PROS VS. CONS IN USING ROOT-CONTROL FIELD-GROW CONTAINERS

KENT LANGLINAIS

Kent's Nursery, Inc.
Route 1, Box 183
Youngsville, Louisiana 70592

During the Southern Nurserymen's Association convention in Atlanta, in August, 1983, Dr. Carl Whitcomb came over to my booth in the exhibit hall and began talking about a system of growing that I had never heard of before. The more he talked, the more interested I became. He took me over to his booth, introduced me to Mr. Ralph Reiger and the root control bag. He had a tree growing in this fabric bag. Realizing the need and importance of this new system, I made the remark, "Where have you been all these years?"

PROS

The first advantage is that the trees will not blow over in a strong wind as would large trees in containers, which must be tied and staked. Trees in field-grown containers have withstood winds in excess of 80 miles per hour without any damage to the trees.

The second advantage is that it takes less water to grow in these root control bags than in large containers. Plants in the root control bags need no more water to grow than they would in a field operation. A drip irrigation system would help grow a faster crop. However, in a high-rainfall area, it is not necessary. We receive 60 inches of rain per year, and do not need irrigation.

The third advantage: There are no wrapping roots, as in container-grown trees. The inner surface of the fabric is "bearded"; that is, there are loose fibers on the surface of the fabric. These fibers prevent root circling by entangling the root tips, forcing them to grow through the container wall. Since the root is very small at this point, there is little or no restriction by the fabric. As the root grows farther into the surrounding soil and increases in density, the fabric begins to constrict or girdle the root. Unlike container-grown trees with circling roots that would need to be cut before planting, root-control bags are continuously pruning the roots and making a better root system.

The fourth advantage is protection from freeze damage. Container-grown trees must be unstaked and jammed together to protect them from the winter elements, then spaced and staked again in the spring. In addition, some trees must be brought inside, and others need windbreaks to protect them, which creates more work. The roots in the root control bags are below ground level and are protected from freeze damage just as in a field operation.

Advantage five is the ease of digging or pulling them out of the

ground. The normal balled-and-burlapped method has a larger root system that has to be cut, plus the digger has to be careful in shaping the ball so that it will not crack or fall apart. In some areas, especially those with high levels of sand, the balled-and-burlapped tree is almost impossible to dig. In our area, sometimes it is too wet to dig trees. Trees grown using the root-control method can be dug at anytime, with much more ease and more quickly. There are mainly small feeder roots and the fabric in the ground serves as a guide for digging. Sometimes a root will escape through the area where the bag is seamed together. These are mainly anchor roots that can easily be cut without affecting the livability of the trees. With the new bags that have glued bottoms and sewn seams, there is very little area where roots can escape.

The sixth advantage is that the plants can be dug anytime. Since there are more feeder roots that are not cut or disturbed while digging, there is a higher livability than with the balled-and-burlapped method. In the case of the balled-and-burlapped trees, the root systems after the ball is formed resemble one's hand with nubby roots and a small amount or no feeder roots to help the trees survive the shock of transplanting.

The seventh advantage is that the balls are smaller and lighter. According to the American Association of Nurserymen Standards, a 2-in. caliper tree would require a 24-in. ball, which would weigh approximately 275 lbs. It is recommended that a 2-in. caliper tree be grown in an 18-in. bag and should weigh approximately 175 lbs. More trees can be carried per truck load, making the freight per unit cheaper. It would take a machine to handle a 24-in. balled-and-burlapped tree while the 18-in. bag could be handled by hand. Since the bottoms of the root-control bags are flat and the same width of the bag, they are easier to stand up.

The fact that fewer roots are lost gives an advantage besides increased livability. It is estimated that approximately 75 to 85% of the root system in balled-and-burlapped trees is lost. The remaining roots are mainly anchor roots, which are then very important for the livability of the trees. With the bag method, just the opposite is true; about 85% of the root system is retained. The only roots that are cut are the ones that escape through the fabric.

Rapid establishment is the ninth advantage. Since there are hundreds of feeder roots in the bag that are not being disturbed, they continue growing undisturbed in their new setting. The fibrous root system created by the bag provides long-term benefits to tree health in addition to the obvious advantage of ease in transplanting and rapid establishment. The chances of root girdling and strangulation in bags is remote since water and nutrient absorption is accomplished by a mass of small roots as opposed to a few major roots. In addition, no roots from trees grown in the fabric container will ever get as large as when the same species are grown conventionally,

which reduces the danger of damage to sidewalks, driveways, and foundations. The fibrous and compact root systems lend themselves readily to planting in pits and other landscape situations where horizontal root development is restricted. Anchorage should be equal to or better than conventional trees, since the many small roots act much like the many fine strands of steel in a cable versus a solid steel rod of the same diameter. Fabric container-grown trees that are transplanted and grown to a larger size would be better candidates for large trees to be moved easier.

Advantage ten: overall cost is lower. Even though the upfront cost to plant trees in field-grown containers is higher than the conventional method, the overall cost is much less. In digging the crop, less experienced help is needed since it is not necessary to sculpture the ball. Little or no burlap is used. The ball is lighter so manpower can be used in handling instead of machinery. Because of the size and weight of the finished product, more plants can be loaded on trucks; therefore, cost per unit is less.

These are just a few of the pros. There are no doubt many more than could be reported from different areas around the country or the world.

CONS

Certainly, the initial cost of around $1.00 to $2.60 per unit, depending on the size of the container used is a con. This does take a large investment when planting several thousand trees. However, remember that at digging time, a great deal of this cost will be balanced off by less labor and burlap.

Another con would be that at some time in the future, the root control fabric must be removed or the tree becomes a bonsai or dies. The fabric does not rot and only light will cause the material to deteriorate. Therefore, if the market is slow and trees do not sell on the market, some trees will out-grow the bags.

This con could be turned into a pro with the root control bag, but not so easily with the conventional ball-and-burlap method. If a crop does not move in a bag, it can easily be dug and sold to a container operation as a super liner for larger can production or large field-grown trees.

These are just two facts that we consider cons. Others may appear in the future as more bags are used in the industry.

A key factor to remember is that it is not the quantity of soil moved, but what is in the soil that is important. In the future, when history is written about the wholesale nursery field operation, this root-control type container will be one of the tools highly mentioned as having helped revolutionize the nursery industry.