Short Day Causes Dormancy in Tuberous Rooted Begonias

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From previous experiments with photoperiodic work on tuberous rooted begonias (Lewis, 1951), it has been found that this begonia will continue in flowering condition any time of the year if the day length is approximately 14 hours. By the use of supplementary light during the short winter days the tuberous rooted begonia continues to flower.

When the length of day has been reduced to 12 hours or less, the growth of the plant is inhibited, tubers form, and flower buds will no longer develop.

To study the effect of short days on dormancy of tubers, large blooming plants from tubers started May 31, 1951 were started in sterilized media made up of one-half peat and one-half shredded sphagnum.

By June 25th, the begonia tubers were well rooted with leaves well started. These plants were potted into 3/4 size 6-inch pots in sterilized soil with a mixture of one-third leaf mold, one-third peat, one-third soil.

On August 15, 1951, after the plants were well in flower, they were divided into six different groups with six plants to each group. Each group was subjected to short day conditions (9-hour day) from 1 to 8 weeks.

After each group had been subjected to its respective treatment, the plants were cut back and given long days again (14½ hours). The results of the treatments were as follow:

Group 1 - 1 week short days - cut back - long days. Five plants made good growth - three of these plants were in bloom 11/15/51 - one tuber rooted.

Group 2 - 2 weeks short days - cut back - long days. Five plants started growth, developed very slowly - one tuber rooted.

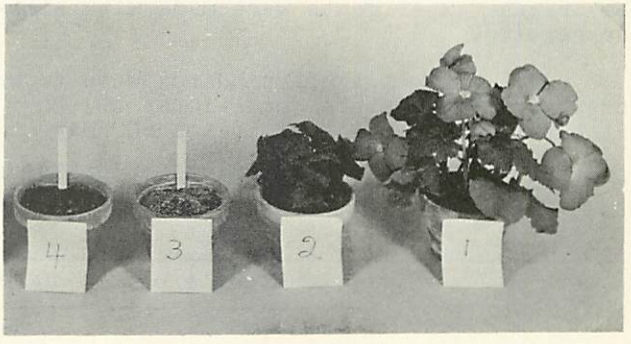
Group 3 - 3 weeks short days - cut back - long days. Only one tuber started growth. This plant failed to grow.

Group 4 - 4 weeks short days - cut back - long days. No growth after treatment.

Group 5 - 6 weeks short days - cut back - long days. No growth after treatment.

Group 6 - 8 weeks short days - cut back - long days. No growth after treatment.

These experiments show that 2 weeks of short photoperiods is not sufficient to cause tuber dormancy but causes tubers to start slowly after tops are removed. Some dormancy had been produced. Three weeks of short photoperiods caused dormancy in the tuber which requires time before the tuber will again grow after the top is removed.



Tubers subjected to 1 to 8 weeks of short days, cut back and grown under long days. Photo after 3 months from the beginning of the treatment. Partial dormancy after 2 weeks and complete dormancy at 3 weeks.

Lewis, Charles A. Daylength Controls Flowering of Tuberous-Rooted Begonias. New York State Flower Growers Bulletin 67: 2-3, 8. March, 1951.

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BEGONIAS - the Dutch and Swedish as well as tuberous and other types will be discussed in the potted plant session at the Short Course