Characterization of Nutrient Disorders of Gerbera Hybrid 'Festival Light Eye Pink'

The symptomology of most nutrient disorders with critical tissue concentration for greenhouse container production has not been described. Gerbera hybrid 'Festival Light Eye Pink' were grown in acid washed silica-sand and irrigated with nutrient deficient solutions. Plants were monitored and photographed daily for symptoms.

An initial symptom of nitrogen deficiency was a yellowish-green chlorosis on the younger leaves. Nitrogen deficient plants were smaller in size, and the entire plant was lighter green than control plants (Figure 1). Phosphorus deficiency appeared with darker green leaves initially, turning to lighter-green to yellow-green with some purple coloration on the lower leaves (Figure 2). Potassium deficient plants developed a light tan-brown necrosis on mature leaves that enlarged over time (Figure 2). Calcium deficiency was expressed as necrotic spots between the veins on recently matured leaves (Figure 3). Magnesium deficiency symptoms initially developed on the recently matured leaves as interveinal chlorosis (Figure 3).

Initially, sulfur deficient plants had lighter green leaves, and recently matured leaves developed uniformed chlorosis (Figure 4). No visual symptom of boron deficiency was observed; however, boron toxicity yielded yellowing on the leaf margins, which progressed to interveinal chlorosis, leading to the development of a bleached white band along the leaf margin (Figure 5).

Distorted young leaves and inveinial chlorosis on mature leaves were symptomatic of copper deficiency (Figure 6). With zinc deficiency, upper young leaves developed a completely uniform yellow-green color between the veins and leaves were thicker and smaller than control plants (Figure 6). Initially, iron deficiency developed as interveinal chlorosis on recently matured leaves, but then developed over almost the entire plant (Figure 7). No visual symptoms of manganese and molybdenum deficiency were observed.

For more information, contact: Brian Whipker, brian_whipker@ncsu.edu, Department of Horticultural Science, Box 7609, North Carolina State University, Raleigh, NC, 27695

Figure 1. Control (left) and nitrogen deficiency (right).

Figure 2. Phosphorus (left and potassium (right) deficiency.

Figure 3. Calcium (left) and magnesium (right) deficiency.

Figure 4. Control (left) and sulfur deficiency (right).

Figure 5. Boron toxicity.

Figure 6. Copper (left) and zinc (right) deficiency.

Figure 7. Iron deficiency.

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