



By Erik Runkle and
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Watering Bedding Plants Before Shipping

This spring, the Kalamazoo Flower Group (KFG) asked for input on watering practices prior to shipping bedding plants in flower. They ship plants throughout the eastern two-thirds of the United States, and wanted to make sure that plants arrived at stores in the best condition possible. Watering plants is a very subjective, difficult-to-quantify subject. However, it is a very important topic, especially for growers who ship plants long distances.

In response to KFG's query, we performed a pseudo-scientific watering study to get a better understanding of how present watering practices influence plant longevity, as well as to quantify watering variability within racks, within carts and among growers. Our trial was only on flowering petunia, and was performed once with plants from three growers. However, the outcomes of the trial give us more insight into developing watering guidelines prior to shipping.

In late April, we collected 606 flats of petunia from the KFG loading dock that were from three different growers, from different racks of different carts, and from random placements on each rack. The plants were taken back to Michigan State University (MSU) and placed in a refrigerated environmental chamber (low light at 68° F), and a variety of data was taken. Here are some of the questions we asked, with answers based on this study:

How much moisture variability was there among the growers?

At the onset of the study, a subset of plants was watered to saturation and their weight was compared to plants that we did not irrigate. Plants from one grower were consistently drier compared to the other two growers. One grower's plants could have held approximately 95 percent more water. In contrast, plants from two other growers could have held 36 or 42 percent more water.

Did the position of the flat on the rack influence the moisture content of the media?

We asked this question because many growers water

plants after they are placed on racks using a watering tunnel (Figure 1). We speculated that plants positioned at the rack edges would have a moister media than those on the interior. We found that, although there was some variability from one grower to the next, there was no clear trend in how the position of the flat on the racks influenced water content. When combining data from the three growers, plants from various locations on the rack were within 8 percent of the average weight (water content) for each grower.

How long did it take for plants to wilt and become unmarketable?


As mentioned, we held plants in a postharvest chamber, simulating an indoor retail environment, without watering. On average, plants took eight to 10 days to wilt, and the results were quite similar among the three growers. Therefore, although the initial water content varied among growers, the net result in wilting time did not vary.

How much longer would plants have lasted if they had been watered to saturation at the beginning of the postharvest evaluation period?

Plants that were initially well watered at MSU lasted five days (Grower #1), two days (Grower #2), and four days (Grower #3) longer than the plants that were not watered at MSU.

Based on this small-scale trial, we can conclude:

1. Even though plant moisture content varied among growers, plants remained marketable (not wilted) a similar, fairly long time without watering. Of course, a higher temperature and high light levels would shorten time to wilt dramatically.
2. The position of the plants on the racks did not influence water content.
3. Since water was apparently not a limitation prior to shipping, proper watering of plants is of greater importance after they arrive at their retail destination.

Although it is desirable to have a moderately moist media at shipping, the foliage should be dry to help prevent disease problems, particularly Botrytis. Putting wet plants into a dark truck can have disastrous consequences. Fortunately, none of the petunias had wet foliage when we collected plants in the loading dock for this study. 

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Figure 1. A watering tunnel is commonly used to water plants on racks before shipping. Foliage should be allowed to dry before being placed in trucks.