

Chen, J., R.J. Henny, and D.B. McConnell. 2002. Development of New Foliage Plant Cultivars. p. 466–472. In: J. Janick and A. Whipkey (eds.), Trends in new crops and new uses. ASHS Press, Alexandria, VA.

## Development of New Foliage Plant Cultivars\*

**J. Chen, R.J. Henny, and D.B. McConnell**

\*Florida Agricultural Experiment Station Journal Series No. R-08541. The authors thank Mr. Bernie Albrecht and Ms. Shirley L. Zonner at the Florida Agricultural Statistics Service, Orlando, FL for providing information on foliage plant production and Ms. Kelly Price for critical reading of this manuscript.

### INTRODUCTION

Foliage plants, defined literally, would include all plants grown for their attractive leaves rather than for flowers or fruits. In general horticultural terms, however, foliage plants are mostly those with attractive foliage and/or flowers that are able to survive and grow indoors. Thus, they are used as living plants for interior decoration or interior plantscaping. Foliage plants, in common terminology, are called house plants.

Foliage plants from the world’s tropical or subtropical regions provide the basis for today’s foliage plant industry. From 1956 to 1967, *Aglaonema*, *Dieffenbachia*, *Dracaena*, *Epipremnum*, *Ficus*, *Peperomia*, *Philodendron*, *Sansevieria*, *Syngonium*, and plants from several genera of Palmae (palm) were the major players in the industry. *Philodendron* dominated all other genera accounting for 50% and 36% of wholesale values in 1956 and 1967, respectively (Smith and Strain 1976). In 1975, *Schefflera* and ferns (Polypodiaceae) joined the list of the Census of Horticulture Specialties of the US Department of Agriculture’s National Agricultural Statistics Service (McConnell et al. 1989). However, *Philodendron* was still the major genus, accounting for 20% of the wholesale value. In 1988, genus *Hedera* was added to the list (McConnell et al. 1989). The total market segment of *Philodendron* decreased from 20% in 1975 to 4.7% in 1988. No single genus exceeded 10% of the market value in 1988, suggesting increased diversification in foliage plant production. Ten years later, genera *Anthurium* and *Codiaeum*, as well as bromeliads (Bromeliaceae) and cactus (Cactaceae) were added to the 1998 list (USDA 1999). The wholesale value of foliage plants in the US increased from \$13 million in 1949 to \$574 million in 2000 (USDA 2001). The use of foliage plants for interior decoration or interior plantscaping has become an integral part of contemporary design, playing an important role in our life (Manaker 1997).

Florida has led the nation in the production of foliage plants, accounting for more than 55% of the national wholesale value since the 1960s. In addition to its favorable climate, Florida dominates the foliage market because Florida foliage growers continually introduce new genera and new cultivars to the market. This dramatically expands options for foliage plant usage in interiorscaping.

### NEW CULTIVARS

*Aglaonema*, *Dieffenbachia*, *Dracaena*, *Epipremnum*, *Ficus*, *Hedera*, *Philodendron*, *Syngonium*, and plants from several genera of Palmae and Polypodiaceae have been the backbone of the foliage plant industry for almost a half century. A key factor in their dominant position in the market place is the continuous influx of new cultivars, which keep consumers’ interest in these plants alive. Table 1 shows the change in the number of cultivars of *Aglaonema*, *Dieffenbachia*, *Dracaena*, *Epipremnum*, *Ficus*, *Philodendron*, *Syngonium*, ferns, and palms during the last 25 years. The new cultivars are developed through either traditional breeding or selection of sports from propagation.

**Table 1.** Changes in cultivar numbers of major foliage plant genera or groups in commercial production of Florida. Source: FNGA (Florida Nurserymen and Growers Association) Locator 1975, 1988–1989, and 1998–1999.

Foliage plant	1975	1988-1989	1998-1999
<i>Aglaonema</i>	10	17	36
<i>Dieffenbachia</i>	7	29	23
<i>Dracaena</i>	12	21	33
<i>Epipremnum</i>	3	4	4
Fern	10	21	54
<i>Ficus</i>	14	32	46
<i>Hedera</i>	7	12	40
Palm	7	19	22
<i>Philodendron</i>	16	24	18
<i>Syngonium</i>	7	14	17

The genus *Aglaonema*, collectively called Chinese evergreens, encompasses the most ubiquitous plants used in hotel lobbies, airport terminals, and family homes. The number of cultivars increased from 10 in 1975 to 36 at the end of the 1990s. In addition, cultivar release and cultivar retirement have occurred rapidly. For example, when cultivars listed in the FNGA (Florida Nurserymen and Growers Association) Locator 1998–1999 and 1999–2000 are compared, five cultivars listed in 1998–1999 were dropped, and four new cultivars were added in 1999–2000. Almost all new cultivars were developed through traditional breeding. The Bay series of *Aglaonema* cultivars is the result of many years of breeding and selection in R.J. Henny’s program at the University of Florida (Henny and Chen 2001). ‘Golden Bay’ is a white-stemmed cultivar and has very bright cream and green color variegation. ‘Emerald Bay’ has a white and green speckled stem. Sunshine Foliage World, Zolfo Springs, Florida, introduced 20 new cultivars developed by breeders in Thailand. These cultivars, including ‘Jubilee Petite’, ‘Peacock’, ‘White Rain’, ‘White Lance’, ‘Brilliant’, ‘Illumination’, ‘Black Lance’, ‘Green Lady’, ‘Patricia’, and ‘Stars’, have different sizes, shapes, and variegation patterns of leaves, and white, green, or pink petioles. ‘Emerald Star’ and ‘Jewel of India’ are two cultivars developed by breeders in India that, along with ‘Stars’, have been identified as highly tolerant to chilling temperatures (Chen et al. 2001a).

The genus *Dieffenbachia*, commonly known as “dumb canes,” is grown primarily for its multicolored foliage. The genus has about 30 species, but the most widely grown cultivars are selections from *D. amoena* and *D. maculata*. Through hybridization and selection of sports, the number of *Dieffenbachia* cultivars increased from only seven in 1975 to 29 in 1988–1989. It has stabilized at about 20 cultivars since then. Traditional breeding in R.J. Henny’s program at the University of Florida produced six released hybrids: ‘Victory’, ‘Tropic Star’, ‘Starry Nights’, ‘Star White’, ‘Star Bright’, and ‘Sparkles’ (Henny et al. 2002). These hybrids have different variegation patterns, large leaves with short petioles, and, in most cases, they produce basal shoots freely. The Tropic series ‘Tropic Breeze’, ‘Tropic Rain’, ‘Tropic Dawn’, and ‘Tropic Forest’ were bred by E.J. Frazer in Brisbane, Australia and introduced by Twyford International Inc., Sebring, Florida. Due to great genetic variation, sports from spontaneous mutations have been selected and patented as new cultivars. For example, ‘Tiki’ is derived from ‘Memoria Corsii’, and ‘Snow Flake’, a new cultivar in the market, was derived from ‘Tiki’.

The genus *Dracaena* encompasses about 40 species (Bailey and Bailey 1976), but only six species *D. deremensis*, *D. fragrans*, *D. marginata*, *D. reflex*, *D. sanderiana*, and *D. surculosa* (*godseffiana*) are commonly cultivated as foliage plants. These species are favored by interiorscapers because of the diverse shapes, colors, forms, and configurations that are available in the market place and because of their ability to survive under low-light conditions with minimum care. There is no organized program dedicated to *Dracaena* breeding, and the increase of cultivars, regardless of niches, is predominantly due to the selection of sports from cutting by growers. New cultivars include *D. deremensis* ‘Gold Star’, ‘Kerry’, ‘Lemon Lime’, ‘Lisa’, ‘Michiko’, ‘Michiko’, and ‘Warneckii Jumbo’.

Of the 10 listed species of *Epipremnum*, only *E. aureum* (pothos) is commonly grown as a foliage plant. Commercially, pothos is predominantly propagated through single or double eye cuttings, and tissue culture is not used. As a result, three cultivars ‘Golden Pothos’, ‘Marble Queen’, and ‘Jade’ have been in the market for decades. The only new cultivar recently released is ‘Neon’, a uniform yellowish-green colored foliage plant. The continued interest in pothos is largely due to its adaptability to interior conditions and versatility as a pot, hanging basket, or totem plant.

Boston fern (*Nephrolepis exaltata*) played a key role in the initiation of Central Florida’s foliage plant industry, because it was the first and almost only plant grown from 1913 to the early 1930s (Conover et al. 1973). Today other ferns being grown in Florida’s foliage industry include *Adiantum*, *Asplenium*, *Cyrtomium*, *Davallia*, *Nephrolepis*, *Platycterium*, and *Pteris*. Collectively, fern cultivars increased from 10 in 1975 to 54 in 1998–1999. New cultivars from the genus *Adiantum* are *A. hispidulum* ‘Bronze Venus’, *A. pedatum* ‘Finger Maiden Hair Fern’, *A. raddianum* ‘Fragantissimum’ and ‘Gracillimum’, and *A. tenerum* ‘Scutum Roseum’. Only ‘Cristatum’ is listed as new cultivar from *Asplenium nidus*. Six new cultivars from *Nephrolepis* are *N. biserrata* ‘Western King’, *N. cordidolia* ‘Ecuadorian Sword’ and ‘Timmi’, and *N. exaltata* ‘Emerald Queen’, ‘Smithii’, and ‘True Massii’. There are three new cultivars from *Pteris*; *P. cretica* ‘Toddler’, ‘Wilsonii’, and *P. quadriaurita* ‘Parkerii’. New cultivars of ferns are mainly derived through the isolation of sports from micropropagation.

*Ficus* is a genus of more than 800 species, and those used as foliage plants include *F. altissima*, *F. benjamina*, *F. binnedijkii*, *F. elastica*, *F. lyrata*, *F. microcarpa*, *F. pumila*, *F. retusa*, and *F. rubiginosa*. Historically, there were only one to three cultivars from each genus in 1970s. Now more cultivars are in the market due mainly to the isolation of sports. For example, *F. benjamina* ‘Monique’ and ‘Wiandi’ were sports of *Ficus benjamina* ‘Exotica’ and ‘Natasha’ respectively and selected by Huub van Diemer in Holland. *F. benjamina* ‘Indigo’ and ‘Midnight’ were sports of *F. benjamina* ‘Exotica’ selected by Jan van Geest in Holland. These new cultivars were introduced to the US by Miami Agra-Starts, Inc., Homestead, Florida. Additional new *Ficus* cultivars include *F. benjamina* ‘Midnight Princess’ and ‘Too Little’, *F. binnendijkii* ‘Ali’, ‘Amstel King’, and ‘Sabre’, and *F. elastica* ‘Cabernet’, ‘Sylvie’, and ‘Melany’. These new cultivars not only offer appealing aesthetic appearances, but also perform much better under interior low light conditions than *F. benjamina* ‘Common’ (Chen et al. 2001c).

*Hedera helix*, commonly called English ivy, is the only *Hedera* species widely used as a foliage plant. Leaves in various sizes, shapes, colors, and patterns of variegation make it an important house plant. For the last hundred years, it has been used as a small potted plant for desks, coffee tables, plant stands, windowsills, and hanging baskets. There are more than 50 cultivars available in Florida; new cultivars include ‘Adams Choice’, ‘Angel Snow’, ‘Bettina’, ‘Big Shot’, ‘Curly Locks’, ‘Fanfare’, ‘Francis’, ‘Hester’, ‘Jessica’, ‘Julia’, ‘Manda Crested’, ‘Manda Yellow’, ‘Nina’, and ‘Sara’. Most of the cultivars were developed through selection of sports from propagation.

The Palm family includes over 200 genera (Huxley 1994). Species from *Chamaedorea*, *Chrysalidocarpus*, *Howea*, *Phoenix*, *Rhapis*, and *Veitchia* are used as foliage plants. Although *Chamaedorea* and *Chrysalidocarpus* are propagated through seeds, there is no active breeding program involved in genetic improvement of these plants. Therefore, the number of cultivars has not changed greatly since 1988.

*Philodendron* has two distinct phenotypes. The first is the vining type with heart-shape leaves, best represented by *P. scandens*. The second is the self-heading type, which include *P. auriculatum*, *P. deflexum*, *P. bipinnatifidum*, and *P. selloum*. From the 1950s to the early 1970s, *P. sandens* was the most popular foliage plant and dominated foliage plant sales. As consumers’ interest in *P. scandens* waned after the late 1970s, the percentage of *Philodendron* sales dramatically declined. In the last 20 years, a series of self-heading *Philodendron* hybrids with red, yellowish, or orange foliage have been released from R.H. McColley’s traditional breeding program at Bamboo Nursery in Apopka, Florida. These include ‘Autumn’, ‘Black Cardinal’, ‘Imperial Green’, ‘Imperial Red’, ‘Moonlight’, ‘Prince of Orange’, ‘Red Empress’, and ‘Red Emerald’. The production of these plants has renewed interest in *Philodendron*.

Thirty-three species are recognized for *Syngonium* (Croat 1982), but only *S. wendlandii* is propagated through tissue culture for the Florida foliage plant industry in its native phenotype. The remaining plants are either hybrids or sports of hybrids (Henley and Robinson 1993). Many of the currently popular cultivars are selections from *S. podophyllum* or hybrids of the species. New cultivars include ‘Berry Allusion’, ‘BOLD Allusion’, ‘Julia Allusion’, ‘Mary Allusion’, ‘Bob Allusion’, ‘Pink Allusion’, ‘Key Lime’, ‘Regina Red’, ‘Cream’, ‘Holly M’, and ‘Neon’, which are sports selected through tissue culture by Agri-Starts, Inc., in Apopka, Florida.

### NEW PLANTS

New plant introduction has been another important factor that incites the growth of the foliage plant industry in Florida. The genera listed below are becoming or will become important new players in the foliage plant industry. Some of these plants are obscure, some are well known but have been improved in new morphological forms, and others are collected from the wild. Those include *Alocasia*, *Anthurium*, *Spathiphyllum*, *Zamioculcas*, *Calathea*, *Schefflera*, bromeliads, and *Phalaenopsis* (Table 2).

**Table 2.** New foliage plants and selected cultivars in commercial plant production of Florida.

Family	Genus	Cultivar
Araceae	<i>Alocasia</i>	Black Stem, Corozon, Elaine, Fantasy, Frydek, Grandis, Lowei, Nobilis, Polly, White Knight, Wentii
	<i>Anthurium</i>	Gemini, Kingston, Krypton, Lady Ruth, Lady Carmen, Nicoya, Pacora, Pura Vida Red, Red Hot, Showbiz, Smalltalk, Sundial, Tropic Fire, White Frost
	<i>Spathiphyllum</i>	Hi Ho Silver, Alpha PPAF, Baby Face, Calipso PPAF, Ceres, Codys Color, Denver, Domino, Flower Power, Green Velvet, Leprachaun, Litter Angel, Mini, Sensation, Sierra, Silver Streak
	<i>Zamioculcas</i>	<i>Zamioculcas zamiifolia</i> cv. ZZ
Araliaceae	<i>Schefflera</i>	<i>Schefflera actinophylla</i> cv. Connie <i>Schefflera arboricola</i> cv. Coveen, Covette, Emerald Green, Gold Capella, Goldfinger, Henrietta Luseane, Moose Foot, Nora, Renate, Trinette, Worthii
Bromeliaceae	<i>Aechmea</i>	Deleon, Eileen, Fia, Friederike, Fulgens, Ghost, Inca, Maya, Morgana, Superb
	<i>Cryptanthus</i>	Elaine, Red Star, Yoshino
	<i>Guzmanala</i>	Apache, Claret, Clementina, Conifera, Denise, Eloy, Empire, Gwendolyn, Hilda, Huron, Irene, Lance, Lipstick, Luna, Major, Mandarin
	<i>Neoregelia</i>	Devro, Flandria, Martin, Perfecta, Piccillo, Raphael, Ultima, Victoria
	<i>Tillandsia</i>	Anitia, Medusae
	<i>Vriesea</i>	Annie, Barbara, Charlotte, Christine, Ella, Gigantea, Ginger, Isabel, Margot, Marleen, Poelmanii, Splendens, Tiffany
Liliaceae	<i>Chlorophytum</i>	<i>Chlorophytum orchidantheroxides</i> cv. Fire Flash
Marantaceae	<i>Calathea</i>	Artic Blush, Helen, Corona, Cynthia, Ellipse, Loeneri, Maria, Medallion, Picta Royale, Rosy Roseo Picta, Tigrinum, Wilsons Princep, C. ecuadoriana Velvet touch, <i>C. fasciata</i> , <i>C. majestica</i> , <i>C. orbifolia</i> , <i>C. ornata</i> , <i>C. roseopicta</i> , <i>C. rotundafolia</i> , <i>C. rufibarba</i> , <i>C. undulata</i> , <i>C. vittata</i>
Orchidaceae	<i>Phalaenopsis</i>	<i>P. aphrodite</i> , <i>P. schilleriana</i> , <i>P. cochlearis</i> , and various hybrids: Crownfox Delicious, Crownfox Sugarloaf, Tai Plantation, Elaine Taylor, Glen Ridge

*Alocasia* has not been considered an important foliage plant and was not included in a recent book *Topical Foliage Plants: A Grower’s Guide* (Griffith 1998). Now, cultivars with different colors, shapes, and sizes of leaves have been developed with unique variegation patterns in 10-, 15-, 20-, and 35-cm (4”, 6”, 8”, and 14”) pots are available. In addition to *A. amazonica*, *A. guttata*, *A. plumbea*, *A. odora*, *A. sanderiana*, and *A. sinuata*, the cultivars listed in Table 2 are sports selected from tissue culture, primarily by Agri-Starts, Inc. Apopka, Florida.

*Anthurium* is a familiar genus but traditionally has been used for cut flowers. With the introduction of compact interspecific hybrids through breeding, a series of potted *Anthurium* cultivars have been released from the breeding programs of R.J. Henny at the University of Florida (Henny 1999; Henny and Norman 2001) and H. Kamemoto at the University of Hawaii (Kamemoto and Kuehnle 1996). Oglesby Nursery in Altha, Florida released the Lady series of dwarf cultivars that also contributed greatly to the potted *Anthurium* industry. Research has shown that *Anthurium* is the most interior-flowering foliage plant (Chen et al. 1999). This is because more able to grow and flower continuously under interior conditions with 100 foot candles (16 mmol m-2 s-1) for three years (Chen et al. 2001b; Chen and Henny, unpubl. results). There is no doubt that *Anthurium* cultivars will soon be some of the most popular foliage plants.

*Spathiphyllum* is another flowering foliage plant genus and currently ranks among the top three plants in the Florida foliage industry. Its popularity is warranted because (1) its attractive dark-green leaves contrast dramatically with the showy-white inflorescences; (2) it can be induced to flower year-round through the application of gibberellic acid (Henny 1981); and (3) it has diverse cultivars. In 1980, there were only six cultivars, but now more than 50 are available, which provides a large selection in pot and plant sizes. Examples of this diversity include ‘Baby Face’ in 8-cm pots and ‘Sensation’ in 43-cm pots to reach different market niches. Finished plants are widely used for interiorscaping. New cultivars are derived from traditional breeding as well as the selection of sports from tissue culture.

*Zamioculcas* has only one species: *Z. zamiifolia* (Brown 2000), commonly called as ‘ZZ’ plant. It is a stemless herbaceous perennial, native to South Africa. Several stout fleshy stalks bearing alternate pinnate leaflets arise directly from thick horizontal rhizomes. It looks similar in shape to a cycad, thus it is sometimes known as the cardboard palm. In addition to its unique appearance, it has no apparent limiting insect or disease problems under interior conditions and is extremely tolerant to low light and drought. This plant grew slowly and maintained its aesthetic appearance during a four-month evaluation period under a light intensity of 4 mmol m<sup>-2</sup> s<sup>-1</sup> and no watering (J. Chen and R.J. Henny, unpubl. results). We believe that ‘ZZ’ plants will become a popular addition to the foliage plant industry.

*Calathea* is a genus with about 100 species native to tropical regions of the Americas. In 1975 only 3 species, *C. insignis*, *C. makoyana*, and *C. roseo-picta* were commonly grown. Today 25 species and cultivars are listed in the FNGA Locator, 1999–2000. Most of these plants were developed from sports selected during tissue culture and are available from Agri-Starts, Inc. and Twyford Plant Laboratories, Inc.

*Schefflera actinophylla* was introduced to the foliage plant trade by Robert Scully Sr. of Hogshead Nurseries in Apopka, Florida. He was the first to grow it commercially from seeds. Seeds of *S. arboricola* were first imported by Ron Huroff of California in the late 1960s from Taiwan (Griffith 1998). The use of *S. actinophylla* and *S. arboricola* as small interior trees has elevated the genus *Schefflera* to the status of the second most important interior tree genus next to *Ficus*. This is because more than a dozen new cultivars were released mainly from the selection of sports. *S. arboricola* is umbrella-like in appearance, dwarf in habit, and freely branching. These cultivars offer different forms, styles, and sizes of plants with various variegation patterns of foliage.

Bromeliads were not listed in 1988 as a group of major foliage plants, however, they have increased to 5.1% of the total foliage plant wholesale value in 1998 (USDA 1999). The family Bromeliaceae has about 40 genera containing more than 2,000 species. Bromeliads grown as foliage plants mostly come from the genera *Aechmea*, *Cryptanthus*, *Guzmanala*, *Neoregelia*, *Tillandsia*, and *Vriesea* (Table 2). The recent rise of bromeliads as popular foliage plants is largely due to their exotic appearance, graceful symmetry, flamboyant bloom year round, low maintenance in production and in interior conditions, and diverse cultivar selection. It is estimated that there are several thousand hybrids developed through traditional breeding programs. Bromeliads will certainly become a dominant group of foliage plants.

*Chlorophytum orchidantheroxides* ‘Fire Flash’ was collected from Thailand but has not been described in Exotica or Tropica. The shape is similar to other members of the *Chlorophytum* genus, but it has a wide, ovate lanceolate leaves and orange-pink (coral) midveins. The leaves are parallel veined and light, glossy green with a bright rosette pattern. The flowers are white in a dense cylindrical panicle partially hidden by the foliage. The inflorescence does not add any value to the aesthetic appearance. In fact, it is detrimental. Removal of the inflorescence at an early stage of flowering improves plant growth (J. Chen and R.J. Henny, unpubl. results).

*Phalaenopsis* may not precisely fit the classical definition of a foliage plant. However, it is used primarily for interior decoration or interior plantscaping, because it has attractive flowers and is able to grow indoors. Traditionally, low light adapted orchids have been listed among house plants. Current interest in *Phalaenopsis* occurs because it is a fast-growing orchid in greenhouses, stays in bloom for more than four months, and flowers may last 4 to 5 weeks under interior conditions (Wang 1997). *Phalaenopsis* production has increased dramatically, with the national wholesale value increasing from \$47 million in 1996 to \$70 million in 1999 (USDA 1998, 1999). The wholesale value of orchids in Florida was \$37 million in 2000, the majority consisting of *Phalaenopsis*. Most *Phalaenopsis* cultivars are hybrids introduced as tissue cultured liners from Taiwan or South Korea.

### NEW USES

As foliage plants are produced primarily for interior decoration or interior plantscaping, new end use will generate greater demand in production. New cultivar releases and new plant introductions provide products for new uses, and desire for novelty and new uses among consumers promote selection of new cultivars and introduction of new plants, which then increase production. This cycle helps explain why the foliage plant industry is one of the fastest growing segments of US agriculture.

- During the past decade, a major increase has been witnessed in combination planters that incorporate design elements specific to major holidays. Combination planters or dish gardens account for 6.2% of the total wholesale value in 1998 (USDA 1999). Usually two or more plants are planted in single pots based on resemblance, compatibility, or distinction of colors, sizes, or growth habit. Although they have been an important segment of the foliage industry for over 50 years, the plants used are new and the planting arrangement reflects the latest concepts in floral design. Plants used most are *Aglaonema*, *Anthurium*, bromeliads, *Codiaeum*, *Dieffenbachia*, *Dracaena*, *Epipremnum*, *Hedera*, *Sansevieria*, *Spathiphyllum*, and *Syngonium* cultivars.
- A continued desire for color in interior designs has resulted in a dramatic increase in flowering foliage plant production. Starting in the late 1980s, consumer demand for added color in interior plantscapes has been evident. This explains why *Anthurium*, bromeliads, cactus, *Phalaenopsis*, and *Spathiphyllum* production dramatically increased in a short period of time. The unique appearance, continuous growth, and flowering under interior conditions coupled with long-lasting flowers of these plants offer consumers an opportunity to incorporate year round color rather just the occasional color from traditional seasonal crops as chrysanthemums and poinsettias.
- Recent popularity of the “Bonsai” style generated increased interest in certain foliage plants. With the release of dwarf and miniature *Ficus*, such as ‘Too Little’, ‘Wiandi’, and *Schefflera arboricola*. Pseudo-Bonsai can be created in two to three years. Usually two Bonsai juniper or red maple and other plants with more than 10 years to develop. In addition, popularity of Feng Shui led to using stems of *Dracaena sanderiana* into Japanese miniature designs. Stalks (canes) or tips of *D. sanderiana*, commercially called ‘Lucky Bamboo’, were rooted in water or solution. After bud breaks, the canes or tips are placed into decorated vases. The canes can be straight, braided, curled, or wavy, also singly or combined to make various configurations.
- In addition to the need for small to moderate pot sizes of plants for use in homes, offices, churches, and retail outlets, large corporations, hotel lobbies, entertainment complexes, and malls require very large potted plants for use in interiorscaping. Usually *Ficus*, *Dracaena*, *Schefflera*, and palms are used. The increased use of large plants may account for the increased percentage of industry value shown by palms.

### CONCLUSION

The foliage plant industry has been enjoying steady growth with a wholesale value of \$574 million in 2000, an all time high. The future of the industry is bright as foliage plants fulfil a psychological need, enhance our interior environment, and provide recreational opportunities. Recently, construction has increased and more foliage plants will be needed. Most importantly, the foliage plant industry has established a better system or communication between production and consumption. New plants and new cultivars generate more demand and new uses. New uses, in turn, require new cultivars and new plants to be produced.

### REFERENCES

- Bailey, L.H. and E.Z. Bailey. 1976. Hortus III. Macmillan, New York.
- Brown, D. 2000. Aroids plants of the Arum family. Timber Press, Portland, OR.
- Chen, J., R.J. Henny, R.D. Caldwell, and C.A. Robinson. 2001a. *Aglaonema* cultivar differences in resistance to chilling temperatures. J. Environ. Hort. 19:198–202.
- Chen, J., R.J. Henny, D.B. McConnell, and T.A. Nell. 2001b. Cultivar differences in interior performances of acclimatized foliage plants. Acta Hort. 543:135–140.
- Chen, J., R.J. Henny, C.A. Robinson, T. Mellich, and R.D. Caldwell. 1999. Potted *Anthurium*: An interior-flowering foliage plant. Proc. Fla. State Hort. Soc. 112:280–281.
- Chen, J., T.A. Nell, R.J. Henny, C.A. Robinson, and R.D. Russell. 2001c. Light levels in influencing production and subsequent interior performances of *Ficus* cultivars. HortScience 36:600 (Abstr.).
- Conover, C.A., R.T. Poole, and J.F. Knauss. 1973. Florida’s changing foliage industry. HortScience 8:462–464.
- Croat, T.B. 1982. A revision of *Syngonium* (Araceae). Ann. Missouri Bot. Garden 68:565–651.
- FNGA (Florida Nurserymen and Growers Association) Locator 1975, 1988–1989, 1998–1999, 1999–2000. Orlando, FL.
- Griffith, L.P. 1998. Tropical foliage plants: A grower’s guide. Ball Publishing, Batavia, IL.
- Henley, R.W. and C.A. Robinson. 1993. Nephthytis cultivars to know and grow. Proc. Fla. State Hort. Soc. 106:343–347.
- Henny, R.J. 1981. Inducing flowering of *Spathiphyllum floribundum* (Linden & Andre) N.E. Br., with gibberellic acid (GA3). Proc. Fla. State Hort. Soc. 94:111–112.
- Henny, R.J. 1999. ‘Red Hot’ *Anthurium*. HortScience 34:153–154.
- Henny, R.J. and J. Chen. 2001. ‘Golden Bay’ *Aglaonema*. HortScience 36:1142–1143.
- Henny, R.J. and D.J. Norman. 2001. ‘Show Buzi’ *Anthurium*. HortScience 36:1140–1141.
- Henny, R.J., D.J. Norman, and J. Chen. 2002. Progress in ornamental aroid breeding research. VIII Int. Annual Conf. Missouri Bot. Garden, St. Louis, MO. (in press).
- Huxley, A. 1994. The new Royal Horticultural Society dictionary of gardening. Macmillan, London.
- Kamemoto, H.S. and A.R. Kuehnle. 1996. Breeding *Anthuriums* in Hawaii. Univ. Hawaii Press, Honolulu.
- Manaker, G.H. 1997. Interior plantscapes: Installation, maintenance, and management. 3rd ed. Prentice-Hall, Upper Saddle River, NJ.
- McConnell, D.B., R.W. Henley, and C.B. Kelly. 1989. Commercial foliage plants: Thirty years of changes. Proc. Fla. State Hort. Soc. 102:297–303.
- Smith, C.N. and J.R. Strain. 1976. Market outlets and product mix for Florida foliage plants. Proc. Fla. State Hort. Soc. 89:274–278.
- Wang, Y.T. 1997. *Phalaenopsis* light requirements and scheduling of flowering. Orchids 66:934–939.
- USDA (United States Department of Agriculture). 1998. Floriculture Crops 1997 Summary. USDA, Washington, DC.
- USDA (United States Department of Agriculture). 1999. Floriculture Crops 1998 Summary. USDA, Washington, DC.
- USDA (United States Department of Agriculture). 2001. Floriculture Crops 2000 Summary. USDA, Washington, DC.