e-GRO Alert

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Stacking without Packing- Success with Prefilling Containers

In the spring, we want to take advantage of time and if we can work ahead to get tasks done before planting to improve efficiency and relieve stress, including filling prefilling containers. However, we can sometimes cause problems if we don't remember best-management practices.

Trying to beat the buzzer isn't just for athletes- it is also what greenhouse growers are trying to do everyday in the spring season. As the busiest season, as well as the most economically important one, taking the time to work ahead is welcome whenever the opportunity presents itself. One way to save time and expedite planting (or sticking cuttings or seeding plug trays) is to prefill containers with substrate. When the planting, sticking, or seeding line gets going, filling containers won't slow it down.

Figure 1. These prefilled trays may save time during transplanting, but they will likely change the physical properties of the growing substrate to less-than-ideal conditions.

While prefilling containers can be a big time-saver, it can also cause problems during production if done incorrectly. First and foremost, when containers and trays are pre-filled with substrate, they need to be stacked correctly; and when I say "stacked correctly", it is to avoid "nesting" of trays and containers on top of each other (Fig. 1). While the ability of containers and trays to nest within each other is a huge space-saving benefit for shipping and storage, it can cause problems with prefilled containers. When prefilled containers nest on top of each other, it changes the physical properties of soilless substrates. For those containers under compression- which is all of them except those on the top layer- stacking with nesting is going to end up reducing the air space in

Figure 2. These containers have been prefilled with substrate. However, they have not been stacked directly on top of each other to avoid nesting. Re-orienting the trays, whether perpendicular or slightly off center, is a good strategy to avoid nesting.

substrate, as well as the bulk density. This effect is going to be magnified once the substrate is irrigated in thoroughly after transplanting into containers and trays. The water holding capacity is also going to be greater once the substrate is watered in. With reduced air space and increased water holding capacity, this compression is going to cause substrate to hold more water and prolong the time it takes for substrates to dry down.

To avoid this problem, there are a few simple solutions. First, when stacking trays of container, simply set them at angles so the bottom of the trays don't nest into the top of containers below them. For single containers that are not in trays, instead of nesting them on top of one another (Fig. 3), place something solid in between the layers, like a piece of plywood (Fig. 4).

In addition to not nesting containers, it can be helpful to keep substrate from excessively drying out when it is prefilled in containers or trays. As the substrate dries, it can settle, leading to some of the same problems that stacking leads to. By covering prefilled containers with plastic (Fig. 5), substrate will dry down minimally and maintain its physical properties for planting, sticking or seeding.

Figure 3. These hanging baskets have been prefilled with substrate prior to planting. Unfortunately, they have been stacked directly on top of one another, allowing the substrate to compress prior to planting.

Figure 4. To avoid negatively affecting the physical properties of the growing substrate, sheets of plywood have been placed in between layers of these prefilled hanging baskets.

Figure 5. Substrate can dry down in prefilled containers and trays if let sitting for too long without a way to prevent moisture loss. These trays have been covered with a plastic sheet to avoid excessive moisture loss and dry-down prior to transplanting. .

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