

Effect of cold storage on shoot emergence and flowering of asiatic lilies¹

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summary

To compare the effect of cold storage on plant growth, shoot emergence, flowering, and bulb quality of asiatic hybrid lilies, 5 cultivars 'Asterix', 'Cardillac', 'Festival', 'Florence', and 'Prominence' were investigated. The bulbs were stored in 5 °C for 3 to 6 weeks, then planted into field. It showed that cultivars had different chilling requirement. Asterix, Cardillac, and Prominence were early cultivars with low requirement. More than 80% of the bulbs of those cultivars sprouted in 3 week treatment. In 6 week treatment, 100% of the bulbs were induced to sprout, emerge, and anthesis at 87, 92 and 88 days, respectively, after transplanted. For late cultivars Festival and Florence with long chilling requirement, 6 week treatment was still not enough to induce shoot emergence. Flowering of Festival and Florence started at 120 and 147 days, respectively, after bulbs transplanted.

The amount of days from planting to flowering of asiatic lilies shortened as the duration of cold storage increased from 3 weeks to 5 weeks. This shorten effect seems to reach the highest at 5 weeks treatment. The duration of cold storage did not significantly affect plant height, flower number per plant, and quality of daughter bulbs. It seems that those characteristics were not only affected by genotype but also related to the climate during cultivation.

(Key words: Asiatic hybrid lily, Cold storage, Shoot emergence, Flowering)

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