



By Erik Runkle



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Rapid Flowering of Pansy

Pansy has a unique photoperiodic flowering response. What can be done when varieties don't flower uniformly?

Many pansy varieties have a long-day photoperiod response, meaning that they flower earlier when grown under long days/short nights. For some varieties, a long day is at least 14 or 15 hours (meaning the uninterrupted night length is nine or 10 hours). Other varieties flower almost as rapidly under a 12-hour day as a longer one. These varietal differences become apparent when pansy is grown in late winter/early spring under natural short days (Figure 1). The photo shows different varieties transplanted at the same time, with some in full flower and others at least a week or two behind.

Pansy has a unique photoperiodic flowering response: Regardless of the day length, plants typically begin to initiate flower buds at the sixth to eighth node (leaf). However, the first few flower buds of varieties sensitive to photoperiod often don't develop open flowers when grown under short days. Upon close inspection of these varieties, one can see small flower buds (about 1/8-inch long) that stop developing (Figure 2). The flower buds do not abort but don't develop into open flowers. As the days become longer and plants mature, subsequent flower buds of these sensitive varieties develop into open flowers.

Ensuring Uniformity

What can be done to prevent a situation where varieties don't flower uniformly? First, consult with your plant supplier and try to grow only varieties that are relatively insensitive to day length. There may not be adequate information on this topic on all varieties, so you may have to learn from your own experience and that of other growers and educators.

Another option is to provide artificial long days to all pansy varieties until early April, when the days are long enough for rapid and uniform flowering.



Figure 1. Some pansy varieties flower relatively rapidly under natural short days while flowering of other varieties is delayed.



Figure 2. Upon close inspection, flower buds initiate in day length-sensitive pansy varieties under short days, but lower buds fail to develop into open flowers. Lower leaves have been removed, and the red arrows point to undeveloped flower buds.

Past research at Michigan State University has shown that far-red light plays a role in pansy's flower development. Therefore, if long days are provided by artificial light that does not contain sufficient far-red light, like that from a compact fluorescent lamp, flowering may not be promoted as desired.

In contrast, incandescent lamps are rich in far-red light and are effective at delivering long days. Unfortunately, they consume a lot of energy and their spectrum rich in far-red light promotes stem and flower elongation, but those factors may be tolerable if the lighting accelerates flowering of sensitive varieties by a few weeks.

In my experience, once a flower bud and peduncle (which attaches the flower to the stem) reaches 1/2-inch long, the flower will continue to develop regardless of day length. Therefore, once a majority of plants have reached this stage, photoperiod lighting can be turned off. **GPN**

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