

## Improving Production Efficiency

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### INTRODUCTION

Whenever you hear the word “efficiency”, several things usually come to mind. Speed, automation, labor-saving, step-saving, time-saving, and money-saving are all common terms associated with efficiency. Unfortunately, the day of the push-button nursery is not yet here. However, there are probably some things that all of us can do to become more streamlined (another efficiency buzzword there).

Certainly the development of better chemicals has made all of us more efficient growers of nursery stock. Nurserymen of generations past could never have imagined the pre-emergent herbicides and slow-release fertilizers we now find commonplace. Although this is not an economics course, the biggest reason for the painfully slow rise in plant prices over the last two decades is that we have the ability to produce plants so much more efficiently than our predecessors did. But, there is still room for improvement, and it will come.

### CONCENTRATE EFFORTS ON WHAT YOUR NURSERY DOES BEST

One way to become more efficient is to concentrate your efforts on doing what you do best. One genus of plants maybe, or perhaps only one cultivar. If all you did was grow thousands and thousands of Helleri holly, for example, odds are you’d figure out how to grow them very efficiently. The obvious downside to this technique is that you are at the mercy of a very fickle market.

So, if you’re like most of the rest of us, you’re left trying to figure out how to grow the most plants on the least space in the shortest time for the lowest cost. While I certainly don’t pretend to have all the answers, I would like to share a few ideas with you that you might implement in your business.

### IRRIGATION EFFICIENCY

One of the most important aspects of nursery production is irrigation. As with all other cultural practices, every nurseryman I have ever met has different ideas and techniques regarding irrigation. But, whether it is in propagation or production, there are quite likely some things you can do to irrigate more efficiently.

At our nursery, we rely quite extensively on 24-volt solenoid valves. In our propagation houses, these valves are controlled by an electronic timer. In our fields, we use toggle switches on a centrally located panel to operate them. While solenoid valves generally cost about twice as much as brass ball valves, they more than pay for themselves in labor savings. Whoever invented electronic timers and solenoid valves should have been awarded a Congressional Medal of Honor.

Like a lot of other folks, I had always imagined that the only way to water large, container-grown trees was with a drip system. Twin Oaks Nursery in Wilmer, Alabama uses very large overhead sprinklers to irrigate their trees. While this system is far less efficient in terms of water usage than a drip system, it increases production efficiency in that you don’t have all those drip tubes to tend to. This is not

a water-usage seminar anyway. Incidentally, even though these sprinkler heads are enormous, the water is so finely broken that it falls as softly as rain. So softly, in fact, that liners can be grown under them.

### **EASIER WAYS TO COVER GREENHOUSES WITH POLY**

The nursery business, like any other business, I suppose, has its share of unpleasant tasks. In my opinion, no regular chore at our nursery is any less fun than covering greenhouses with poly. At Flowerwood Nursery in Loxley, Alabama somebody figured out a way to make this job easier, if not more fun. They have taken an old school bus and built a platform atop it. This puts the workers right up there even with the tops of the greenhouses. Inside the bus are all the supplies needed to put up plastic.

### **CHEMICAL SPRAYERS**

Earlier, I mentioned that improvements in chemicals had helped all of us to become more efficient. Fortunately, sprayers have come a long way, too. Blower-type sprayers are quite popular now and in many operations, so are electrostatic sprayers (ES sprayers). At our nursery, we use blower sprayers almost exclusively and we love them. While they may not be perfect, they save us a lot of time and money. As for the ES sprayers, they are great in many cases, but the slightest breeze makes them difficult to use.

One simple but effective spray rig I have seen recently was used to apply liquid pre-emergent herbicide. It was simply a 4.9-m (16-ft) piece of pipe with holes drilled and tapped for spray nozzles about every 46 cm (18 in.). One end was capped and the other had a hose attachment. This device was attached to the sprayer hose and carried by two men over two rows of container-grown plants at a time. Although this spray boom was inexpensive to construct, it worked like a charm.

### **RECYCLING MEDIA FROM DISCARDED PLANTS**

None of us really likes to throw plants away as this practice makes profit difficult at best. But, if you have to trash some plants, and at times it seems we all do, you can learn a little something from Flowerwood. They dump dead plants onto a conveyor which runs into a dump truck. The waste soil is then incorporated, in small part, into a new potting mix. Since this operation takes place under a shed, dead plants are placed there in advance so they can be dumped during rainy weather.

### **POTTING SYSTEMS AND CONVEYORS**

In our neck of the woods, a lot of time, thought, and money has been spent on making our potting systems more efficient. Speaking from my own experience, the ability to pot in the field has vastly increased our production efficiency. We spent a good bit of money distributing electricity all over the nursery, but it was money well spent. With our potting machine and conveyors, we can pot almost three times as many plants per day as we could when we potted under a shed and hauled the filled wagons out to the fields to be unloaded.

As for the conveyors, not only are they indispensable in our potting set up, they are also very handy for loading trucks and for filling or emptying greenhouses. Like any other piece of equipment, conveyors are quite expensive. But, for us at least, they have been well worth the cost.

## **MECHANIZED PRUNING**

A quick, simple and less back-breaking method of pruning is a good way to increase production efficiency. Flowerwood Nursery uses a nifty pruning apparatus made of three mower decks mounted on a cart-like frame. The cutting height is easily adjusted by means of a small pulley which raises or lowers the cutting deck within the frame. About the only requirement for a pruning device like this is that all your rows must be of equal width.

A simpler pruning device, from Overlook Nursery, is nothing more than a pair of gasoline trimmers attached to a wheelbarrow frame. The cutting height is adjusted simply by raising or lowering the handles. This is not rocket science — you know!

At our nursery, we are quite fond of our gasoline-powered trimmers. They are great for anything that needs a flat top and, while they may not be as impressive as a cart-type pruner, they are a vast improvement over human-powered hand trimmers.

## **IMPROVING ROADS AND DITCHES**

Believe it or not, there are some things you can do to make your nursery more efficient that aren't chemical or mechanical. Paved or gravel roads and ditches give your nursery a neater appearance and reduce weeds.

## **OTHER PRODUCTION PRACTICES**

Potting small liners into large containers was virtually unheard of 15 years ago, but is commonplace today. Obviously, cutting out even one potting operation in the production of any crop increases production efficiency.

One efficient cultural practice we have employed at Rocky Creek Nursery is the potting of our young azaleas into very narrow rows. This enables us to space our azaleas where they were potted rather than having to move and space them elsewhere. An added benefit of this practice is that weeding and pruning are considerably easier than with wider rows. Incidentally, we can grow roses in the gaps between the rows. By the time the azaleas need to be spaced, the roses are gone.

Obviously, I have only scratched the surface of all the possibilities that exist in increasing production efficiency. If I can make only one impression on you from these ramblings, it should be that nurseries that are efficient will prosper when all the others simply survive.