Greenfert CAL-0

**Composition :-** 40.5 % Calcium Oxide

**Packing:-** 500 gm , 1 kg , 25 kg

**Dosage :-** **Spray :-** 1 gm per litre

**Fertigation :-** 2 kg per acre

**Derived from :-** Calcium Carbonate

Free from sulfate, Nitrate, Chloride and Sodium

fertilization with calcium is to supply the young fruit with calcium so intensively that there is a sufficient concentration to ensure quality even in the ripe fruit. Calcium leaf fertilization and leaf fertilizers There is no correlation between the calcium concentrations in the leaf and in the fruit. For the apple tree, the Calcium concentration in the fruit is important only during growth of the fruit, i.e. only until the fruit is approximately the size of a walnut, when the transition occurs from the phase of intensive cell division into the phase of cell expansion.

Cell stability in the fruit is necessary thereafter only until the fruit ripens. The calcium taken up through the roots is required during later vegetation for the growth of leaves and shoots or has already been transported and stored into the future blossom buds for the next year. Leaf fertilization is therefore the method of choice to directly supply the young



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## CALCIUM OXIDE 40.5%

fruits, which are the target organs, with the quantity of calcium they need. Leaf fertilizers currently in use for that purpose are primarily formulated on the basis of calcium nitrate or calcium chloride.

Formulations are more effective than mineral calcium fertilizers and their lower, more readily available quantity of the active leads to increased compatibility. One disadvantage with the formulations in current use, however, is that they are mostly based on amino peptides that contain nitrogen and therefore contribute undesirable additional nitrate. The calcium concentrations are lower although the costs are higher than for the use of non-formulated calcium chloride or calcium nitrate. Calcium chloride, a very hygroscopic salt, is absorbed very well by leaves and fruit. On account of the high ion concentration on the surface, however, physiological damage is possible, as well as growth depression as a result of the withdrawal of water which is necessary for the liquefaction of the salt.

Calcium nitrate is less hygroscopic and therefore more protective of the leaves and fruit, although it is not taken up as efficiently and its efficacy is correspondingly lower. Both salts are transported into the plant cells

by diffusion, i.e. by a passive mechanism. Cal O- an alternative! Calcium is an attractive alternative to the Ca leaf fertilizers in current use. The Ca salt of Carboxylic acid is created by a synthesis process and is used in the form of a purified, dried powder, Administered by itself, Calcium is not directly rajendra by fruits but When formulated into CAL-O its absorbed easily and it is highly effective.

In contrast to calcium chloride and calcium nitrate, calcium ions from CAL-O are taken up into the cells by active transport mechanisms. After the salt dissolves, the formate anions penetrate into the cells. There they are split into CO<sub>2</sub> and H<sup>+</sup> ions, which in turn lower the intracellular pH. To prevent damage, the cell regulates its pH by exchanging intracellular H<sup>+</sup> ions for extracellular Ca<sup>2+</sup> ions.

The controlled uptake of calcium into the cells is therefore guaranteed. 1450 g Ca/ha is necessary to effectively increase the calcium content of the fruit by leaf fertilization. With the CaCl<sub>2</sub> and Ca(NO<sub>3</sub>)<sub>2</sub> compounds currently used for Ca leaf fertilization it is practically impossible to comply with this recommendation for phytotoxic reasons.



# GREEN VISION<sup>®</sup>

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