

# THE CALIFORNIA CONCEPT OF CONTAINER PRODUCTION

WALTER LEE

*Monrovia Nursery Co.*

*Azusa, California*

The California concept of container production is to mass produce plants and offer them to the retail nurseryman at the lowest possible price. This has been brought about by the great demand for shrubs and trees for home beautification in California and the neighboring states.

Shrubs and trees are sold and planted in California twelve months of the year, and retail nurseries in California are open either 6 or 7 days a week. There are peak seasons occurring in the early spring and fall when the demand for plants is greater than in our summer or winter months. To meet these demands the wholesale growers in California have been forced to use mass and container production methods.

Another factor that has contributed to container growing in California is the high cost of land which in many cases amounts to thousands of dollars per acre. Approximately 10 times field production may be realized by the use of container methods. For example, we can grow roughly about 96,000 containers on an acre, allowing for access roads, waterways, and space between beds.

Plants are sold in California by container size rather than by spread or height of the plant. The retail customer in California buys his plants by the gallon the same as most of you would buy oil.

Due to our mild winters in Southern California, our growing season is greatly extended. Plants break out of their dormancy by the latter part of February and remain in active growth until late in October or early November. This gives us a much longer growing period than most of you enjoy.

Container grown plants enjoy another advantage in that the root ball of the plant is intact, held in place by the walls of the container. There is no severance of roots as is the case of field grown stock. Therefore the container gives the plant an important advantage over balled and burlapped field stock, in that when it is planted out, the root system can readily absorb food and moisture without first having to make new feeder roots. Still another advantage of container grown plants is that they may be purchased and planted at the convenience of the retail customer. Container grown plants can be shipped long distances, arriving in excellent condition and ready of immediate sale.

With container grown plants, we are able to supply the retail nurseryman at an earlier date than is possible with field grown stock. We have had reports from some landscapers that they prefer to use container grown plants because the replacement problem is practically nil. While it is true that the container grown plants are smaller in size than field grown stock, they are as large as the field grown plants one year after planting out. It is also possible to offer the retail customer a more complete landscape job using container grown plants than it is when he must buy specimen sized, balled and burlapped stock. These are but a few of the advantages of supplying nursery stock in contain-

ers. Further thought and study on your part will bring to light many others.

It is a surprising fact to learn that fifteen percent of the ornamental shrubs grown in the United States are grown in California, and that six and nine-tenths percent of the nation's total are grown in Los Angeles County. These figures are taken from those compiled by the University of California and may be found in the book, "The U. C. System for Producing Healthy Container - Grown Plants," Manual #23.

We have long foreseen the advantage of having selected, Mother plant, stock from which to take our cuttings and scion wood. The plants that are in our Mother plant field have been carefully selected for the most desirable characteristics of that particular variety. Anytime a plant shows a tendency to revert to an undesirable form it is ruthlessly rouged out and replaced. It is from these selected plants that our trained cutting crews collect cuttings. From that point on, careful records are kept on the progress of that particular lot of cuttings until they reach the finished product stage.

After a cutting is rooted and potted, the training of that particular plant starts. It is fed at regular intervals so that a constant source of plant food is always available. It is pruned as is necessary, to keep it in the desired form. When a large enough root system has developed, the liner is then ready for canning. Some of the slower growing items are shifted into the next larger size pot and grown for a longer period before they are put into the gallon container. We have six basic potting mixes. When plants are shifted, from pots to cans, they are placed into the soil mixture best suited for its continued growth and good health.

Soil for our canning operation is mixed in large quantities by a small clamshell and is then repiled so that a thorough mixing is accomplished. During the mixing operation water is sprayed over the pile so that the soil is neither too wet nor too dry. It is then ready to be used in the canning operation and is loaded by a skip loader into a bin located at one end of our canning machine. The soil mixture is put into the cans by hand, as we have not been able to find or devise a satisfactory machine for automatic filling of the containers. After the containers are filled to the proper level with the soil mixture, they are put on a roller conveyor that takes them to the canning machine.

The canning machine is a hydraulic press operated by compressed air that has a die slightly smaller in diameter than the one gallon container. The die packs the soil and at the same time punches a hole in the soil the proper size for either the two or three inch liner being canned. The liners are assembled in an area immediately adjacent to the canning machine. The liners are then tapped out of the pots by one man and dropped into the hole made by the die and hand firmed by another worker. The container is then put on another conveyor that ends in an accumulating table. There the containers are put on a jeep drawn trailer that can handle two hundred, one gallon containers at a time. The jeep hauls the trailer to the area in the nursery where the plants are to be grown. Each jeep has three trailers assigned to it, one being loaded at the canning machine, one that it is hauling

and one that is being unloaded. Upon reaching the unloading area a jeep leaves the loaded trailer, picks up the unloaded trailer and returns to the canning machine where a loaded trailer is ready to be taken away. We find a canning crew of 10 people, including all of the above operations, can handle from 10,000 to 12,000 containers a day.

The two gallon, and five gallon or egg canning operations at our nursery are done by hand. The soil is put in the containers with shovels, compacted and the hole punched by a hand machine. In the meantime, a small crew has been removing plants from one gallon containers by inverting the can and tapping it against a solid object. If the soil in the one gallon container has been thoroughly watered it will come out of the container without any disturbance of the root ball. In some instances the can is cut away, especially when grafted plants are being canned into a larger size container. The same type of jeep drawn trailer is used in this operation as has been described for the one gallon canning operation.

The general conception of a finished plant in California is one that is bushy and well filled out rather than a plant that has been allowed to grow without much pruning. By the time a one gallon container grown plant has reached the finished stage, we have pruned it at least ten times and this figure is almost doubled when it is grown on in the five gallon container..

The procedures of container production outlined in the foregoing are the procedures followed by the Monrovia Nursery Company. The other growers of nursery stock in California all have their own methods of growing their stock to the finished product. Also the Monrovia Nursery Company has a full time research director who keeps a very close check on all phases of production, from the cutting or seed to the finished product.

MODERATOR TURNER: Thank you, Mr. Lee. Since we should follow the procedure that has prevailed here, we will reserve ample time at the end of these discussions for questions. So without further loss of time, I would like to introduce Mr. Arthur Lancaster of the Coleman Nursery, Portsmouth, Virginia.

Mr. Lancaster presented his discussion on container culture in Maritime Zone 8. (Applause)

**CONTAINER CULTURE IN MARITIME ZONE 8:  
ITS SIGNIFICANCE TO MORE NORTHERN LATITUDES**

MR. A. J. LANCASTER, JR.  
*Coleman Nursery  
Portsmouth, Virginia*

Thank you, it is indeed a pleasure to be with you folks.

First I would like to spend a moment on the conditions that exist in our area where we are growing about 95 per cent of our stock in containers. It is an area which has rainy weather, cold weather, warm weather, and hurricanes, except for this year. It is a land, as far as