

FOR THE RETAILER . . .

KEEPING QUALITY OF BEDDING PLANTS

— STATE OF THE ART —

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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 me want to itch. On the other hand, there exist many retail outlets who 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 present conditions under which the plants are kept was undertaken.

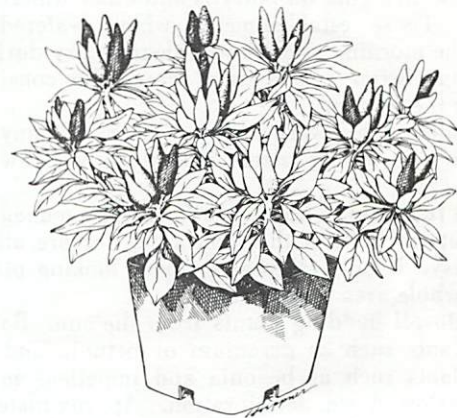
We looked at temperature, light and ethylene as well as type of structure, selection, labeling, overall sanitation, grooming of plants and personnel. Photos at each establishment and overall quality of plant material were evaluated.

We surveyed 16 retail outlets. Ten locations were garden center type outlets (i.e., primary function was the sale of plants and plant related goods, and six were mass merchandizers (chain stores, department stores.) The study was conducted from April 4-May 4, the height of the bedding plant season in our area.

The variability among outlets was very large as was expected. Although garden center type establishments in general maintained plants far better than the mass merchandizers, there was very little difference in initial quality of plants arriving at the retail location. In fact, we saw only one instance of poor plants being received by a *chain store*; 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°, plants placed on sidewalks or parking lots were being subjected to 92-97°



Ornamental Pepper, CANDLELIGHT

while the temperature under shade (lath or shade material) was 75-82°. We found that, in our area, approximately 80% sun reduction was optimum. This kept light and temperature levels down to reasonable levels during clear warm days and did not diminish light or temperature drastically on cloudy days. In our survey, 80% of the garden centers had all their 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% reduction, while many only had 50% light reduction. Of the mass merchandizers, only 33% 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 which reduce air movement. We judged that 40% of the garden

(continued on page 2)

Bedding Plants (continued)

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 merchandizer 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% of the mass merchandizers had all of their plants on raised benches, and over 50% had none of the 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 .5 ppm). The longer the plants were subjected to high levels of ethylene, the more damage occurred.

The sales environment as we know it results in plant stress. Cleanliness of plant material and sales area is an absolute must to reduce damage. The biggest differences between mass merchandizer 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 also in charge of the cash register. Oftentimes, the only concern of the employee is to drown the plants before he leaves at 6:00 o'clock, bringing on botrytis and other water-related problems. Those establishments which 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.

1) **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.

2) **Shade all bedding plants** from the sun. Both sun tolerant plants such as geranium or petunia and shade tolerant plants such as begonia and impatiens must be shaded to slow down deterioration. Approximately 60-80% shade is best for most plants, with 50% being minimum. Shade may be the result of shade cloth over lath, polyethylene, shade trees, etc.

Ventilation is very important to reduce temperature and buildup of pollutants. If displaying outdoors, keep plants from "hugging" large obstructions such as buildings. When building shade facilities, be sure that adequate ventilation is provided. If displaying in a greenhouse, turn on fans for plant and people care. Circulation of 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 whenever possible. All too often, we found plants on the pavement, sidewalk or in the greenhouse sitting in a small puddle of water. If the day were 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 as well as adding to the overall cleanliness of the area. Sales areas should and



*Petunia, Grandiflora,
RED PICOTEE hybrid*

must be clean and free of weeds, disease and insects. Allowing trash and half-dead plants to remain is simply asking for a disaster.

People are the most important aspect of 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 our survey were any indication, plants aren't the problem; people are.

Our survey gave us a true, realistic indication of some of the problems in the retail aspect of bedding plants. I have seen retail outlets in Michigan, Ohio, Ontario and Quebec; and I believe our findings in this study would not be different in any other part of the country. As there are good and bad growers everywhere, so there are with retailers. There are people who do all they can to minimize decline in plant quality regardless if they keep them for 3 hours or 3 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 we go from here? Will we always market bedding plants in such a way that most plants start to deteriorate when they leave the production area? As long as we continue to market plants in flower, the environment under which the plants are sold will be of paramount importance. We must minimize plant decline and think of the sales area from the plant's point of view. Many retailers are doing an excellent job, but there is still 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 similar manner to food. 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 not on display 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.

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