By Christopher J. Currey

CONTROLLING CONTAINERIZED HERB GROWTH

Because PGRs are not an option, growers need a clear strategy to successfully grow herbs in containers.

Containerized culinary herbs are popular year-round. But as ubiquitous as they are, they present a key production challenge: controlling their growth.

Unlike fresh-cut culinary herbs grown in hydroponic systems, the size of container-grown herbs is important. First, more compact finished plants can improve space utilization, from closer spacing on the bench to increased plant densities in the greenhouse. Second, more compact herbs can improve water and nutrient use, as less is consumed by smaller plants. Finally, containerized plants are simply more attractive when they are proportional in size to the container they are grown in. These are many of the same reasons why growth of containerized flowering plants is controlled.

However, unlike floriculture crops, there are no plant growth regulators (PGRs) that can be applied to control growth. This article will focus on those factors — genetic, environmental, and cultural — which can be used to help control containerized herb growth.

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when you select the cultivars to grow. In addition to flavor, foliage appearance, and a myriad of other factors, herb cultivars vary in their finished size. For containerized herb producers, selecting smaller or more compact cultivars to finish can help with meeting height targets. While compact cultivars are useful, they are not always available for each herb species. Basil, the most popular and widely grown containerized herb in North America, has a number of compact-growing cultivars that can be used for producing green-leaf sweet basil plants. Although not nearly as numerous, there are also compact dill cultivars available. However, for a number of herb species, there are no compact cultivars available to choose, and growth control will have to come by controlling the environment and culture, and not genetics. For many other species, there are such few cultivars available, and in general, these are much less compact varieties.

Controlling irrigation is one step growers can take to manage containerized herb growth.

One cultural approach to take in controlling containerized herb growth is by controlling irrigation. The more "wet" herbs are grown, not only is the

tissue softer growth, but plants are larger. Conversely, by restricting irrigation and growing containerized herbs on the dry side, plants are more toned for shipping and disease pressure is reduced while excess growth is inhibited. Growing dry can be a challenge, depending on the degree of dryness desired and how plants are irrigated. Growing slightly drier is achievable for both hand-watering and automated approaches.

Pushing the crops and growing with moderately to severely restricted irrigation is not as simple. For hand-watered crops, an extremely attentive and observant approach is needed in order to catch plants before they reach the permanent wilting point, which can cause irreparable damage to plants. Automated irrigation systems incorporating soil moisture sensors can be more successful when imposing a greater degree of drought stress, as plants can be irrigated when necessary. While reducing available water will suppress growth of nearly all herbs, the magnitude of effectiveness varies among species; drought-sensitive species respond more than more drought-tolerant species.

Modifying fertilizer practices is another effective strategy for controlling containerized herb growth. First, evaluate the nitrogen concentration being applied. Using a lower concentration of nitrogen — 75 to 100 ppm N — from a complete, balanced, water-soluble fertilizer can produce healthy-looking plants and more compact growth. Culinary herbs are efficient in nutrient use, so lower fertilizer concentrations can provide sufficient mineral nutrients to keep foliage appearing deficiency-free and result in adequate growth. In addition to reducing nitrogen concentrations, try to minimize phosphorous. Phosphorous contributes to stem elongation, and the same phosphorous restriction strategy commonly used for growing seedling plugs can also be used when finishing containerized herbs. Concentrations of ~10 to 20 P_2O_5 (the form of phosphorous in fertilizers) are sufficient to suppress unwanted growth and avoid any deficiency symptoms such as lower-leaf purpling.

Without any plant growth regulator to apply on container-grown culinary herbs, producers have to look for other growth-controlling strategies. While none of the approaches presented in this article will result in all the control you may need, an integrated approach using several techniques can. **pg**

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