

oversupplied by numerous tissue culture laboratories. The result is lower, less profitable prices at all levels of production.

We all have opportunities to increase efficiency. If you are operating exactly the same as you did 12 months ago, you are failing and your competition is gaining. Be flexible, progressive and open-minded to progress. Avoid following nursery tradition because of tradition. Set a tradition of change, progressiveness, and leadership; the result will be an increase in production, efficiency, and growth.

EFFICIENCY TECHNIQUES IN BALL & BURLAP PRODUCTION

DENNIS V. McCLOSKEY

Windmill Nurseries, Inc.

Route 4, Box 180

Franklinton, Louisiana 70438

Growing plant material in the ground has been around from before the time of Christ, but even with this vast span of time only the last 25 years have given us any real technical advances.

The shovel has given ground to the hydraulic spade. The hand-tied ball has been replaced in part by the wire basket. The in-row tractor has totally replaced the mule and Georgia stock. The forklift and pallet are quickly replacing the strong back and weak mind. Irrigation and anti-desiccants are extending the harvesting time. Various containers and concepts are helping overcome the shelflife problem of unplanted ball and burlap (B&B) material, and advances in the use of herbicides have all but eliminated the eyehoe.

But given these few changes in contrast to the many technical advances that have taken place in the last 2,000 years, in-ground growing of plant material, with its antiquated methods, still remains the very best way to grow and transplant many kinds of plants and trees.

At Windmill Nurseries, Inc. about 50 percent of our gross sales comes from the production of B&B material and I would like to give you details of several practices that we utilize in increasing our efficiency.

Hydraulic spades used on track-mounted skid loaders are by far the most efficient application for Windmill. We process the ball directly onto the haul-out wagon, thus eliminating the haul-out process. This requires additional wagons, but they soon pay for themselves.

The use of a ball ring keeps the ball in the upright position

during processing, thus eliminating a few extra hands. These rings are constructed from 1/2-in. galvanized pipe at a minimum cost.

A five-man crew per machine can harvest one semi-load of 24-in. balls per eight-hour day consistently, which is approximately 150 units, or 80 units of 32-in. balls, or 40 units of 40-in. balls. These balls are what we call "truck ready"; that is, palletized, trunks wrapped, and tops tied. The loading crew can go directly from the digging wagon on to the truck for shipping without any further processing. The floor of our haul-out or processing wagons has pallets, eliminating the need to muscle these large balls around and onto pallets.

Forklifts and pallets during the loading process have virtually taken the work out of handling and loading B&B stock. I do not think that we could hire the people any more who would muscle these plants from the ground onto the semi-trailer trucks as we did in the past. This is not to consider the injuries and strain and insurance risk that today's nurserymen must endure.

We construct our own pallets, which are 5-ft. wide by 4-ft. deep, with a solid top, made with treated pine lumber. The box is tapered as we have found we can distribute the weight along the sides by making the bottom narrow. This helps reduce the tremendous weight on the bottom. The cost is about \$22.00. I can assure you that we have tried all other alternatives in constructing these pallets.

We use burlap rather than treewrap. It is cheaper and provides a better cushion.

The use of *tree booms that fit over the fork of our lift trucks* has tremendously increased our efficiency in handling 32-in. and 40-in. balls. It takes about two hours for three men to load a semi with 32-in. or 40-in. balls using the tree boom, and there's not a bit of heavy lifting in the process. We construct these booms in our shop out of mostly scrap materials for less than \$150.00 each.

Our use of narrow-row tractors with limb guards has given us the ability to cultivate 6-ft. rows without damage to the plant material, tractor, and, especially, the operator.

Our spacing is a 6-ft. wide row, with in-row spacing of 3 ft. and 4 ft. depending upon cultivar. We plant five rows and skip a row for access with digging and spraying equipment. This spacing gives us 1,500 plants per acre with 4-ft. centers and 2,000 plants per acre with 3-ft. centers.

Windmill's experience is we only have 60 to 70% plantable land in a given block of acreage. Terraces, turn rows, access roads, ponds, waterways, and fence rows take a much greater area than we first thought.

These ideas have helped us, and we feel B&B production still has an important place in the nursery industry.