

P & P: A NEW FIELD-TYPE NURSERY OPERATION

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Growing high-quality container plants at a profit is the primary goal of Lancaster Farms. For many years we tried to grow large—10-gal and up—plant material utilizing our accepted production practices but with very little success. The market was asking for larger container plants, and we were unable to deliver a quality product profitably. Six years ago we started on a diversification plan to add a field-grow division to the nursery. In our first effort we used field-grow fabric containers and trickle irrigation. We experienced difficulties during planting, and the harvested product did not meet our expectations. Late in 1988 we decided a change was needed.

To meet our requirements for a profitable field division a new system must provide the following:

1) Trickle irrigation. Our concern for water runoff, groundwater pollution, and water conservation dictated that any expansion of the nursery utilize the advantages of trickle irrigation.

2) Wind blowover control. We detest performing any task that does not add value to our product. The system, therefore, must provide a means of growing the larger products wanted without the problem of knockdown in a moderate wind.

3) Winter protection. In southeastern Virginia overwintering structures are essential for the production of container-grown plant material. On the other hand, field-grown plants do not require special overwintering procedures. We wanted a system that provided both a growing and overwintering environment.

4) Mechanization. Any imaginative idea must have associated with it the ideas as to how the task can be mechanized.

5) Traditional marketing. Our nursery is in the business of selling plants, not new ideas. We spent more time selling the grow-bag concept than we did selling the product.

In the late fall of 1988 I spent a week touring nurseries with three Dutch nurserymen. In the course of our conversations concerning winter protection of container plants, we learned that some nurserymen in Germany plant their containers in the ground. This started me thinking. . . Why couldn't we plant container plants directly in the ground? The idea fulfilled most of the five initial criteria. But what about roots growing out of the container? And how do you mechanize the job? The concept was a good one but needed more thought.

During the 1988 IPPS Eastern Region meetings I had the opportunity to discuss the idea with friends, Pinney, Shadow, Machen, Stroombeck, Brush, and others. My living room was full of different size containers, and the ideas and suggestions on the system started to take form. We would plant a permanent container in the ground and then place inside this container another container growing the actual plant, a "Pot in a Pot" or "P & P."

THE PRODUCTION SYSTEM

Field preparation jobs of plowing, disking, and grading are completed as usual. Underground irrigation main lines are installed, and the field is laid out into the desired spacing. The entire area is treated with herbicides, and we are ready to set the permanent pots into the field.

A tractor-mounted auger is used to drill holes into which are placed permanent containers. A rigid, injected-molded pot makes an ideal durable in-ground container. We have used from 3- to 15-gal pots. This fixed pot is planted so 3 to 4 in. remain out of the ground. This allows for settling to take place and still keep the top lip of the pot above the ground surface. The area is then hand-raked, lateral surface irrigation lines are laid, and individual Roberts Spray Stakes are installed at each pot.

Plants are potted on our potting machine using a blow-molded container, transported to the field, placed into the permanent pot, and a spray stake is installed.

DISCUSSION

The system encompasses all of the original five requirements; however, we have had our share of problems. In some of first plantings we set the permanent pots too deep, and many of the pots filled up with field soil after a strong wind and rain storm. I might also add that any time a field pot does not have a plant growing in it we place an empty pot inside to catch leaves, soil, and debris. We want the permanent pot to stay as clean as possible.

When and how much to water is something that I cannot tell you. I can tell you that it is essential for plants with similar water requirements to be grouped together under one irrigation regime. Even though we are in a field-grow situation, the plants must be treated as container-grown. You cannot grow dogwood and river birch on the same irrigation line.

Roots growing into the surrounding soil is the major flaw in the P & P system. Even though we feel this is a primary concern we have had problems only on a few cultivars such as birch.

Criteria four for the system was misstated in our original requirements. Moderation of temperature would have been a

better requisite. Winter temperatures of 0° F resulted in no damage to sensitive foster holly. The advantages gained by keeping the root system cool during the growing season are impressive. I have never observed such outstanding root structure as the P & P system produces. This awesome root structure in turn creates a problem. Some form of protection must be given to the root system when harvesting in 100° F summer temperatures or else the plant is severely damaged. We have tried to protect the roots by painting the outside of the pot white or covering with microfoam.

SUMMARY

I am convinced that the benefits of the P & P System far outweigh the disadvantages. Large, high-quality container plants can be marketed any time of the year in an economical manner using the P & P System. I am certain P & P will grow in importance and become a standard procedure in future years.