

Production Practices Influencing the Keeping Quality of Bedding Plants

STABY



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The rationale behind the experimentation funded by the Bedding Plants Foundation, Inc. (BPMI) was very simple. Bedding plants were being produced in record numbers and distributed through a variety of outlets, but a great deal of trouble was occurring at the retail market due to rapid decline of the plants. The question asked in our experimentation was, "What production practices in the greenhouse can influence the keeping quality of the crop?"

The experiments we conducted in order to learn more about this question have included the following:

- Over 20 retail establishments, including mass market and plant retail stores, were monitored for light intensity, temperature and ethylene levels during the spring bedding plant season. Once we had a handle on what was occurring in the "real world", we simulated environments to discover the optimum environment for several bedding plants.

This work resulted in guidelines for shade, light, temperature, air movement and plant maintenance for retail outlets. These guidelines have appeared in grower publications such as BPI News and many others.

- Studies on fertilizer application resulted in guidelines for the termination of fertilizer prior to marketing.

In general, applying nitrogen right up to market time results in plants which continue to grow in the retail area. The additional growth is usually of poor quality and plants often become top heavy and topple. In the retail area, we wish to maintain greenhouse quality rather than add additional growth.

- Experiments were conducted on the effects of water frequency on keeping quality. Plants were given various schedules of watering so that some plants were grown drier than others. Plants which received the most water had the poorest shelf life regardless of the environment under which they were placed.

- When we looked into media type, we found simply that if the medium was well aerated and drained — properties for good growth in the greenhouse — then keeping quality did not suffer.

More important than the type of media was the volume of media. The move toward less and less volume in cell packs is the greatest impairment to long shelf life compared to all other production practices we studied.

- Antitranspirants were, in general, not found to be beneficial, except on plants under some temperature stress. Hydrogel-type soil additives had more influence on shelf life than antitranspirants.

Probably the greatest benefit of this work is that the information we have found has been published in scientific journals and newsletters in over a dozen states and provinces, and national trade journals in the United States and Canada. The Bedding Plants Foundation should be very proud to come to the attention of so many people in the floriculture industry.

For additional information on the Foundation and its activities, contact: Bedding Plants Foundation, Inc., P.O. Box 27241, Lansing, Michigan 48909.

Stage of Growth	Procedure	Significant (S) or Minor (M) Benefit or Variable (?)	Comment
At transplant	Incorporation of a hydrogel substance in media	M	Plants do not require water as often so dry out less.
At transplant	Use of as large a container as possible	S	Plants dry out less thus less water stress.
Young plants	Use of growth regulators where applicable	M-S	Reduce leaf area thus reduce water loss in sales area.
Finishing (final 1-2 wks)	Reduce water frequency over the last few weeks	S	Acclimates plants for impending water stress.
	Reduce fertilizer frequency and/or concentration	S	Excess nutrients in soil will cause plant stretch as well as a potential salt problem.
	Lowering greenhouse temperature prior to shipping	S	Helps plants harden off and cope with stress better.
	Use of anti-transpirants prior to shipping	M(?)	If plants are under minor stress (i.e. warm temperatures) may be helpful. If plants are under high stress, little effectiveness.