

# Herbaceous Perennials: Noteworthy Plants

by **BETH FAUSEY, ARTHUR CAMERON,**  
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**T**HE number of quality perennial species and cultivars available within the horticulture trade is almost overwhelming. To date, the Michigan State University herbaceous perennial research program has evaluated the greenhouse performance of more than 300 popular herbaceous perennials, many of which we have featured in past issues of *Greenhouse Grower's Firing Up Perennials*.

*Firing Up Perennials* articles have traditionally detailed crop production information. In this installment we would like to depart from that format and present preliminary greenhouse

## Part two of our 12-part series on herbaceous perennials examines two noteworthy plants.

performance results for two promising perennials – *Corydalis lutea* and *Geranium sanguineum* 'New Hampshire Purple.'

### *Corydalis lutea*

*Corydalis lutea* is a delightful species with delicate fern-like foliage and fragrant yellow flowers. It is a European native but can be grown successfully in zones 4 to 7. The name "corydalis" is derived from *korydalis*, a greek word meaning "crested lark," in reference to the spurred flowers. *C. lutea* prefers shady,

## Schedule

Michigan State University researchers' 12-part series on herbaceous perennials will cover topics from light to plant growth regulators to various species.

January: Light

February: Series Did Not Run

**March: Noteworthy plants**

April: Propagation

May: *Heuchera*

June: Plant growth regulators

July: *Scabiosa/Phlox subulata*

August: Garden performance

September: Ground covers

October: Quick-cropping

November: *Hemerocallis*

December: Postharvest

January: *Tiarella/Heucherella*

Figure 1a.

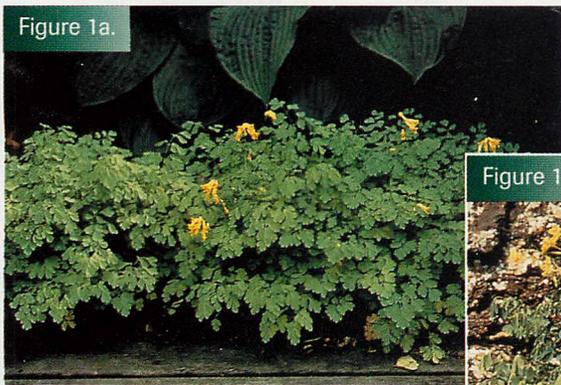


Figure 1b.



Figures 1a and 1b. *Corydalis lutea* flowering among hostas in a shade garden (a). *C. lutea* sown in the crevice of an English stone wall (b). Photos courtesy of Marlene Cameron.

### CORYDALIS LUTEA

0 WEEKS COLD AT 5°C

7 WEEKS FORCING AT 20°C

PHOTOPERIOD

9 HR	INC	-16HR	HPS
	PERCENT VISIBLE BUD		
	PERCENT FLOWERING		
30	70		100
10	40		50

Figure 2.

Figure 2. Complete flowering of noncooled plants only occurred under 16-hour photoperiods delivered with high pressure sodium lamps (HPS). Photo courtesy of Beth Fausey.

## PERENNIALS

### SERIES

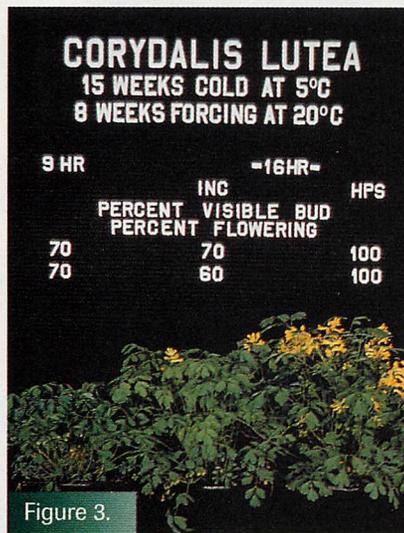
moist areas and will bloom from spring through fall in the cooler climates of the Midwest and northern United States (Figure 1a). Plants prefer slightly alkaline, well-drained soils and have been known to self-sow freely (too freely at times) in ideal sites such as rock gardens or stone walls (Figure 1b). Plants form handsome 15-inch tall mounds that span 18 to 24 inches.

*C. lutea* is traditionally produced from seed. Ripe capsules yield generous amounts of seed reportedly having complex dormancy requirements. These requirements must be overcome for germination to occur. Traditional recommendations suggest exposing seed to warm temperatures (55°F to 65°F) followed by cold (38°F), moist conditions. Commercial growers have reported inconsistent germination and limited supplies.

In our experience, noncooled, seed-propagated plants with as few as three to four leaves from a 32-cell tray flowered in six to seven weeks when grown under 16-hour long day (LD) treatments that were supplied with either incandescent (INC) or high pressure sodium (HPS) lamps (Figure 2). Few noncooled plants flowered under a nine-hour short day (SD) treatment. Following 15 weeks at 41°F, *C. lutea* behaved as a day-neutral plant. Plants flowered under both LD and SD, though flowering was slightly faster for plants grown with supplemental light, likely due to warmer plant temperatures (Figure 3). Cold temperatures are not absolutely required for flowering, but hastened flowering by two weeks under LD and four weeks under SD.

Although *C. lutea* is a shade plant, plants were more attractive and produced more flowers when grown with higher light in our greenhouses (Figure 4). On average, plants under HPS received 11 to 13 mol•m<sup>2</sup>•d<sup>-1</sup>, which was about 35% to 40% more light than SD or INC treatments. We recommend growing *C. lutea* with supplemental light provided by high pressure sodium lamps when natural light levels are less than 10 mol•m<sup>2</sup>•d<sup>-1</sup>.

Plants flowered continuously in our experiments and held spent flowers for an extended time. However, when plants were moved directly from the greenhouse to an interior low-



**Figure 3.** Following 15 weeks of cold at 41°F (5°C), *Corydalis lutea* responded as a day-neutral plant and flowered under all photoperiods. Plants flowered slightly faster with supplemental light. Photo courtesy of Beth Fausey.



**Figure 4.** *Corydalis lutea* makes an attractive display in a container or garden setting. Photo courtesy of Beth Fausey.



**Figure 5.** Vibrant, magenta flowers of the species *Geranium sanguineum*. Photo courtesy of Ann Hancock.



**Figure 6.** Dark green, deeply lobed leaves and deep magenta flowers make *Geranium sanguineum* 'New Hampshire Purple' a fabulous container plant. Photo courtesy of Beth Fausey.

light setting, all flowers dropped within a few days.

*C. lutea* is relatively pest free but can be susceptible to *Rhizoctonia*. Infrequent but thorough waterings will reduce disease incidence. No insect pests were found.

A long bloom time, attractive foliage, and easy production make *C. lutea* a promising perennial for container production.

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## PERENNIALS

### SERIES

#### *Geranium sanguineum* 'New Hampshire Purple'

With more than 250 species and an equal number of named cultivars, hardy geraniums are by far one of the more popular and diverse herbaceous perennial genera grown today. We previously reported production protocols for *Geranium dalmaticum*. Another geranium with great crop potential is *Geranium sanguineum*, or bloody cranesbill.

Although native to Eurasia, *G. sanguineum* has become an excellent, dependable garden plant throughout the United States (Figure 5). It is a low, mounding perennial naturally compact to 12-inches tall. Dark green, deeply lobed leaves provide a backdrop to stunning magenta and violet saucer-shaped flowers (Figure 6). Many *G. sanguineum* cultivars should be suitable for container production.

*G. sanguineum* 'New Hampshire Purple' has clear, deep magenta flowers. In the garden, flowering is heavily concentrated in the spring and early summer for a period of six to eight weeks. Plants will continue to flower sporadically through autumn. A mature plant in the garden may reach 12 to 18 inches, but divisions transplant-

ed from 2<sup>1</sup>/<sub>2</sub>-inch containers reached a maximum of six inches over a 15-week period in our greenhouse trials. Plants form clumping crowns that can be propagated by division.

Noncooled divisions from 2<sup>1</sup>/<sub>2</sub>-inch containers with five to six leaves flowered in seven to eight weeks under 16-hour long days (LD) compared to 11 weeks under nine-hour short days (SD) (Figure 7). Thus, it appears that LD were beneficial but not required for flowering. Although a cold treatment was not essential for flowering, 'New Hampshire Purple' flowered under all photoperiods and thus behaved as a day-neutral plant following cold (Figure 8).

Flowering was hastened three weeks under LD and six weeks under SD following a 15-week cold treatment compared to noncooled plants. Although this was the only cold treatment tested, 'New Hampshire Purple' likely requires fewer weeks of cooling (probably six to nine) for vigorous growth and flowering.

'New Hampshire Purple' performed best when plants were given ample light. Plants grown under HPS lamps received approximately 500 footcan-

#### Formula for Success: *Corydalis lutea* and *Geranium sanguineum* 'New Hampshire Purple'

1. Begin with healthy, well-rooted plants.

2. Cool plants prior to forcing. We only tested plants cooled for 15 weeks at 41°F (5°C). Based on previous experiences, we suggest that six to nine weeks will probably be sufficient.

3. Provide high-intensity supplemental lighting when natural light levels are below 10 mol•m<sup>-2</sup>•d<sup>-1</sup>, generally during the winter, to improve plant quality and flowering characteristics. Plants may not flower in winter, even under LD, without this extra supplemental light (at least in Michigan).

dles of light at plant level and produced up to 50% more flowers than either SD or INC treatments. On average, plants grown under SD and INC received 8 to 9 mol•m<sup>-2</sup>•d<sup>-1</sup> while those grown with HPS lamps received 11 to 13 mol•m<sup>-2</sup>•d<sup>-1</sup>. As a rule, we recommend growing with supplemental light provided by high pressure sodium lamps when natural light levels are less than 10 mol•m<sup>-2</sup>•d<sup>-1</sup>. Sufficient light quantities improve flowering characteristics and overall plant quality, as well.

This cultivar benefits from dead-heading, and plants can be sheared back to promote an additional flush of growth followed by flowering. Although 'New Hampshire Purple' plants were relatively trouble-free in our trials, they did attract two-spotted spider mites.

The compact habit and deep magenta flowers of 'New Hampshire Purple' thus make this hardy geranium a showstopper in a container and in the garden. **GG**

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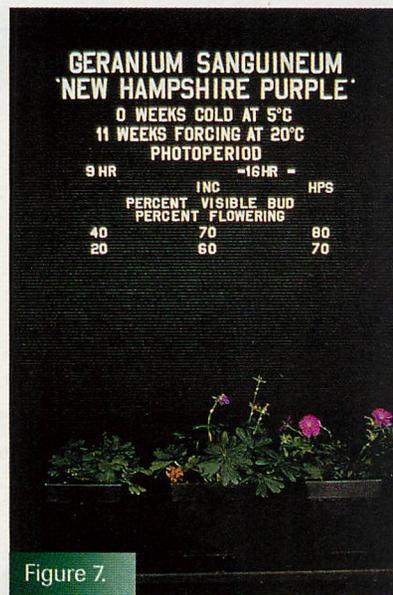


Figure 7.

Figure 7. Flowering of 'New Hampshire Purple' was greater under LD than SD prior to a cold treatment. Photo courtesy of Beth Fausey.

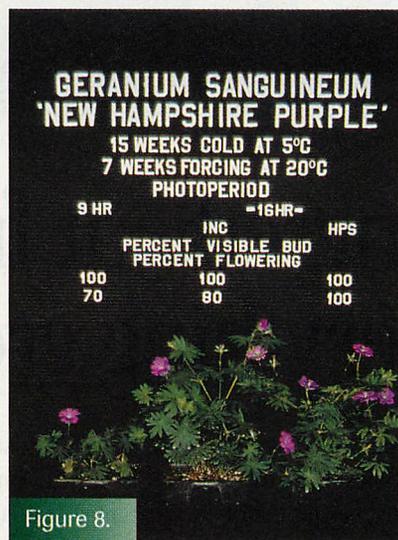


Figure 8.

Figure 8. Following cold treatment, plants flowered in approximately five to six weeks under all photoperiods. Plants were of higher quality and produced more flowers when grown with high pressure supplemental lamps (HPS). Photo courtesy of Beth Fausey.