



By Erik Runkle



# Managing Crop Quality

**P**lant quality is subjective and situational, but parameters usually include the number of open flowers and flower buds, the stage of flower development, plant height, the degree of branching, and the absence of pests or obvious nutritional problems. Quality parameters depend on the size of the container and the market. For example, plants in large containers and those for more upscale markets often need to be larger and have a more showy floral display.

When a poor or mediocre floriculture crop is marketed, it is often related to poor management of the environment or the root zone. Listed below are some attributes of low crop quality, likely causes, and suggestions for how to overcome such problems in the future.

**Not in flower.** Usually, plants must reach a certain stage of development before they can be marketed. If plants are transplanted too late or are grown too cool, they may not be ready on the desired date. In addition, flowering can be delayed or prevented in some crops, such

as many herbaceous perennials, if they didn't receive a favorable photoperiod, were insufficiently cooled, or seedlings were not mature before the cooling period.

**Flowers abort.** Flower and flower bud abortion can occur with exposure to ethylene. Be sure that heaters don't have cracks, have adequate oxygen intake, and exhaust properly. Also, consider other sources of ethylene, such as motorized carts, fork lifts, etc. Flowers can also abort if plants get excessively dry or are exposed to very low light for an extended period of time.

**Low flower count.** Flower number is influenced by light and temperature, as well as plant spacing. If flower number is low, consider providing plants with more light, grow them at a cooler temperature with an earlier transplant date, and/or provide plants with a little more space. Flower count can also be low for cold-requiring crops that receive insufficient cooling.

**Poor branching.** Most crops branch more when grown at lower temperatures and with higher light levels, and when they have more space to capture available light. For crops with notoriously poor branching (such as lantana and calibrachoa), pinching or an application of a plant growth regulator, such as Augeo, Configure or Florel, soon after transplant may help.

**Yellow or chlorotic leaves.** Lower leaves that don't receive enough light can turn yellow and eventually shed when plants are spaced too closely together. Leaves can turn chlorotic and shoots may not develop properly if the media pH is too low or too high for the crop, or if nutrients (especially micronutrients) are not supplied at sufficient levels (Figure 1). Be sure to monitor and manage the media pH and nutrients to prevent this problem from occurring.

**Too tall.** Plant growth retardants (PGRs) are usually needed for aggressive crops. If plants are too large for their container, then an earlier PGR application and/or higher rate may be appropriate. You may need to use a PGR with a different active ingredient to achieve the desired response. Plant height is also influenced by light quality, so plants that are tightly spaced or provided with light from incandescent lamps are taller. Providing a low temperature for the first few hours of the morning (temperature drop) can also keep plants more compact.

**Too small.** Plants can be underdeveloped and small if grown too cool or not allowed enough time to develop. Conversely, plants can flower too early if plugs and liners were overly mature at transplant. Plants can also be too small if a PGR was applied at too high of a volume or rate. An application of Fascination or Fresco can help overcome a PGR overdose. ☒



*Figure 1. Interveinal leaf chlorosis can occur in floriculture crops if the media pH and nutrient levels are not adequately managed.*

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