Keeping quality of bedding plants

by A.M. Armitage

How many times have you seen bedding plants for sale that were of such poor quality you can't imagine anyone buying them? To walk into an area of dead or dying plants makes one want to cry. On the other hand, there exist many retail outlets that obviously take pride in maintaining plants of top quality. Walkways are spotless, plants are protected from the hot sun and are ready to be transplanted and will rapidly grow in the garden.

Although there is a great amount of information about the production of bedding plants, little is documented on the retail conditions which exist when the plants leave the greenhouse. In order to determine how the environment affects the keeping quality of the plants, a detailed study of the conditions under which the plants are kept was undertaken.

Temperature, light and ethylene as well as type of structure, selection, labeling, overall sanitation, grooming of plants and personnel were studied. Photos at each establishment and overall quality of plant material were evaluated.

Sixteen retail outlets were surveyed. Ten locations were garden-center-type outlets (i.e., primary function was the sale of plants and plant-related goods) and six were mass merchandisers (chain stores, department stores.) The study was conducted from April 4 to May 4, the height of the bedding plant season.

The variability among outlets was very large. Although garden-center establishments in general maintained plants far better than the mass merchandisers, there was very little difference in initial quality of plants arriving at the retail location. In fact, only one instance of poor plants being received by a chain store was seen, and the keeping quality of these plants declined within hours.

Some Observations

One of the most important factors in maintaining high-quality plants is the use of some sort of shade for the bedding plants. Bedding plants sold in cell packs have little soil volume and no water reservoir. Water is rapidly lost from leaves under high-light, high-temperature areas and the plants rapidly wilt. Although the plants may recover when watered, wilting results in irreversible damage which shows up as "poor quality."

The use of shade reduces light intensity and significantly reduces temperature. For example, when the day was sunny and temperature was 90°F, plants placed on sidewalks or parking lots were being subjected to 92-97°F while the temperature in the shade (under lath or shade material)

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was 75-82° F. Approximately 80 percent sun reduction was optimum. This kept light intensity and temperatures down to reasonable levels during clear, warm days, and did not diminish light or temperature drastically on cloudy days. In the survey, 80 percent of the garden centers had all the bedding plants under some kind of shade. Normally, lath construction was draped with rigid plastic, shade cloth, or saran cloth. One outlet used heavy shade from pine trees with the same effect. Some garden centers had up to 90 percent reduction, while many only had 50 percent light reduction. Of the mass merchandisers, only 33 percent had shade areas for all their plants. Most had the plants on sidewalks, parking lots or movable tiered trays. The plants suffered badly.

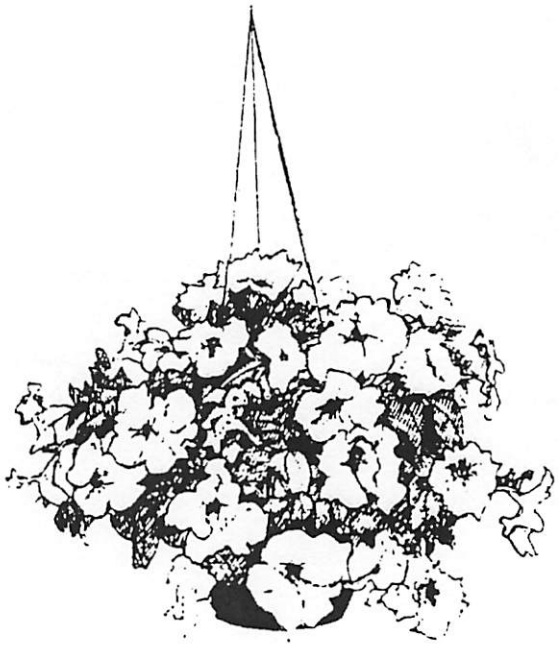
Reduction of temperature is also accomplished through good ventilation. Good ventilation can be attained by simply allowing enough room for air movement around the plants and keeping plants clear of obstructions that reduce air movement. It was judged that 40 percent of the garden-center operations had inadequate air movement. One simply did not have enough fan capacity in one of the greenhouses used for retail sales, and others had plants too close together or under the benches or on the ground. Only one mass merchandiser had enough ventilation. When plants were placed directly in front of the building, ventilation was minimal. Having plants on raised benches reduces drainage problems and increases air circulation. Most garden centers had goods on benches, but only 33 percent of the mass merchandisers had all their plants on raised benches, and fewer than 50 percent had any plants off the ground.

The environment under which the plants were held also showed marked increases in levels of ethylene. Where ventilation was poor and damaged or dying tissue was abundant, ethylene levels rose (up to 0.5 ppm). The longer the plants were subjected to high levels of ethylene, the more damage occurred.

The sales environment as studied results in plant stress. Cleanliness of plant material and sales area is an absolute must to reduce damage. The biggest differences between mass merchandiser and garden-center operator is the quality and quantity of personnel. Jobs of removing dead flowers and leaves, culling broken plants and cleaning debris cannot be done by a single employee who is also in charge of the cash register. Often, the only concern of the employee is to drown the plants before he leaves at 6 o'clock, which brings on botrytis and other water-related problems. Establishments that watered their plants in the morning and allowed them to dry during the day had far better plants than those who consistently watered in the evening.

The results of this work are very clear, and anyone in retail sales of bedding plants should be well aware of them.

Fast turnover is no excuse for sloppy management. Not all material sells at the same rate, nor are all times equally busy. It only takes a few poor-looking plants to make the whole area appear shoddy.



"Cleanliness of plant material and sales area is an absolute must."

Shade all bedding plants from sun. Both sun-tolerant plants such geraniums or petunias, and shad tolerant plants such as begonias a impatiens must be shaded to slo deterioration. Approximately 60-7 percent shade is best for most plant with 50 percent being minimu Shade may be the result of sh cloth over lath, polyethylene, sha trees, etc.

Ventilation is very important reduce temperature and buildup pollutants. If displaying outdoor keep plants from "hugging" larg obstructions such as buildings. Whe building shade facilities, be sure th adequate ventilation is provided. displaying in a greenhouse, turn on fans for plant and people care. Circulation or air is nil when plants are packed in tiers or crushed together. This may save space, but the plants will look terrible.

Raise plants off the ground whe ever possible. All too often, plants were observed on the pavement, side walk or in the greenhouse sitting in

small puddle of water. If the day was hot, the plants were baked. Air and water movement are greatly increased when plants are displayed on a raised bench.

Grooming of the plants (removing dead flowers, dead or dying leaves, etc.) is essential if ethylene gas is not to be produced in excessive amounts. This also adds to the overall cleanliness of the area. Sales areas should and must be clean and free of weeds, disease and insects. Allowing trash and half-dead plants to accumulate is simply asking for a disaster.

People are the most important aspect of a retail sales area. The jobs of grooming, watering, labeling, etc., must be delegated to responsible people. Plants are not furniture and cannot be ignored. If the survey is any indication, plants aren't the problem; people are.

The survey gave a true, realistic indication of some of the problems in the retail aspect of bedding plants. As there are good and bad growers everywhere, so it is with retailers. There are people who do all they can to minimize decline in plant quality whether they keep them for three hours or three days. On the other hand, there are those who believe that the plants will sell before any damage is seen, and nonvisible damage or stress does not concern them.

The future

Where do retailers go from here? Will they always market bedding plants in such a way that most plants start to deteriorate when they leave the production area? As long as plants are marketed in flower, the environment under which the plants are sold will be of paramount importance. Many retailers are doing an excellent job, but many still have a long way to go.

Do plants have to be marketed this way? The day may soon come when all plants are sold in a manner similar to the food industry. Not in a food store, but in a controlled-environment plant store where plants are displayed under lights, and temperatures are controlled. A store where the warehouse facilities keep plants in optimum condition, and plants are replenished on demand. A clean, well-maintained, airy building where plants leave in at least as good a condition as they arrived. Ah, maybe some year. □