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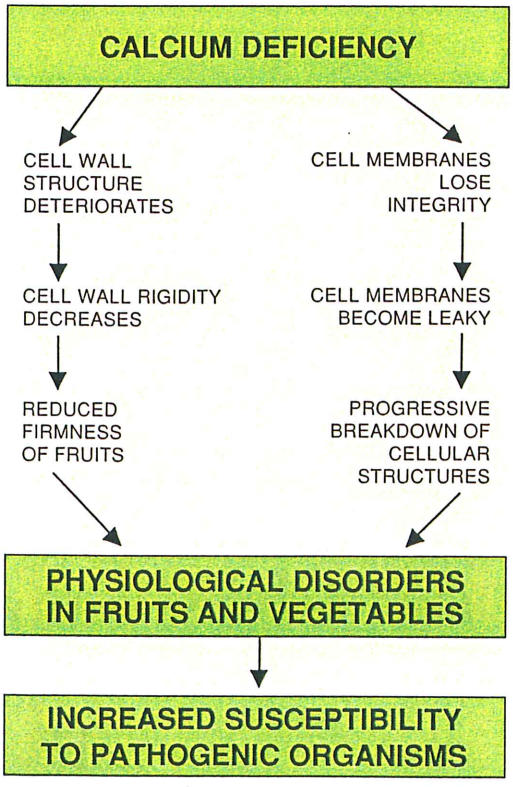
CALCIUM

The importance of Calcium in the plant.

Calcium helps to build up the cell walls and to stabilize the cell membranes of plants. If insufficient calcium is available, however, the cell walls lose their stability. This is known as a latent deficiency as the symptoms are barely visible. Acute deficiency, on the other hand, generally manifests itself in the collapse and death of the cell tissue. These symptoms differ widely in the various fruit and vegetable crops, ranging from chlorosis (discoloration of the tissue) to necrosis (death of the tissue).

FROM CALCIUM DEFICIENCY TO PHYSIOLOGICAL DISORDERS



Reasons for insufficient Calcium availability.

The above mentioned symptoms are rarely caused by a total or partial calcium deficiency but are often brought on by the following factors:

- If the soil has a disproportionately high potassium and magnesium content, calcium deficiency can occur even though sufficient calcium may be present, because calcium is displaced from the points of uptake at the roots (Ca-K/Mg-antagonism).

- Assuming a balance of nutrients is available in the soil, the plant's supply with calcium depends on the way it is taken up and distributed within the plant. Transpiration plays an important role here because calcium is conveyed upwards from the roots by the water-conducting structures (the xylem) with the transpiration stream. If relative humidity is high and the plant has thicker waxy layers, e.g. on fruit, transpiration is often inadequate, therefore endangering the supply of calcium to the cells.

In terms of plant physiology, calcium improves the firmness of plant tissue and prevents premature fruit softening. So Ca-deficiency causes weak tissue, leaves as well as petioles and fruits. This is a problem of storability, transport and general quality, for example.