

FIGHT FOLIAGE FOES WITH CLIMATE CONTROL, HEALTHY HABITAT

THE PATIENT Cut Greens

THE DOCS Terril A. Nell, Ph.D.,

Ria T. Leonard, University of Florida

THE SYMPTOMS Leaf yellowing and drop

> The ways that you care for cut greens are as diverse as the variety of plants that are available. Many cut-foliage species are used in floral arrangements to create innovative designs, while others are used as filler or on their own as wreaths or garlands. The most commonly used cut foliage are a range of temperate evergreen plants with varying shades of green, silver or variegated leaves, tropical plants, grasses and ferns. In addition to these standards, new novelty greens from South Africa, Hawaii and Australia have come on the market in the past decade.

The Diagnosis

No matter what their use or origin, all cut greens can be susceptible to yellow or brown leaves, short vase life and premature needle, leaf or berry drop. These problems may not appear for several days after foliage has been removed from the cooler.

Leaves drop or yellow because of water stress, prolonged storage or improper temperature during transport or storage. Exposure to ethylene also causes similar symptoms on sensitive species such as asparagus fern and holly. If your asparagus fern is dropping leaves and your Chinese holly is losing its berries and leaves, blame ethylene. Tropical foliage species, like Emerald Palm, are chill-sensitive, so if your palm is showing necrotic leaves or leaf spots, too-low temperatures during shipping or storage likely are the culprit.

Preventative Measures

Sourcing. Knowing the temperature tolerance of each particular species you use will go a long way toward maximizing the shelf life of foliage. Many species, including ferns (leatherleaf, asparagus, lace, sprengeri, dagger and wood), evergreens (juniper, holly, spruce, fir, pine),

salal and eucalyptus prefer storage temperatures ranging from 33 to 40 degrees. Check SAF's Flower and Plant Care Manual and the USDA Handbook 66; The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks (<http://www.ba.ars.usda.gov/hb66/148cutflowers.pdf>) for specific listings of temperature requirements.

Verify from suppliers that ethylene-sensitive species — asparagus fern, English boxwood and some hollies (Chinese and English types) — have been treated with anti-ethylene chemicals such as EthylBloc™ (1-MCP) or silver thiosulfate. More research is needed on the ethylene sensitivity of newer novelty greens, such as leucodendron, bear grass and the many novelty ferns such as rainbow, koala, umbrella, dingo and sea staff. But take precautions to keep all stems away from ethylene sources, such as fruits, vegetables and exhaust fumes.

Shipping/Storage. Cut greens are usually shipped in fiberboard boxes and wrapped in polyethylene to reduce drying out during transport and storage. Try to avoid storing or holding cut foliage, but if necessary, store for as short a time as possible at the proper temperature. For cut greens that are held dry in the cooler, such as leatherleaf fern, leave the foliage wrapped in plastic to avoid drying out and keep the humidity high.

Storing tropical cut foliage below 55 degrees is a sure way to ruin your purchase. Although many species such as ferns, Hedera, holly, mistletoe and other evergreens can be stored two to three weeks under cold conditions, prolonged storage will adversely affect quality and contribute to excessive water stress.

Processing. Once the greens have arrived in your shop, cut the lower half-inch of the stem and immediately hydrate the stem. Re-hydrate in a freshly made, commercial floral hydration or flower-food solution to avoid yellowing and leaf drop. Change the solution frequently as the stems are quick drinkers. Remove foli-



FROND MEMORIES The leatherleaf fern on the right is losing its youthful vigor after three weeks of storage, as its fronds become desiccated and start to roll inward.

age submerged in the solution. Although flower-food solutions may exacerbate premature leaf yellowing on species such as asparagus fern and leatherleaf fern, the increased vase life of other flowers in the arrangement outweighs the ferns' premature yellowing.

Many cut greens are imported and should be processed immediately to restore the water lost during shipping. Upon arrival, unpack, cut and place stems in a hydration or flower food solution. Remove damaged and diseased foliage to prevent disease such as botrytis.

Keep in well-lit areas with relatively high humidity. Avoid drafts, direct sunlight, heat sources and fluctuating temperatures. Always keep floral solutions and work areas clean and give flower food to customers.

Most cut-foliage species last between seven to 14 days. They are fairly durable, easy to handle and have few problems if you take proper care. Do so, and your competitors will be green with envy. 🌿

Terril A. Nell, Ph.D., AAF, is chair of the department of environmental horticulture, and **Ria T. Leonard** is a research associate at the University of Florida, Gainesville, Fla. The authors gratefully acknowledge the support of the American Floral Endowment, Produce Marketing Association, Asocolflores, Centiflores and floral importers for support of this research.