

# Air-Conditioned Cutting Room and Other Facility Enhancements<sup>®</sup>

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## INTRODUCTION

D&B Plants offers potted starter plant material from woody ornamental taxa. The nursery is located in southeastern Michigan, with a customer base in the Midwest and eastern states. The following will be a brief discussion on the use of air conditioning and floor heat in our cutting room, and other facility enhancements.

## METHODS

Cuttage production using several softwood rotations, and a single winter hardwood rotation, produced approximately 1 million propagules through the 2004 season. Summer cuttings are gathered early in the morning between 5:30 AM and 8:00 AM. Trimmings from multiple varieties are gathered by hand clippers or with power shears from production or mother plants, placed in plastic containers, labeled for identification, watered, and stored in a cool location for the day's work.

A work crew consisting of one to seven women will work up the wood to create 4,000 to 20,000 cuttings within our cutting room. Cuttings are created by stripping lower leaves, trimming upper leaves, and removing the terminal bud. Liquid hormone, and if needed, powder hormone is applied, and the cuttings are placed in pans where they are taken to a sticking table, inserted in plug trays filled with a media of pine bark, coir, peat, and perlite. Plug trays with new cuttings are placed in a sanitized area and subject to 2-sec mist bursts at 2-min intervals. The interval between misting is increased over a 2 or 3 week time frame. Rooted trays of cuttings are then removed from the propagation chamber and placed in a hardening-off area, which is protected by 80% or 90% shade. The shade opacity is reduced over the course of 2 or 3 weeks until plants are under 30% shade. Fertilizer solutions are initiated soon after placement in the hardening-off area.

## FACILITIES

Placement of the cutting room within the gutter-connect greenhouse structure, which also holds the propagation chamber, reduces travel distance for the employees as they move from work area to sticking table. A central bay of the greenhouse is partitioned off with an internal wall of fiberglass sheeting. The stud-walled cutting room is insulated, has an internal window, and hot water piping through the slab concrete floor. A small air-conditioning unit is placed in the window of the 14 × 20 ft room during the summer months. Maintaining a summer daytime temperature of 75 to 78 °F, and a winter daytime temperature of 67 to 70 °F increases employee efficiency and comfort, while reducing heat stress on the cutting wood as it is being worked up. Heating the concrete slab is less harsh on the exposed plant material than convective heaters.

Cutting wood is placed on the cutting table, a soggy bushel or two at a time. The water run-off from the cutting wood may damage table surfaces, as well as creating an unpleasant work environment for employees. Next season we will be working on a hybrid table/sink that drains in the center.

Other facility enhancements include a sticking table consisting of expanded metal sheeting, framed with angle iron, and extended with chain. When the table is not in use, chains are removed allowing the tabletop to swing to a vertical position, creating a wider thruway for traffic flow.

## CONCLUSION

The nature of our industry's tedious handwork creates health issues that can often be reduced by creative methods and facilities. The use of air-conditioned and heated work areas increases employee comfort, reduces plant stress, and increases productivity.

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## On-Demand Color Label Printing System<sup>®</sup>

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In retail garden centers, it seems the need for an informational picture label accompanying the plant is as important as the quality or size of the plant itself. I have been told by some of our garden center customers that plants with quality picture labels will outsell plants without picture labels. Retail consumers can be easily swayed to choose the plant with the pretty picture label over plants with no labels or labels that contain only text. In recent years it has become the responsibility of the grower to develop these labels and have them manufactured and printed by companies that specialize in this process, and then purchase and warehouse the labels that will be needed for the upcoming sales season. When all goes according to plan, then the system works satisfactorily, as long as someone with great attention to detail manages the process. However, minimum order quantities of labels, changes in production, liner substitutions, and changes in consumer trends, often create a surplus of outdated labels. Labels that were paid for, but will never be used, is not a profitable thought.

To better serve our garden center customers, we knew we needed to supply them with color picture labels, but we wanted to find a way to do this without inventorying thousands and thousands of preprinted labels. Our goal was to develop a system to print color picture labels by order at time of order collection. We felt the benefits of such a system would be to eliminate the need for a warehouse full of preprinted labels and someone to run it, eliminate the accumulation of outdated labels, and be able to purchase only blank label stock. With the technological advancements of thermal printers and computer software, we have been able to develop such a system.

The system consists of an Astro-Med QLS-4100 Xe thermal printer and an air compressor, color images, blank label stock and color ribbons, our main computer system and database, and customized software to interface with the printer.

Astro-Med is a leading manufacturer of color label printing systems, life science instrumentation, and specialty data collection systems. Quick Label Systems is the name of their label printer division, and their printers are often used on food and beverage, automotive, and biomedical products. The printer can run from a standard Windows program or custom software, and costs approximately \$18,000. It can print at a speed up to 7 inches per sec and uses a thermal transfer process over four-color ribbons, (magenta, cyan, yellow, and black). To make it possible to print at this speed, the color images are stored in the printer on a 256-megabyte flash card, and one card can store over 1000 images. The air compressor pneumatically lifts the print heads of the magenta, cyan, and yellow ribbons when the print routine only calls for black, thus saving the expensive ribbons.