

## Sharing Simple, Inexpensive Ideas From Nursery Producers<sup>®</sup>

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Nursery producers are farmers that are known for their independence and have made their successes through conservative money management and carefully “growing into their businesses.” Most nurseries are small family operations and not backed by large corporate investors. They have had to be very innovative and frugal in developing their businesses. The following is a collection of 23 practical, inexpensive ideas that nurseries have developed to help their nurseries compete successfully.

Some times descriptions of these innovations do not offer a complete vision of the ideas. Photographs of each of these ideas and some additional ones that time and space did not allow are available on-line at <[www.ag.auburn.edu/landscape](http://www.ag.auburn.edu/landscape)>; from this page look for the “Ideas” button.

The nursery industry is very important to the economy of Alabama. It is the number one economic agricultural crop. Over 850 nurseries and greenhouses generate \$250 million wholesale farm-gate dollars (\$1.4 billion ZAR) to the state’s economy. When these wholesale dollars flow through the retail, landscape, and maintenance sector to the consumer, the economic impact of the green industry is 1.9 billion dollars (\$11.3 billion ZAR).

Since most nurseries are small businesses and cannot afford the luxuries of potting machines or expensive equipment for moving large numbers of plants, they are forced to use their imagination to cope and minimize labor costs.

To compete with the more efficient larger growers, they look for niches and serve a specialty or local market. They also “make do” or use the resources they have available to cut costs and at the same time increase their efficiency and quality.

- 1) In earlier times, small nurseries could rightfully claim higher quality and offer that defining advantage to their customers. In those times, larger nurseries were known more for their plant skills than business skills. However, through competitive necessity large nurseries became more business minded and discovered one answer to quality. A business axiom was heeded that said, “If no one is responsible, no one is accountable.” From this business principle came the practice of dividing the nursery and assigning segments and responsibility for quality to responsible managers. Accountability yielded quality. This is a universal idea for big and small nurseries.
- 2) McCorkle Nursery, a mid-sized to large nursery in Dearing, Georgia, implemented the principle of “keep it simple” for their workers. Once required space was calculated for a crop, the nursery painted lines on the ground cloth of the growing pad to accommodate the planned number of pots. No repeated calculation and adjusting needed to be done. Most southern nurseries place their containers “pot-to-pot” until top growth shades the containers, avoiding excessive heat on the roots. Pots are then spaced. Lines

are drawn to allow the labor to fill pots between the lines, and appropriate space is allocated for spacing at a later date. Most labor in a nursery is involved in the repetitive task of moving containers from place to place. Anything that reduces this activity saves time and money.

- 3) An old idea adopted by most nurseries is building a manifold of multi-rows of evenly spaced irrigation heads fitted with water-breaker nozzles so that a wagon or cart of newly planted containers can stop briefly under this shower manifold and be watered thoroughly before going to the field container pads. There is no similar commercial product available. Each nursery creates their variation of this irrigation apparatus.
- 4) Most small nurseries cannot afford substrate mixers at a cost of \$5,000 to \$10,000 (\$30,000 to \$60,000 ZAR). They either purchase pre-mixed substrates or use a front-end loader to incorporate media components and additives. Nursery producers are notorious for finding someone else's junk and putting it to use. Old out-of-service cement mixers were salvaged and put back into service blending container substrates. They were too old for the abuse of mixing concrete but have greatly extended life mixing lighter materials, like pine bark and peat moss.
- 5) From the mixer to the containers works easier if you let gravity do the work. Nurseries have long used hoppers of various shapes and sizes to funnel substrates onto a potting bench. Many nurseries find this as efficient, or more so, than potting machines that require up to 13 people to keep them running smoothly. Certainly the smaller grower uses these hoppers to their advantage.
- 6) Rigsby Nursery in Ft. Myers, Florida, mounted a hopper on a truck bed and took it to the field to fill pot-in-pot containers. It worked well for their system.
- 7) Transplant Nursery in Lavonia, Georgia, used back yard engineering skills to make a potting machine. A conveyer system feeds substrate to a round hopper atop a merry-go-round/whirligig apparatus that has double offset circular wooden benches rotating around a central pivot pole. The upper inset ring has half-moon cutouts that allow the individual doing the potting to place the container on the lower outer ring and nest it into the half-moon cut-out and pull the gravity fed media into the pot from the central hopper above. After potting, the wheel is rotated and the pots are removed by another worker on the opposite side of the circle who puts them on a wagon to be watered-in beneath the irrigation manifold before going to the field container bed. (Many words to describe a simple machine; see web site.)
- 8) A "chuckwagon" was a covered, horse-drawn wagon in the days of the old west that was famous for carrying everything that was needed for a family or a group of cowboys to make a long trip across country. Bill O'Meara of Bochancee Nursery in Huntsville, Alabama, made this concept work in his nursery. He became

frustrated with the workers' constantly coming back from the field because they forgot something or needed to refill their spreaders or spray tanks. He developed several chuckwagons that held all the supplies needed for pruning, spraying, spreading fertilizer, or digging B&B plants. For instance, a fertilizer or herbicide chuckwagon would have large bins containing the chemicals with side openings so that the spreaders could be refilled in the field without returning to get a new bag. All the spare parts and tools are included on the wagon and are restocked at the end of the day. The backpack sprayer wagon would have 50-gal tanks of various pesticides and also included extra backpack sprayers, spare nozzles, safety equipment, materials data safety sheets, and a clean tank of water for rinsing the sprayers after spraying was completed.

- 9) Ideas emanate from frustration. One grower became very impatient when he or his employees spent long idle moments at the end of a garden hose filling a 50- or 100-gal sprayer. From the old steam engine train water towers, Transplant Nursery got the idea to build a wooden water tower holding a 200-gal tank with a simple commode floating ball valve to automatically refill the tank as a 4-inch line quickly filled the spray tanks.
- 10) Continuing in the water theme, many nurseries have installed high humidity mist chambers or put a couple of mist heads in the propagation cutting prep and sticking area to maintain the vitality of the cuttings while waiting to be stuck.
- 11) Another labor-saving idea for irrigation is to add one female adaptor about 1 ft up from the base of the irrigation riser so that if a taller or shorter crop is grown, the grower has the flexibility to easily replace or adjust the height of the riser without the hassle and expense of cutting and gluing a new riser or accepting a riser that was not the appropriate height for the plants being grown.
- 12) If you cover and uncover your plants with plastic or some other over-wintering material as temperatures fluctuate, you may appreciate the adaptation installed by Buddy Martin of Martin's Nursery in Semmes, Alabama. He installed permanent 6-inch nailer boards that serve as spacer guidelines as well as offer a stapling surface for easy covering and uncovering to adjust to fickle weather swings.
- 13) Each nursery is different and evolves a production system that meets their needs and the needs of their customers. Some nurseries like to fill all their containers and set them on the growing pads and pot the liners directly in the field. They have developed an auger with a 4-inch liner-sized head that can be set into a battery- or electric-tethered drill that is used to quickly dibble/drill holes for the planters to insert the liners.
- 14) The origin of lawn mower mounted pruners is unknown but widely adopted in some form. One or two height-adjustable mowers are mounted on a rolling base that is moved over the plants which prunes the plants evenly and quickly. Some permutations of this

device include mounting an electric or battery-powered hedge trimmer onto a bicycle chassis or wheelbarrow frame. Handles are adjusted to allow the proper pruning height.

- 15) There are large numbers of variations of container designs, and most can be worked successfully into a production program. Nested pots, or a smaller pot “nested” inside a larger base pot, offer plants such as rhododendron or dogwood trees, which have heat sensitive roots, protection from the extreme exposure to southern heat stresses. Rebar or metal poles are often run through the base container holes at perpendicular angles to offer stability to the nested plants.
- 16) Dr. Bryson James, a long-time member of IPPS and a nursery consultant, observed that if the feeder tubes, which often are chewed on by rodents or rabbits, were fed vertically through the lip of the base container and connected to the riser in the nested container, mice and rabbits were deterred from chewing.
- 17) Along these same lines, growers have often been disappointed when planting large quantities of seed only to find them missing due to night attacks by mice. Dr. Carl Whitcomb offered his cure to the problem by simply hanging a 2-inch × 4-inch frame from greenhouse supports and placing the flats across the frame, leaving no access for the mice.
- 18) Bob Rigsby of Rigsby’s nursery invented and patented the EFC container or raised hole container. It was a simple concept of moving the holes of the container about 1 inch above the base of the container creating a reservoir of water. This reservoir prevented rooting-down into the soil. It also reduced run-off and held fertilizer longer, increasing growth of some plants.
- 19) How do you carry large containers for 8 to 10 h a day or how do you manage a 10- to 50-gal container as you get older? The inventor of the Pot Hog and Oink is not a nursery producer but an allied company with an interest in nurseries. He developed this hand-truck-looking device with claws allowing leverage to easily lift and move large containers. He made hand-held grips that offer easy lifting without bending and with a grip that is kind to the fingers. See <[www.tmateo.com](http://www.tmateo.com)> to get the clear picture of this very helpful device.
- 20) Lancaster Farms, a very innovative nursery in Virginia, showed us a flat carrier while on an IPPS tour. It is a reverse “C-shaped” handle with a double-pronged fork on the bottom of the “C” and a handle on the upper side. The fork slides easily under the full length of the flat allowing the employee to easily carry a flat in each hand.
- 21) As with the earlier cited idea of marking container ground beds to avoid continued calculations and counting, other areas of the nursery can be similarly simplified. If you use the same pesticide concentration, fertilizer parts per million, container substrate mix, or growth regulator application rate, do not redo your work every

time you apply. Make a menu for your employees and give them pre-weighted volumes to eliminate that step. Use color codes and labels to make it simple and mistake proof.

- 22) It helps to have talented welders and builders on the nursery. The arduous task of covering greenhouses became easier when a nursery built a metal platform on skids that could be pulled by a tractor from greenhouse to greenhouse. Employees could easily be at the top of the houses to pull plastic and cover the houses.
- 23) Small nurseries should begin labeling everything as soon as they build the first greenhouse or container pad. It helps for inventory and directing new employees and customers to the right place. It is an obvious advantage but amazing that nurseries get so comfortable with their surroundings that they do not notice. Take pictures of your nursery sometime from all angles and see what you are missing in your own nursery.

Most of these ideas come from tours during plant propagators meetings. You learn and profit when you become an involved member of IPPS and follow the motto “Seek and Share.”

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## Specialisation — Advantages and Disadvantages Compared®

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Over the past 50 years there have been a number of changes in the nursery trade. One of the most significant is the trend towards specialisation in one form or other. On my own nursery in the late 1970s we grew conifers, shrubs, roses, alpines, and heathers, covering over 1,000 cultivars, and sold to both wholesale and retail customers. The nursery now covers 10 times the area but we only grow heathers, less than 10 species, around 100 cultivars, three pot sizes, only two compost mixes, and are strictly wholesale only. Based on our own experience and those of other nurseries that I have visited, the following are some of my observations.

### ADVANTAGES

- **Simplicity** — Less complicated production schedules are easier to understand, easier to implement, and easier to monitor. Less skilled staff can still achieve good quality work.
- **Better labour planning** — Annual peaks and troughs are more predictable if the production schedule is simple.
- **Mechanisation** — The volumes of each job become large enough to justify investment in specialist equipment.
- **Knowledge** — It is better to focus on a specific skill or genus and become an expert than to be jack-of-all-trades and master of none.
- **Reputation** — If you can become the acknowledged expert in your field and the nursery can gain a reputation for quality and reliability the demand for your plants will increase.