



Forget-me-not as a Potted Plant



Forget-me-not 'Bluesylva'. (All photos and the graph courtesy of Jeff W. Werner, University of Alaska)

Looking like scorpions with mouse ears, forget-me-nots have been successful as flowering potted plants in local markets, and their scarcity could mean higher profit margins for growers.

A recent study at the University of Alaska-Fairbanks examined day length, temperature, lighting and cold treatment to reveal the best cultivation method for this crop.

By Meriam Karlsson

During the Victorian period, flowers were associated with emotions, strengths or moral qualities. Several legends in the naming of the flower forget-me-not suggest everlasting friendship, remembrance and eternal love. These correlations are still strong, and forget-me-not is often requested to acknowledge, celebrate or commemorate romance, appreciation or companionship. Forget-me-not is also the state flower of Alaska and, therefore, generates additional local demand from many visiting tourists, hotels, restaurants and public establishments.

Forget-me-not is a familiar plant to gardeners and has been grown for years in borders or groundcovers. The flowers are less than one inch in diameter and open in succession on a curled spike or cyme inflorescence. As each flower withers, a seedpod is left behind. The curled flower spikes resemble the shape of a scorpion and sometimes the common name "scorpion grass" is used instead of forget-me-not. The delicate flowers are usually blue with a lighter eye. Flowers in white or soft pink occur naturally and are also available.

The scientific genus name of forget-me-not is *Myosotis* because the leaves in some species look

a lot like the ears of a mouse. The *Myosotis* species are biennial or perennial and grow naturally in moist, shaded or partly shaded areas. True forget-me-not (*Myosotis scorpioides*) is a short-lived perennial, while the most commonly cultivated species is the biennial garden or woodland forget-me-not (*Myosotis sylvatica*). The garden forget-me-not has leaves that are 2-3 inches in length and grows to a height of 6-12 inches. *Myosotis alpestris* is similar to *M. sylvatica*, and it is difficult to distinguish the two species. Seeds of forget-me-not are sold under both names, although most *M. alpestris* is likely *M. sylvatica*.

Forget-me-not as a cut flower is best-suited for small floral pieces, miniature nosegays, corsages or chaplets for the hair. Other marketing opportunities include flowering potted plants. Seed is available for various cultivars such as 'Snowsylva' (white), 'Rosylva' (pink), 'Bluesylva' (mid-blue), Bobo series (blue), 'Compindi' (deep blue), 'Indigo' (blue), 'Miro' (mid-blue), 'Musik' (deep blue) and 'Victoria' (azure blue). Bluesylva and Victoria have, under our growing conditions, been naturally compact with profuse flowering. The Bobo series and Indigo have longer-flowering shoots than Bluesylva but still make nice plants in 4-inch containers. Compindi and Miro are short, ball-

shaped plants with heights of six inches, while Musik grows to a height of 10 inches. Snowsylva and Rosylva are suitable to meet the demand for white and pink forget-me-nots.

PROPAGATION AND EARLY DEVELOPMENT

Germination takes 8-14 days at 68-72° F. Information on light requirements for germination varies in the literature; we have had excellent germination of uncovered seed under approximately 500 foot-candles (fc) for 16 hours each day. A cold treatment or vernalization significantly promotes or is unconditionally required for flowering in biennials and many perennials. Most herbaceous perennials sense vernalization at temperatures between 32 and 45° F. For low temperatures to be effective, plants need to remain active; therefore, low light is required during vernalization. A suggested level is 25-50 fc. The minimum required period of vernalization varies from a few days to several weeks and depends on species, cultivar and physiological age of the plant.

COLD TREATMENT

Seeds of several cultivars (Bobo series, Indigo and Victoria) were germinated, and seedlings ▶

were grown at 68° F, approximately 500 fc (100 $\mu\text{mol m}^{-2}\text{s}^{-1}$) for 16 hours and fertilized from the first true leaf stage with 100 ppm nitrogen from a complete fertilizer containing micronutrients. The plants were transplanted into 4-inch pots filled with a peat-lite medium. Six weeks after seeding, the temperature was dropped to 42° F. Irradiance was 100-125 fc (20-30 $\mu\text{mol m}^{-2}\text{s}^{-1}$) for 16 hours daily. To determine the vernalization requirement, plants were moved from 42° F after three, six, nine or 12 weeks. Recommended environmental conditions following the cold treatment are similar to those of pansy production. Plants were, therefore, moved to 60° F, 16 hour day length and 750-800 fc (8.6 $\text{mol day}^{-1}\text{m}^{-2}$). Increasing the fertilizer rate following the cold treatment to 150-200 ppm nitrogen is expected to be beneficial.

Time to flower and growth habit following the cold treatment varied both within and among cultivars. General trends were, however, similar, and flowers appeared faster after a longer cold period (see Figure 1, right). Increasing the cold from 3-6 weeks reduced time to flower by approximately two weeks. Another three weeks of chilling reduced flowering time by seven

more days, and 12 weeks of chilling, yet another seven days. On average, 21 days were required at 60° F for the first flowers to appear after 12 weeks of cold, and

LIGHT DURING COLD TREATMENT

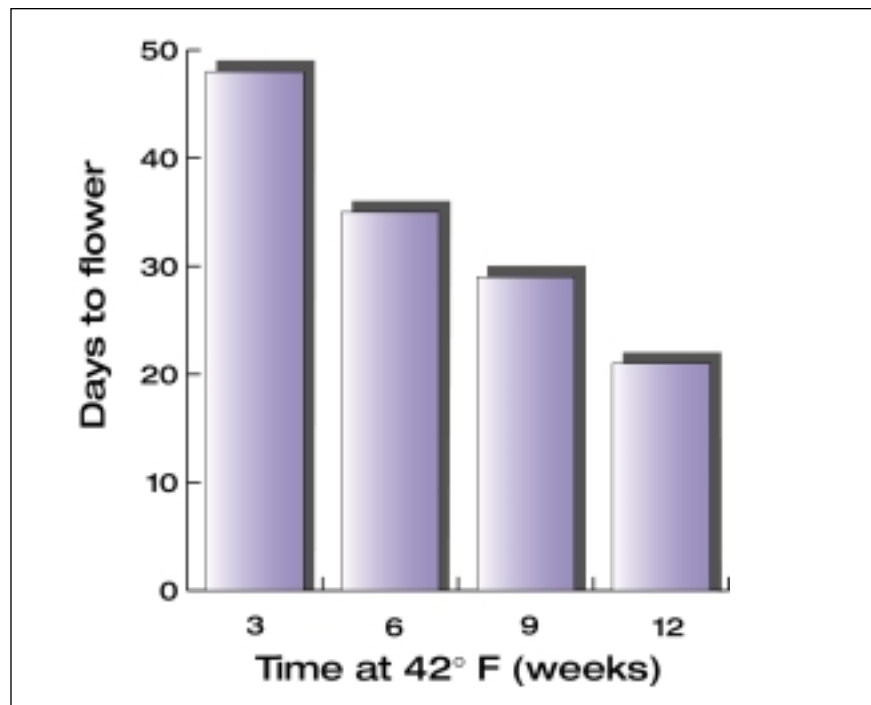
Recent studies with herbaceous perennials suggest a cold treatment at higher irradiance will more effi-

plants were grown at 60° F and 900 fc until flowering. Snowsylvia, Rosylvia and Bluesylvia were included in this experiment.

Increasing the irradiance during the 42° F phase from 100 to 900 fc did not result in faster or more efficient flowering. Earliest flowering at 60° F was observed for Snowsylvia after 15 days following the six weeks at 42° F and 100 fc. Bluesylvia and Rosylvia required 3-4 more days to first open flower. For plants exposed to the higher irradiance during cold treatment, flowering was delayed 8-10 days in all three cultivars. With the exception of limited sporadic flowering, plants kept at 60° F and 100 or 900 fc did not flower.

The number of shoots and flowers was higher at 100 fc rather than 900 fc during the cold treatment. Bluesylvia and Snowsylvia produced approximately 30 and Rosylvia 20 flowering branches per plant using the 100 fc and 42° F environment. In contrast, the branch number decreased to 18 for Bluesylvia and 12 for Snowsylvia and Rosylvia when 42° F was combined with 900 fc. The flower cymes and stems, however, were sturdier, and the plants more compact with higher irradiance during the low temperature exposure.

Figure 1. Days to first open flower at 60° F following exposure to 42° F for various length.



49 days with three weeks of cold. These results suggest plants can be kept at cold temperatures for long periods and forced for special occasions and markets. Plants grown at 60° F without any chilling did not flower within the seven months of the study.

ciently induce flowers in some species than the recommended 100-150 fc. Plants were grown at 42° F and 100 fc (one $\text{mol day}^{-1}\text{m}^{-2}$) or 900 fc (10 $\text{mol day}^{-1}\text{m}^{-2}$) during a 16-hour day. As a comparison, plants were also grown at 60° F and 100 or 900 fc. After six weeks, all

Keeping quality and duration of flowering may, therefore, vary depending on conditions during the cold treatment.

PLANT MANAGEMENT

Pinching the top growing point to release apical dominance induces branching and more flow-

ering shoots. Since the effect of pinching varies from one plant species to another, experiments are required to determine proper timing, procedure and scheduling. Forget-me-not Compindi and Musik were pinched either immediately prior to or at the end of the 6-week exposure to 42° F. Time to flower and number of flowering shoots were recorded at long days and 60° F following the cold treatment.

Without a pinch, plants produced, on average, 3-4 flowering branches. Pinching plants at the beginning or end of the 42° F exposure generally resulted in faster flowering compared to intact plants. The faster flowering was unexpected, as pinching is known to slow overall rate of growth and flowering in most other plant species.

CONCLUSION

Initial studies on the opportunity to produce forget-me-not as a flowering potted plant are promising. For best plant development and flowering, day length, temperature and light condition following the cold treatment still need to be evaluated. Consumer acceptance of locally produced flowering potted forget-me-not has been overwhelming. The demand for special occasions and the scarce availability suggest consumers are willing to pay a premium price for flowering potted forget-me-not. GPN

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Left to right: Forget-me-not 'Alaska State flower', Denali Seed Co., Anchorage, Ala.; Forget-me-not 'Bobo series Blue', 'Indigo Blue' and 'Bluesylva', Germania Seed Co., Chicago, Ill.

ering shoots. Since the effect of pinching varies from one plant species to another, experiments are required to determine proper

The number of branches per plant increased to between eight and 12 with either a pinch prior to or at the end of the cold treat-



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