

# KEEPING YOUR QUALITY

We all know the best-looking plants sell better. Here's how to ensure quality product in your retail area.

By Tina Smith

**P**ostproduction care and handling of bedding plants and other crops presents a challenge for retail garden centers. Plants must not only look great in retail displays but also grow and flower in the landscape throughout the season. Producing, caring for and handling plants involves the combined efforts of breeders, propagators, growers, shippers, retailers and consumers to provide the best possible environment for flowering plants to

maintain their quality. Even the best retail area will not improve plants that exhibit poor growth habit or disease susceptibility; have large, overgrown branches; or are damaged in any way.

The retailer's responsibility begins with purchasing and/or growing high-quality plants from the start. Higher-quality material sells more rapidly. This accelerates turnover and reduces shelf-life problems. Secondly, quality plants are able to handle more stress on the retail shelf.

Any practice that decreases plant quality during production will also decrease shelf life. Stresses such as foliar burn, pest and disease damage and physiological disorders, regardless of the cause, will reduce plant quality. In addition to maintaining good growing practices, those retailers who grow their own product can do several things to improve the postproduction life of bedding plants and hanging baskets. These include choosing resilient varieties, scheduling properly, using the right container size, fertilizing, watering, using growth regulators and manipulating temperature.

## RECEIVING PLANTS

Maintaining high-quality plants after purchasing them from the grower begins with properly receiving them. When plants arrive, conduct a careful inspection to note their upon-arrival condition. Notify the grower or supplier of any problems right away.

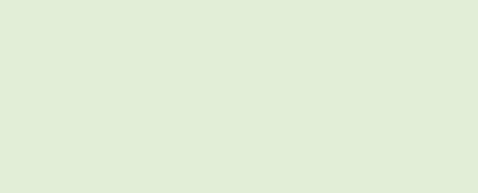
Care must be used when taking plants out of shipping cases. Avoid "bruising" the leaves and blooms or damaging the stems ▶

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Above: Use a water breaker when watering, and avoid knocking over plants by watering gently. Left: Keeping surrounding areas clean will reflect on both your plants and your business. (Photos courtesy of Pesche's Garden center, Des Plaines, Ill.)







and buds. Remove the plants carefully. Determine right away if plants need water. No rules or guidelines can substitute for the experience and good judgment of knowledgeable employees. Train employees on proper watering techniques. One suggestion to determine if a plant needs water is to press your finger into the soil about an inch. If the plant is moist, don't water it. If the soil remains dry more than an inch down, water it.

Next, wipe off any excess media from pots or packs. Remove any damaged leaves, stems or blooms. Now the plants are ready to be priced and checked for proper tagging before being displayed.

Be sure that plants are displayed as soon as they arrive. Customers cannot buy what they cannot see. This will also eliminate the possibility of damage caused by holding plants in less-than-optimum conditions. Once plants are in a retail display, there are several factors that can be manipulated to provide the best possible environment, including temperature, light, air circulation, water, grooming and sanitation, fertilizer and consumer education.

**Temperature.** How hot is it in your retail area? Use thermometers placed at plant height to let you know. Most experiments with bedding plants demonstrate that cool temperatures are the most important environmental factor in increasing shelf life. Avoid displaying plants on asphalt or cement parking lots in full sun. The heat radiating from the surface will cause root and leaf temperatures to reach hazardous levels, water loss will increase and the growing medium will dry out quickly. Plants will decline and ethylene levels will increase. Cool temperatures slow down plant metabolism and reduce respiration and, as a result, plants are less sensitive to ethylene (See sidebar, right). Shading and air movement are ways to help keep temperatures cooler for plants in the retail setting.

**Light.** Regardless of the species, bedding plants should be shaded from ♦

Ethylene: Good in production; bad in postproduction

Ethylene is a plant hormone and growth regulator that is active at very low concentrations. Ethylene can be used as a tool to control growth during production, but in the postproduction phase, ethylene can be devastating to plants.

Symptoms of ethylene damage include premature loss of foliage and flowers, premature flower death, translucent flower petals, the development of adventitious stem roots (tomato plants) and twisted or drooping petioles (epinasty). Sources of ethylene include: exhaust from vehicles and non-electric forklifts, cigarette smoke, plants and flowers that are under stress, fungi (Botrytis) and bacteria, incomplete combustion and/or poorly ventilated heaters, and fruits and vegetables. Generally, flowers and fruits produce more ethylene than vegetative plant parts.

Air movement will lower the concentration of ethylene and reduce its damage. Some plant species are more susceptible to ethylene damage than others. Composites such as marigolds and zinnias are less affected by ethylene than impatiens, which are highly sensitive. Below is a partial list showing the sensitivity of some bedding plants to ethylene.

- Insensitive: Alyssum, Calendula, marigold, ornamental pepper, zinnia
- Moderately Sensitive: begonia, coleus, petunia
- Highly Sensitive: geranium, impatiens, salvia, snapdragon

To limit ethylene damage in the garden center, keep display areas clean, since spent foliage and flowers produce ethylene. Maintain cool temperatures; the higher the temperature, the less ethylene it takes to induce plant disorders. Whenever possible, do not store high-ethylene producing plants and flowers in areas where ethylene-sensitive species are being held. Avoid storing fruits and vegetables in the same area as plants. Apples in particular are great producers of ethylene. Display plants in a well-ventilated area, and if a heated greenhouse is being

the sun if temperatures are expected to reach 68° F or higher. A shaded retail area prevents plants from reaching high, damaging temperatures and provides a comfortable shopping environment. Here in Massachusetts, many retailers use material that shades 50-60 percent and is enough to reduce sunlight to appropriate levels. Shade is especially important as the season progresses and light intensity increases. While shading is beneficial, too much shade can cause plants to become tall and leggy, also reducing the quality. For example, this can occur if hanging baskets are too densely spaced above plants or if plants are provided with shade, then displayed on tiers of shelves. The goal with light is to give enough to maintain good quality but not too much. Again, about 40-60 percent shade works well for most areas of the country.

**Air circulation.** Good air movement is also essential in the retail area to prevent ethylene buildup and

high temperatures and to decrease the probability of disease. Air movement naturally dilutes the buildup of ethylene, and it also lowers the temperature. In addition, many fungus-type diseases thrive in warm, damp, still environments; air movement and its cooling effect is the best defense against disease. Using overhead fans in the retail area, along with proper plant spacing, should provide necessary air movement.

**Water:** It is important to provide training on proper watering to employees, including temporary helpers. At the very least, they should know that plants should not be watered without water breakers. Knocking over plants by using a hard spray of water results in ethylene production, damaged plants and very poor shelf life. Also, careless overhead watering from hoses leaves plants wet and uncomfortable for customers to handle. Bedding plants require regular, gentle watering to maintain their high quality. Complete watering well before dark,

so plant foliage will dry quickly, preventing foliar diseases; the best time for watering is in the morning. Hand-watering and drip irrigation remain the most common methods of irrigation in retail displays, although some retailers are successfully using subirrigation systems. If plants are to be watered by hand, be sure to furnish sufficient time and personnel to water thoroughly and regularly. Anything less, and plant quality will decline rapidly.

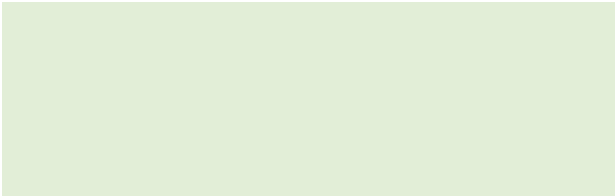
Hanging baskets can become a hazard if not properly located in a retail setting. Place hanging baskets in areas beside the aisles, not over aisles where water and fertilizer will drip onto customers and create dangerous situations.

**Grooming and Sanitation.** Keep plants and surrounding areas neat and clean. Remove dead and injured plants and spent flowers at least twice each day during the busy season. Injured plants and messy areas reflect poorly on your business and can produce high ♦

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Removing dead and injured plants and disbudding heavy bloomers will decrease the chance of ethylene





ethylene concentrations and promote disease. Encourage employees to carry pruning shears and wear work aprons with large pockets where they can keep dead flowers and debris from plants in the sales area until they can find a waste can.

**Fertilizing.** Most bedding plants will not require fertilizer in the retail setting. Bedding plants will be purchased quickly and planted in the garden where they will be fertilized and have space to grow. However, hanging baskets and patio planters often stay in those containers throughout the summer. The small volume of soil in a container is the only available source of nutrients for the plant, compared to the much larger volume of soil available to the plants in a garden. Another problem is that frequent watering can cause much of the fertilizer to be leached out of the container. If hanging baskets and planters are not fertilized in the retail sales area or if resin-coated, slow-release fertilizer was not used, all the fertilizer will leach out by the

time the consumer buys the plants, if not before. These plants will quickly decline in quality once the customer takes them home. One suggestion is to fertilize baskets and planters in the retail sales area using 400 ppm nitrogen on a weekly basis, or using 200 ppm nitrogen at every watering. Another suggestion is to topdress baskets and planters with a slow-release fertilizer using 3-5 grams of nitrogen of a shorter-term, 4- to 6-month material or using resin-coated tablets according to directions. Before fertilizing plants, retailers should communicate with their wholesale growers to make sure resin-coated fertilizer has not already been applied prior to shipping.

### CONSUMER EDUCATION

The consumer can quickly ruin the months of growing spent on a quality hanging basket plant, patio planter or even bedding plants with inexperience or neglect. Care and handling information is an essential

part of the customer's success with their purchases. Provide detailed tags and display waterproof posters containing planting and care information to ensure your customer's success with their plants. This is perhaps even more important with flowering hanging baskets and planters than for any other floriculture crop because of the amount of care required to maintain them through the summer.

Purchasing and growing high-quality plants and manipulating temperature, light, air circulation, water, cleanliness and fertility in your garden center will ensure that your customers have the greatest chance for success with their spring plants. As a result, your customers will provide you with repeat sales. 🌱

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Pay careful attention to where your plants are placed according to light and temperature.