

NUTRIENT STUDIES WITH THE POINSETTIA

All poinsettia growers realize the importance of fertilizing poinsettias properly. The following detailed descriptions of the effects of individual nutrients on the poinsettia may be especially interesting at this time of the year. This information is taken from work conducted at the University of Minnesota in recent years.

Nitrogen Deficiency-The foliage is noticeably reduced in size and the rate of plant growth is slower than normal. The lower leaves become pale, then yellow, and drop, while the remainder of the plant will gradually become an overall pale green to yellow color. In severe cases all of the foliage on the plant may be lost. The foliage will sometimes curl upward or downward, lengthwise before dropping, but this curling may also be attributed to other factors. The internodes are appreciably shortened and the plant becomes harder than normal. The greater the nitrogen deficiency, the smaller the red bracts and the slower the rate of development.

Phosphorus Deficiency-The growth rate is usually slowed down and leaf size is reduced before other symptoms appear. New growth may be a darker green than normal. Lower foliage may develop a dull washed-out appearance followed by a yellowing and a relatively quick fall of these leaves. Upward curling of yellowed leaves is sometimes present. The entire plant does not become a yellow-green as in the case with a nitrogen deficiency. It is not uncommon to have occasional green leaves attached to the stem in-between yellow leaves. The green leaves usually turn yellow a week or two later. Bract size is greatly reduced. The stems usually become a purplish-red color, especially on the side facing the sun.

Potassium Deficiency-Potash deficiency symptoms are quite variable and are probably the cause of greater difficulty in poinsettia growing than are deficiencies of other elements. Foliage size and plant growth are reduced but not usually to as great an extent as with a nitrogen deficiency. Perhaps the first noticeable symptom is a somewhat yellow checkered or mottled pattern which develops in portions of leaves near the growing tip. The veins and the largest portion of the leaf will still be a normal green. This symptom is often noticed on poinsettia plants before they are panned. If potash is applied promptly, no dead or necrotic areas will develop.

From October on, when the flower buds have begun to develop, the checkered or mottled pattern may be seen on foliage on the central third of the stem. Once the mottled pattern has appeared, it advances rapidly if no potash is applied to the soil. The leaf will become yellow around the edges, followed by the development of dead areas. Leaf drop may follow. Affected leaves often curl downward. In other instances a fraction of the leaf may become completely yellow while the remainder is completely green out to the margin. The border between green and yellow areas is usually rather abrupt. Another variation may be seen, especially when the red bracts are developing. Necrotic or dead areas will appear on edges of leaves on the central third of the stem in a period of a few days, without being preceded by any of the other visible symptoms. These spots are quite similar to those which develop from sunscald.

Calcium Deficiency-Growth is limited and spindly, the leaves dark green and thin in texture. Petioles become an intense dark red (not purplish) and internodes are short. The foliage is somewhat limp, especially in bright weather. Bract and root development is limited.

Magnesium Deficiency-The first noticeable symptoms are a paleness of the new growth and a reduced growth rate. Later foliage on the lower portion of the plant yellow between the veins not too unlike the pattern with a potassium deficiency. In contrast to potassium deficiency where the yellowing begins on the leaf margin, the margin of the leaf usually remains green in the case of magnesium deficiency. In severe cases and late in the season the leaves develop dry sand colored spots without yellowing first. Leaf loss follows the above symptoms. The leaves usually feel thinner than do those of well fertilized plants.

Excess Fluorine-An appreciable excess of fluorine has no visible effect on the growth of the poinsettia.