

COMPUTER GENERATED SIGNS FOR DEMONSTRATION GARDENS

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Abstract. A common problem associated with small demonstration gardens, as well as large botanical gardens, is the lack of clear and easy to read plant labels. Even if the plants are labeled with a name, there often is little to no specific information about the plant, such as its origin, mature size, light requirements, pH preference, and other notable points of interest. Polk County Cooperative Extension Service has implemented and maintained an inexpensive and educational plant labeling system for its demonstration gardens. The Polk County Demonstration Garden was developed in 2003 under the auspices of the Florida Yards and Neighborhoods Program and the Master Gardeners of Polk County. Ladder posts, display cards, and laser labels were purchased from garden supply vendors. The desired plant information was printed onto the laser labels with a standard computer and laser printer and applied to the display cards. The ladder posts, with the display cards, were then inserted into the ground in front of selected plants. The laser labels were large enough to accommodate several lines of information about the plants and could easily be read by a visitor standing a short distance away. The ladder posts, display cards and labels have proven to be durable and even washable. If one is lost or stolen, it can be quickly and inexpensively reproduced and replaced.

After visiting many botanical gardens, one may conclude that it is quite difficult at times to find and read plant labels. They may be so small that one has to completely bend over to read the fine print. Sometimes the label has both common and scientific name, but often only the common name is given. Plant labels usually have little to no pertinent information about the plant, such as origin, mature size, pH preference, salt tolerance, drought tolerance and light requirements. Plant labels are often not uniform, e.g., some may have large print, some small print, some handwritten on plastic stakes, some on engraved metal posts, and some may be on a plastic tag attached to a branch. Plant labels may be at times totally missing.

The Polk County Master Gardeners, the Polk County Florida Yards and Neighborhoods Coordinator and the Residential Horticulturist decided to develop a plant labeling system for our demonstration gardens using signs which would be easy to find and read, durable, inexpensive, educational and uniform. A search was conducted for such signs. Dr. Rick Schoellhorn, Floriculturist at the University of Florida, IFAS and several producers of garden supplies were contacted for information. It was their suggestions (R. Schoellhorn and unnamed employees of Gardenware, Gearhart, Ore.), plus our own ingenuity, which were used in the development of plant labels for our demonstration gardens.

Materials and Methods

The labels were basically composed of three parts: a wire stake, a plastic-coated display card and a laser label. Eight and 16-inch wire marker stakes were used for the base of the label. They were fabricated of durable nine-gauge galvanized steel. The stakes may be purchased in five different lengths (8, 16, 24, 32, and 48 inches) and can be bent at an angle at the top to allow people to read the card without bending over. The stakes are galvanized, so the display cards can be changed and the stake reused over several seasons.

The display cards are made of 4-mm corrugated polypropylene, which will hold up for several years outdoors. Two different size display cards were used in our gardens: 7 inches wide $\times$ 5.5 inches tall, and 6 inches wide $\times$ 2.5 inches tall. These were the sizes which most conveniently matched up with the commercial laser labels. Only white display cards were utilized in our gardens, however the 7 $\times$ 5.5-inch cards can be purchased in eight different colors. By using multiple colors, the garden labels can be color coded to indicate a number of plant characteristics such as preference for sun/shade, mature size, and butterfly and/or hummingbird attractiveness, to name a few. For instance, yellow can be used for sun loving plants and green can be used for shade plants.

Full-sheet laser labels (8.5 $\times$ 11 inches) and label sheets containing two 6.5 $\times$ 5-inch labels were utilized for the Polk County Demonstration Gardens. The 6.5 $\times$ 5-inch labels fit nicely onto the 7 $\times$ 5.5-inch display cards, both of which are available commercially. However, the laser labels for the smaller 2.5 $\times$ 6-inch display cards had to be printed on full laser label sheets and cut into eight 2.5 $\times$ 5-inch individual labels.

A laser printer must be used to make these labels. A laser printer embeds the ink into the plastic, while an inkjet printer will smear the ink on the surface of the label and will not stand up to weathering. It seems that most black and white laser printers will work. As a rule of thumb, when buying a black and white laser printer, select one which prints slowly. We recommend a straight-feed printer on which the paper weight can be adjusted. More care will need to be taken when selecting a color laser printer. However, both the Okidata 7200 and Xerox 6250 reportedly work well (unnamed employees of Gardenware, pers. comm.).

To create and print our labels, we used a laptop computer (Compaq NX9010, Hewlett-Packard, Palo Alto, Calif.) with wordprocessing software (Word 2002, Microsoft, Redmond, Wash.) and a black and white laser printer (ML 1740, Samsung Electronics America's Information Technology, Irvine, Calif.). The process used to create two 6.5 $\times$ 5-inch laser labels is shown in Table 1.

These settings will create two pages on one sheet, and each page on each sheet will accommodate approximately ten lines of 22 point size lettering. The font and font size can be adjusted as necessary. A whole series of labels can be placed in one file, however a change in line spacing on one page will carry to all pages, so it is more practical to make a file for every sheet.

Laser labels were not available commercially for the 6 $\times$ 2.5-inch display cards, so full laser sheets had to be used and

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Table 1. Creating two 6.5 × 5-inch laser labels.

Microsoft Word Menu Bar Begin with File/Page Setup	Settings
Set margins	Top and bottom—0.3 Left and right—1.2 Gutter—0.4
Orientation	Portrait
Multiple pages	Two per sheet
Default setting	Paper
Page layout settings	Section start—continuous Headers and footers—0 Section direction—left to right Vertical alignment—top
Apply all settings	To entire document

cut to the desired size. The “Envelopes and Labels” feature of Microsoft Word was used to make the smaller labels. Necessary menu items needed to reach the “New Label” feature, plus settings for the 6 × 2.5-inch labels are listed in Table 2.

After the above settings are made, a blank label will appear on the screen. Right-clicking on the blank label will open the font menu. A label format then needs to be typed into the blank window followed by “Full page of the same document” and then “New Document” selections. A “New Word Document” will appear on the screen with the label format evenly repeated eight times—four lines per label. Plant information may then be entered onto the labels, edited if necessary, saved, printed and cut into eight sections and pasted on the display cards.

Discussion

Observations over the last three years indicate that many advantages have been gained through the placement of labels in the demonstration gardens. The pluses are not only in the level of information now regularly available, but also in the

ease of maintaining, expanding, and replacing plant labels as becomes necessary. What may seem easy to achieve to the casual observer is a process which takes nature into account; that is, to find an effective and ongoing way to “weather” the effects of nature on our signage. In compiling the benefits, we can list the following:

- 1) The labels are inexpensive to produce, costing under \$1.00 per label to replace.
- 2) The labels are very visible and easy to read.
- 3) They display much-needed educational information about the plants, making it available to diverse individuals and groups that visit.
- 4) If a color printer is used, attractive clip art can be included on the label.
- 5) They make a great training tool for educational programs like Master Gardener Training.
- 6) They appear to be very weatherproof, lasting at least three years.
- 7) The parts are readily available at horticultural supply companies.
- 8) Lost labels can be quickly replaced.
- 9) The laser labels are easy to make with word processing software.
- 10) The signs have other applications, such as labeling plants in nurseries, or for school field days.
- 11) If a more attractive sign is desired, then a different stake and display card may be used with the laser label.

In summary, the development and maintenance of an accurate and inexpensive labeling system for demonstration gardens is an objective which, when met, furthers the educational value of the gardens for the public, the staff, and volunteers-in-training at the Polk County Extension Service. It is, in fact, an invitation to visit the interior of the facility to become more familiar with the services and educational opportunities available to our public. To the extent that we continue this display of information, we indeed widen our impact on the community we serve.

Table 2. Creating eight 6 × 2.5-inch laser labels.

Microsoft Word Menu Bar Tools/Envelopes and Labels/ Options/Create settings for the new label	Settings
	Top margin—0
	Side margin—0
	Vertical pitch—2
	Horizontal pitch—5.5
	Page size—letter
	Label height—2
	Label width—5.5
	Number across—2
	Number down—4