

Fertilizer Challenges in the Interiorscape

A. R. Chase

Fertilizing plants indoors represents a real challenge for a variety of reasons. First, the plants you receive may have hidden problems with either excessive or insufficient amounts of fertilizer. The amount needed for production of the crop under semi-tropical conditions far exceeds that needed for most interiorscapes. The one exception to this will be when the interiorscape mimics natural conditions of high light and humidity. Plants in a conservatory may need roughly the same amounts of fertilizer as those during production to remain attractive and healthy. The following article shows some of the common problems associated with the wrong amount of fertilizer on some interiorscape plants.

High soluble salts

Excessive fertilization or use of high salt fertilizers or saline irrigation water can result in dead leaf tips on older leaves. Yellow new foliage may emerge and stunting is common. Roots will often have dead areas as well. Root tips may also die giving plants the appearance of root rot caused by a pathogen like Pythium. If fertilizer accumulates next to a stem, the plant may collapse at that point. Reduce the rate of fertilizer applied once plants are installed indoors. The low light and temperature conditions common indoors results in lower fertilizer needs by most plants. If leaching is possible under your conditions, it is a good way to reduce potting media soluble salts. Never pile fertilizer near the stem of any plant.

Stunting due to lack of fertilizer



Although over-fertilization is more common in the interiorscape, sometimes plants are not fertilized and stop growing. Plants develop small, yellow or light green leaves. Roots may develop extensively when fertility is low unlike their sparse condition when a root disease is causing

stunting. High fertilizer can also cause stunting but in this case roots are sparse and off-color. Check soluble salts of potting medium to insure that soil fertility is low before applying recommended rates of a complete fertilizer.

Tip burn due to excess boron or fluoride



Leaves on spider plant (*Chlorophytum*), palms, Calatheas, Dracaenas and Aglaonemas have dead tips or dead spots (especially in white zones in leaves). On spider plant, a reddish border between the dead tip and healthy leaf forms for fluoride toxicity. This border is tan to gray in the case of boron toxicity. Fluoride toxicity is by far the most common problem. Use irrigation water free of boron and fluoride if at all possible. Maintain the potting medium pH at 6.0 to 6.5 to reduce availability of boron and fluoride to sensitive plants.

Copper deficiency on Aglaonema



Inadequate levels of copper causes the newest leaves to turn yellow and sometimes smaller than normal as well as deformed. Older leaves are light green and, in severe cases, newest leaves die. Plants should be examined carefully before installation to insure freedom from these symptoms. Apply low levels of a micro-nutrient mixture to insure sufficient levels of copper (and other minor elements) are available. Soil temperatures of below 65°F can contribute to copper deficiency, as roots are less able to remove copper from cold potting media.

Distortion on Bird's nest fern



On bird's nest fern, over-fertilization (especially with nitrogen) can result in severe stunting and distortion of the new leaves. Fronds may also be multi-lobed but usually do not develop typical marginal or tip burn. Leaching, followed by a prolonged grow-out will result in development of a symmetrical plant. Unfortunately, the re-growth period is usually too long to be acceptable and badly affected ferns should be replaced.

Magnesium deficiency on Spathiphyllum



Magnesium deficiency can develop on spathiphyllum indoors. Oldest leaves usually have a broad chlorotic area starting at the leaf edge. In severe cases, the areas between the veins of such leaves may become tattered and drop out. Magnesium is readily leached from sandy and other soils having little cation exchange capacity (such as some soil-less potting media). High levels of potassium or calcium in the soil also can induce magnesium deficiency. It is difficult to correct once symptoms are present. Prevent this condition by amending all container media with dolomite (usually done during production of the crop). Foliar magnesium sprays are generally ineffective in treating magnesium deficiency, since they supply very small amounts of magnesium relative to the amount required.

Conclusions

These pictures highlight a few of the many fertilizer problems that can occur indoors on our plants. If you are experiencing similar problems, sending a potting medium and/or leaf sample to a lab for analysis can be helpful. Be sure to tell the lab that the plants are in an interiorscape or their interpretations and recommendations may not be suitable. The single most important thing to remember is that what plants need during production is not the same as what they need in an interiorscape.