



Here's information to help you hit your market date with day-neutral species, such as African violets.

## AFRICAN VIOLET FLOWERING: It's All In THE TIMING

This system for timing African violet flowering will ensure your plants are ready on time.

by JAMES E. FAUST and ROYAL D. HEINS

**S**CHEDULING short-day species like chrysanthemums and poinsettias for specific market dates is relatively simple since flower initiation occurs uniformly across the crop whenever short days begin.

Scheduling day-neutral species, such as African violets, for a specific market date can be difficult because growers cannot precisely control flower initiation.

Flower initiation of African violets is influenced by the amount of light a plant receives. Plants will not flower at low light intensities. But as light intensity increases (within limits), the time required for flower initiation decreases and the number of flowers per inflorescence increases.

Once flower initiation has occurred, the temperature influences the rate at which the inflorescence will develop, the fastest rate occurring between 76°F and 80°F. Inflorescences develop more slowly below or above these temperatures.

### Tracking Flower Development

Systems have been devised to help growers schedule many greenhouse crops. For example, Easter lily growers use leaf counting to help time a crop for the desired visible-bud date.

We have devised a system similar to the one described above to help growers time flowering of African violets. With our system, a visible-bud date is determined, based on the market date. Once visible bud appears, inflorescence development is monitored with a visual

scale, and greenhouse temperature is adjusted as needed.

Assuming plants receive sufficient light, an inflorescence usually develops in the first leaf to fully expand after the plug is transplanted to a finishing pot. The youngest visible leaf at the time of transplant is often the first leaf to fully expand and, consequently, the first leaf to develop an inflorescence in the leaf axil. Visible bud will usually occur 3½ weeks after transplant when plants are grown at 76°F, and 5 weeks after transplant when grown at 66°F.

We divided inflorescence development after visible bud into nine stages based on curvature and height of the inflorescence (see Figure 1).

Shortly after the inflorescence begins to elongate, the stalk of the flower curves to protect the primary flower bud as the inflorescence starts to push through the canopy. Once it's

**Inflorescence development after visible bud divided into nine stages based on curvature and height of the inflorescence.**

through, the flower stalk straightens and the primary flower opens.

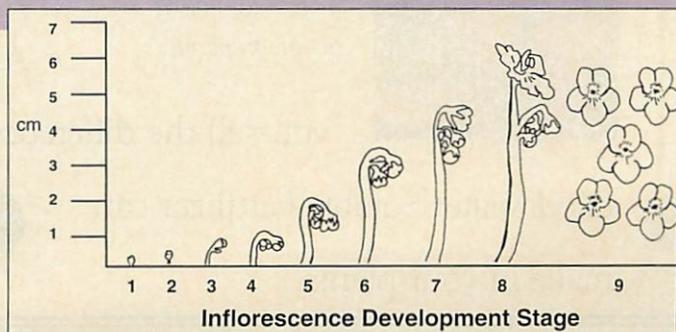
### Determining Visible-Bud Date

Here's an example of how to use the developmental scale to schedule your crop. (Note: We assumed plants would be marketed with five open flowers.)

1. Use Table 1 to estimate number of days required for five flowers to open per plant (i.e., the plant develops from Stage 1 to Stage 9) based upon the expected greenhouse temperature.
2. Determine the market date.
3. Estimate the visible-bud date by

Figure 1. Description for each stage of inflorescence development of African violets.

STAGE	DESCRIPTION OF INFLORESCENCE DEVELOPMENT
1	Visible bud (2 mm long) in the leaf axil.
2	Flower stalk subtending the primary bud becomes visible.
3	Flower stalk just begins to bend.
4	Flower stalk has begun to curve to protect the primary flower bud.
5	Flower stalk has completely curved.
6	Inflorescence begins to poke through the leaf canopy and the primary flower bud and flower stalk have begun to straighten out.
7	Flower stalk supporting the primary flower bud straightens out.
8	Primary flower is open.
9	Five flowers are open per plant (typically, the first 2-3 inflorescences will develop simultaneously; thus, each one contributes 1-3 flowers).



12(8)

subtracting the number of days for five flowers to open from the market date.

*Example:* If the market date is February 1 and the greenhouse is set at 68°F, then according to Table 1, 46 days are required for five flowers to develop on each plant. Subtracting 46 days from the February 1 date gives December 17 as the visible-bud date.

Plants that have not reached visible bud by December 17 won't have five open flowers on February 1 unless the greenhouse temperature is increased.

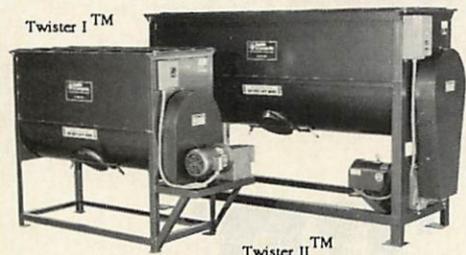
Once visible bud appears, inflorescence development can be tracked as the African violet crop progresses to-

Table 1. Inflorescence development scale for African violets.

DAYS FROM VISIBLE BUD TO FIVE OPEN FLOWERS									
Temperature	Inflorescence development stage								
°F	1	2	3	4	5	6	7	8	9
64	50	45	40	34	29	23	18	13	0
66	48	43	38	33	27	22	17	12	0
68	46	41	36	31	26	21	16	12	0
70	44	39	34	30	25	20	15	11	0
72	42	37	33	28	24	19	14	10	0
74	39	35	30	26	22	18	13	9	0
76	37	33	28	24	20	16	12	8	0
78	34	30	27	23	19	15	11	8	0

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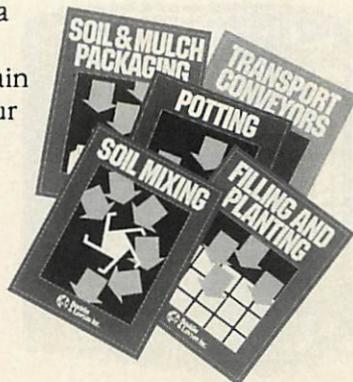
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ward the anticipated market date.

1. Determine the current stage of inflorescence development by examining the leaf axils of many plants from several different cultivars.

2. Use Table 1 to determine the stage at which the crop must be to meet the market date.

3. If the crop is on time, maintain the same temperature and examine the crop again in 5 days. If plants are behind, determine the temperature needed to increase the rate of inflorescence development.

*Example:* If a crop is examined on January 1 (31 days before the February 1 market date), the crop should be at least at Stage 4 if the greenhouse temperature is to remain at 68°F. If the crop is only at Stage 3 on January 1, then the greenhouse temperature should be increased to 74°F for the crop to be in flower in 31 days.

If the crop is at Stage 1 on January 1, then five flowers will not be open by February 1 even if the air temperature is increased to 78°F. However, the crop will have at least one open flower per plant (Stage 8) if the temperature is set at 74°-78°F (39-9 = 30 days from Stage 1 to Stage 8 at 74°F).

This model of inflorescence development is based upon research conducted on several cultivars. Our experience has shown it to work reasonably well with most cultivars. However, some cultivars will not perform exactly like the model, so use the development scale as a reference for comparison with faster- or slower-developing cultivars. **GG**

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