Plugs and Automation—"The Future is Here!"

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HISTORY OF BEDDING PLANT PRACTICES WITH REFERENCE TO SEEDING AND TRANSPLANTING

The old practice of seeding was to seed into flats using 1000-1500 seed per flat. After germination, transplant 64 seedlings to the same size flat. After 3 to 5 weeks, transplant those to the various finished product sizes. The only automated process of this practice was the flat filling and dibbling (dibble board).

CURRENT PRACTICES—COLORAMA

Assumption: Decision made to use plugs after going over the pros and cons. Our nursery grows its own plugs. Now that we have a viable plug, we decided, based upon the volume of plugs we need (approx. 750 thousand per week), that we still needed our original Blackmore seeder for certain varieties. However, we also needed to go faster with the same or better accuracy. We chose a Williams Drum Seeder (product of Australia). We currently have two of these machines, one being used for our 406 cavity plug tray and the other on our 162 cavity plug tray. The speed on the Williams Drum Seeder can go as high as 1.7 million seeds per h. We do not run this fast, since we're making small runs of many varieties. Plus, there is no way one human being can remove that many trays at that speed.

Now that we have the seeder, we went to a larger capacity tray filler, on which we can set compaction percentages, speeds, and soil depths. We also added an automatic plug tray dispenser. With all of the machines set to seed, we decided to put this all in a climate-controlled warehouse setting. We added "dutch trays" (containers) to take care of the handling problems we had prior to automating the seeding line.

From this point, we built a computerized, state-of-the-art greenhouse, solely for plug production equipped with automatic watering booms, grow lights, auto shading curtains, and a Mee Fog System.

Carrying this process further, what we have now is a viable, living plug to transplant to a finished product. We now go through our potting area where we've been using a Timmer robotic transplanter for the past 5 years. This particular model is a double trolley, utilizing 2 rows of plug trays, one on each side of the machine. There are two sets of fingers, one for each plug tray run. When one side of plugs is being picked up, the other is being planted in the finished product coming through the middle of the machine; the process then reverses. This machine does not electrically scan each plug cell, consequently, it will plant a blank. We still need repairers after planting to catch those "blanks"; obviously, it is not completely foolproof. The capacity of this machine is 20,000 plugs/h.

Our 4-inch pots are planted on a super Javo, 6400 pots/h. Two people are needed with plug trays. Those plug trays are dislodged prior to planting.

CONCLUSION

Growing plugs can save time and enhance profits. If you choose to automate, it can be done at the very beginning of seeding, in the germination area or during the transplanting process. My personal feelings are that automation keeps us cost effective and on top of technology. I've always been a believer in putting capital back into the business. We have to stay competitive and one way is to use automation. Consider a few of the following factors prior to automating: What do you want to accomplish, what support equipment will be needed, what is the cost, and what is the payback period?