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# Chronic underwatering of gerbera daisy

*Growth control is a great thing...when it happens on purpose. Inadvertently growing containerized gerbera dry for extended periods of time excessively stunts growth more than desired.*

Uniformity is one of the most important aspects associated with containerized greenhouse crop production. Variation in plant size within any crop reduces quality and- in some cases- reduces the number of marketable plants.

In looking across this crop of containerized gerbera, there was a noticeable difference in plant size from the front of the growing block to the back. In walking to the back of the block, the pattern became clear- the edge of the crop had been grown too dry.



**Figure 1.** These gerbera daisy were grown too dry throughout production, the result of uneven irrigation and insufficient edging to correct for uneven moisture.

Several factors contributed to this problem. First, gerbera daisy can be more prone to drying down compared to other containerized crops simply due to the leaf morphology. The large, serrated leaves transpire more than other leaves and can use up moisture quickly, drying down. While this increased transpiration capacity helps keeps plants cooler, it also causes gerbera to use up substrate moisture more quickly.

But what became clear in looking at the pattern was that this was due to uneven irrigation. This scenario is possible in any irrigation system, be it overhead irrigation by hand, with a boom, or through sprinklers or subirrigation with flood trays or floors.

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The edges of irrigation blocks tend to receive less water during irrigation events due to less-complete coverage. It could be because the edges can be the last plants to receive water and first to lose it on flood floors. For hand irrigation, far edges simply suffer from “short arm syndrome”, and for booms and overhead sprinklers there may simply be less thorough coverage.

The plugs used for these plants had been treated with a plant growth retardant (PGR). Since they were brought in from a commercial supplier, the active ingredient and concentration were an unknown. No excessive control was seen during finishing for the well-watered plants, but this likely exacerbated some of the growth suppression from the dry growing conditions.

Drying down in between crops is a non-chemical growth control strategy that works for many crops, including gerbera daisy. Restricting irrigation and substrate moisture inhibits unwanted or excessive plant growth. This technique is commonly used in vegetable bedding plants or transplants, as well as for some containerized flowering annuals. Gerbera daisies are certainly able to withstand dry conditions. In their native environment, very dry summers and winters with infrequent precipitation. But the strategy of restricting moisture to control growth should be purposefully applied, not haphazardly tolerated.

Uniformity should be encouraged in every aspect of managing the growing environment and plant culture. From trays of 512 seedling plugs to 6-inch potted gerberas, monitoring substrate moisture and careful edge watering or “edging” can help improve quality and reduce shrinkage.



**Figure 2.** All six of these gerbera were pulled from the same block. The three on the left were from the well-watered middle, whereas the three on the right were from the edge, where they were grown drier compared to the rest of the block.



**Figure 3.** The effect of chronic underwatering on plant size carried through into flower development. The well-watered plant on the left has not only larger leaves, but a longer pedicel and larger flower.



**Figure 4.** This gerbera daisy is growing in a naturalized setting in South Africa in native soils. The crop is tolerant to prolonged, dry conditions in the root zone. While gerbera may be drought tolerant, these aren't the conditions we should create for high-quality potted plant production.

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