

LEAF TIP SCORCH OF CARNATION

It was probably W. D. Holley of Colorado State who first pinpointed the lack of calcium as a primary cause of leaf tip scorch. But many a tip has been scorched and analysis of the growing medium has not revealed any particular lack of calcium.

In early 1977, a Finnish scientist published a bulletin about leaf damage through calcium deficiency which answered quite a few questions on leaf scorch and on drying of the uppermost leaves below the bud of a carnation shoot.

“Calcium is translocated from the root system into the leaves almost solely by transpiration stream of water. If the transpiration is weak, e.g., because of a long dull period of weather, the calcium content of the youngest leaves might remain dangerously low.”

“Calcium that is stored in the leaves cannot be translocated any more. The calcium content of leaves rises because of this as they get older. Also, because of this, calcium deficiency will appear first in the young top leaves—for instance, in carnations, in the top-most two pairs of leaves below the bud. The symptoms are: (a) the leaf edges roll inwards, particularly at the tips; (b) with continuing deficiency, the leaf tips will scorch; (c) leaf edges can show chlorotic areas; (d) top leaves roll inwards on edges while lower leaves are chlorotic.”

In rapidly growing plants, the calcium cannot follow as fast as the new growth is laid down. This may occur when winter planted cuttings go into the spring with a poorly developed root system.

There are also interactions with other nutrients which will affect calcium balance. Potassium and calcium compete in being taken up by the plant and if the potassium level is high, calcium uptake is impaired. If total soluble salts in the growing medium are at a high level this will have an adverse effect on water uptake and lead to calcium deficiency in the fast-growing parts of the plant. In a poorly aerated growing medium, the loss of roots due to overwatering will also lead to leaf tip scorch.

Sprays of calcium nitrate have occasionally been effective in countering the calcium deficiency contributing to leaf tip scorch. However, insufficient nutrients can be supplied by foliar feeding

to support growth, so soil applications are also necessary.

(Extracted by R. A. Criley from an article by H. Levonen in *The Grower*, August 11, 1977. Finnish work was that of V. Puustjarvi.)