

# GROWERTALKS

## Features

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## Increasing Plug Yield & Uniformity

*Andrew Britten*

There are many factors that can make or break the quality of a plug crop. Some of these factors are much more in our control, whereas others are in the hands of our suppliers. Making sure you can manage the things you can control will go a long way in helping your consistency. The initial two factors in producing a high-quality crop are first your starter material, followed by your moisture management in the germination stage.

Make sure you're purchasing high-quality seed from your supplier. Just because the seed price is cheap, doesn't mean it's going to save you money in the long run. A supplier that regularly checks the quality of the seed and maintains its storage in optimum conditions will allow a much better start for your production. Poor consistency in the seed will create issues of consistency throughout the entire production, which will become expensive to sort and even out by hand. (Cheap seed doesn't mean it will cost you less!)

### Managing your moisture

Moisture management in the germination stage can turn great-quality seed into poor yielding seed. Two main factors are managed to create the proper moisture to the seed. The first main contributing factor is the compaction of soil within the tray. The harder the compaction, the more moisture the cell is going to hold. Inconsistent compaction through the tray will result in uneven moisture throughout the life cycle of the plug. Check your compaction frequently to assure your consistency.



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The second factor in your moisture management is how you're maintaining moisture on the seed coat. To maximize germination, the seed should be constantly moist, but should not be drowning in water. We utilize GTI booms with VPD

(Vapor Pressure Deficit) for this process. Based on the algorithm we've built, we can assure a boom pass at just the moment the plants need the moisture. This is achieved by reading the environment temperature and

humidity to determine the dry down rate. This can also be achieved with booms without VPD, but you'll need to adjust your cycle based upon the weather.

Fog systems can be equally effective. Fog can be used either in germination chambers, maintaining very specific temperatures, or in northern environments in greenhouse germination areas.

## Germination

During the germination stage, the utilization of pre-germination growth regulators can also improve the consistency of the trays. By applying the regulator prior to germination, the plants “grab” a little bit of regulator each day as the roots develop. This gives the plants very small doses of regulator frequently, helping to build the base of the plant and create a sturdy start. If you have a seed lot that's not performing as well in relation to germinating at the same time, this technique will allow the regulator to be applied equally to all plants in the tray. As each plant germinates it “grabs” the same amount of regulator each day in relation to its stage of growth. This avoids the over-stunting of the late-germinating plants having potentially been sprayed too early.

## Finishing

Once germination has gone well, you should have good uniform stands and be ready for the rest of the plugs' life. Here the consistency of your growers' applications of chemicals and fertilizers can make or break the rest of your crop.

Without a doubt, booms will greatly help to make a crop uniform. The boom is a tool that needs to be kept in top shape to assure consistency. Measure the output of each nozzle on the boom to make sure they're all delivering equal parts of solution. Although not visible, small amounts of clogging can quickly make your boom as inconsistent as a novice grower. If you aren't receiving equal distribution, take your booms apart and clean them. If you haven't checked your booms before, chances are pretty good that you are not consistently delivering water to your trays. One tell-tale sign will be consistent lines of smaller and larger growth running down the length of the bench. By this point, you need to clean your booms today.

Although booms do very well with watering the bulk of your trays, they don't do well with watering the edges that dry down faster. Double nozzles on the edges of the booms help, but daily spot watering of your benches is a must. The booms do well at maintaining uniformity to uniformly dry benches. Make sure to even your benches by hand before thoroughly irrigating with the boom.

Without a doubt, the most important part to maintaining high yields and uniformity lies in the team that you put together to work with you. Training, developing and maintaining a quality team is of utmost importance to having a successful result. **GT**

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*Andrew Britten is with Total Growth Solutions—a division of Costa Farms—located in Miami, Florida. He can be reached at [abritten@totalgrowthsolutions.com](mailto:abritten@totalgrowthsolutions.com).*