

## KALANCHOE HEAT DELAY

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### WHAT IS HEAT DELAY?

Heat delay is the abnormal, uneven or delayed flowering of kalanchoes caused by high temperature production conditions. Optimal temperatures for kalanchoes are 75° to 80°F day and 60° to 65°F night. High temperatures delay floral initiation, as well as reduce plant quality and flower numbers. As night temperatures increase above 70°F, heat delay becomes evident. Heat delay symptoms limit plant marketability at night temperatures greater than 75°F. High day temperatures also influence the growth and flowering of kalanchoes, but are less significant than night temperature.

### CULTIVAR RESPONSE

Cultivars vary in their response to supraoptimal temperatures. Some are tolerant of high night temperatures and yield high quality plants. Other cultivars are sensitive or intermediate in their response to supraoptimal temperatures.

*Kalanchoe Flowering Response to Supraoptimal Night Temperatures*

Tolerant	Flower Color*	Intermediate	Flower Color*	Sensitive	Flower Color*
Attraction	OR	Adobe Rose	R	Bali	O
Eternity	CP	Cinnabar	O	Fascination	Pu
Inspiration	R	Firefly	Y	Osage Orange	O
Sensation	P	Fortyniner	Y	Pollux	OR
		Satisfaction	Pu	Red Sunshine	R

\*Flower color: orange (O), coral pink (CP), orange red (OR), purple (Pu), red (R), yellow (Y), pink (P).

High temperature tolerant cultivars should be utilized for late spring, summer and early fall flowering. Sensitive cultivars should be grown only during late fall, winter and early spring. Intermediate cultivars are grown during the same season as sensitive cultivars; however, to get a full color selection during the summer months, some intermediate cultivars may have to be utilized.

### ENVIRONMENTAL FACTORS AND INITIATION

Kalanchoes are most sensitive to supraoptimal temperatures during the first 4 to 6 weeks of short days when the first flower buds are initiated. During this sensitive developmental phase, optimal night temperatures should be maintained in order to maximize the number of buds formed. Temperatures under the black cloth should not exceed 75°F. Air from fan and pad cooling system should be pulled under the black cloth.

The first flower buds are formed after 4 to 6 weeks of short days at optimal temperatures. Once flower buds have formed, supraoptimal temperatures accelerate flowering and increase internode elongation.

Kalanchoes require high light levels with 4,000 to 5,000 ft.c. being optimal. Lower light levels increase the severity of heat delay and delay flowering.

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**RECOMMENDATIONS  
TO REDUCE HEAT DE-  
LAY IN KALANCHOES**

1. Maintain temperatures as low as possible.
2. Avoid high temperature buildup under black cloth. Pull cooled air under black cloth.
3. Use a 15 hour night length for floral initiation.
4. Alter shade cloth schedule (on at 7:00 P.M. and remove at 10:00 A.M.).
5. Place plants at the pad (coolest) end of the greenhouse for the first 4 to 6 weeks for initiation; then move to a warmer area for finishing.
6. Continue short day treatment until flower buds are visible on all cultivars.
7. Do not reduce light levels below 3,000 ft.c.
8. Grow high temperature tolerant cultivars.

