

Herbaceous Perennials: *Ceratostigma plumbaginoides*

Part eight of our 13-part series on herbaceous perennials takes a look at the ground cover *Ceratostigma plumbaginoides*, or leadwort.

by **GENHUA NIU, THOMAS GRIFFING, ERIK RUNKLE, ROYAL HEINS, ART CAMERON, and WILL CARLSON**

CERATOSTIGMA *plumbaginoides* is a member of the Plumbaginaceae family. There are eight species in this genus, and all are deciduous perennials and shrubs from eastern Africa and eastern Asia. These plants are grown for their attractive fall foliage and bright blue flowers.

Commonly known as leadwort or dwarf plumbago, *C. plumbaginoides* is native to China and is hardy in USDA zones 5 to 9. Leadwort can be used as a durable ground cover, reaches six to 10 inches tall, and spreads readily (Figure 1). The deep gentian blue, 3/8-inch diameter flowers appear from late summer through autumn. Leaves emerge in late spring and turn to a rich coppery bronze in late fall. Plants prefer full sun, but can tolerate some shade.

This plant can also be used as an edging between paths and turf areas, or as a turf substitute in tree-containing island beds of parking areas.

1. Propagation

Leadwort can be propagated by cuttings, division in the spring, or seed. We have found that cuttings root easily within two weeks under any pho-



Figure 1.



Figure 1. *Ceratostigma plumbaginoides* is an excellent ground cover with attractive blue flowers and coppery bronze fall foliage.

Schedule

Michigan State University researchers' 13-part series on herbaceous perennials covers topics from light to plant growth regulators to various species.

January: Light

February: Series Did Not Run

March: Noteworthy Plants

April: Propagation

May: Series Did Not Run

June: *Heuchera*

July: Plant Growth Regulators

August: *Phlox subulata*

September: *Scabiosa*

October: Ground Cover I

November: Ground Cover II

December: Fast-cropping

January 2002: *Hemerocallis*

February 2002: Postharvest

March 2002: *Tiarella/Heucherella*

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toperiod. Once rooted, plants are best bulked under continuous light (24-hour photoperiod) to prevent flowering.

2. Cold Treatment

Cold treatment provides no beneficial effect on growth or flowering of leadwort. However, plants can be stored in coolers if desired.

3. Photoperiod

Leadwort has an unusual flowering response in that it is an intermediate

Table 1. *Ceratostigma plumbaginoides* Production Schedule*

Growing time	Cultural practice	Temperature	Photoperiod
	Maintain stock plants	68°F to 74°F (20°C to 23°C)	24 hours
2 weeks	Take cuttings ↓ Root	Media temperature ~77°F	24 hours
1 week	Bulk in plug, then pinch	68°F	24 hours
0 to 1 week	Bulk	68°F	24 hours
7 weeks	Force to flower	68°F	14 hours

*For production in 1801 flats

Figure 2.

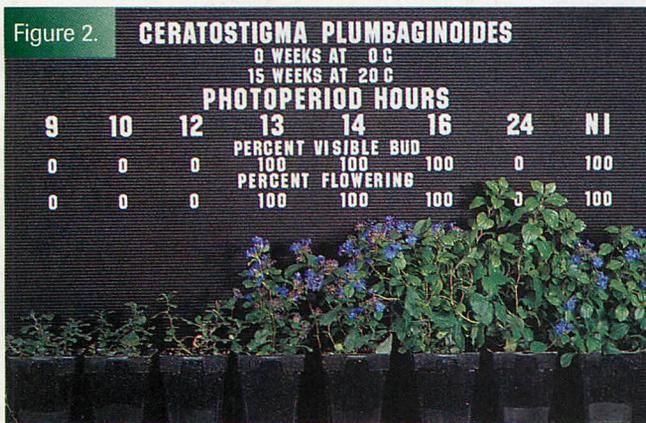


Figure 2. *Ceratostigma* flowered under 13, 14, or 16 hours of continuous light, and under a nine-hour day with a four-hour night interruption. Flowering was fastest under 14-hour daylength. Plants remained vegetative when grown under continuous light (24 hours), and plants grown under 12 hours or shorter became dormant.

daylength plant. Plants flower most uniformly and rapidly under a 14-hour photoperiod. Flowering is delayed or inhibited as the daylength becomes shorter or longer than 14 hours (Figure 2).

Under a 14-hour day, plants flower in seven weeks at 68°F. Under a 24-hour photoperiod, plants grow vigorously but do not flower (Figures 2 and 3). Plants become essentially dormant under daylengths less than 12 hours. Once induced to flower under a 14-hour photoperiod, plants will continue to flower under other photoperiods, but not as predictably or vigorously. Therefore, we recommend forcing the plants under 14 hours for flowering. For stock plants and bulking, continuous lighting (24-hour photoperiod) is recommended.

4. Height Control

In the Michigan State University gardens, the plants grow to 18 to 24 inches in established beds and produce flowers in late July. In our experiments, plant height increased as forcing photoperiod increased (Figure 2). Production in flats requires growth retardant application for compact plants. Bonzi at 60 ppm or Sumagic at 15 ppm applied as a spray

Formula For Success: Leadwort

1. Grow stock plants under continuous light (24-hour photoperiod) to ensure vegetative growth.
2. Take shoot tip cuttings and root them under 24-hour photoperiods to maintain vegetative growth.
3. If desired, pinch, then bulk rooted cuttings under a 24-hour photoperiod if desired.
4. Grow plants under 14-hour photoperiod for flowering.
5. If grown in small containers, use multiple applications of growth retardants to keep plants compact.

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Figure 3.

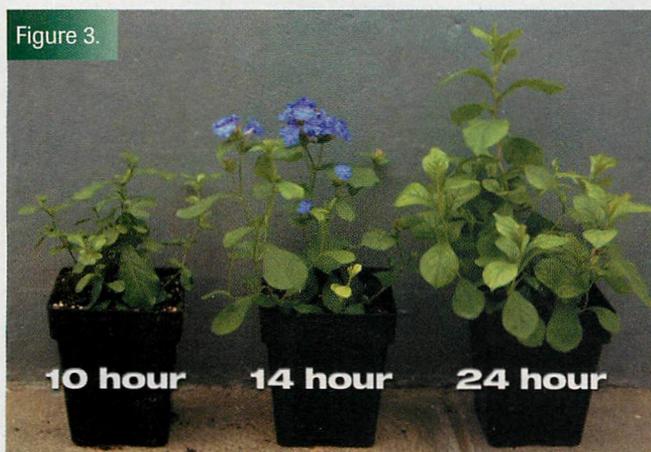


Figure 3. Plants grown under 10-hour photoperiods (left) go dormant, flower most rapidly and uniformly under 14-hour photoperiods (center), and remain vegetative under 24-hour photoperiods (right).

are both effective in controlling height and producing compact flowering plants.

While Cycocel is effective, it causes severe chlorosis and thus is not recommended. Bonzi sprayed at 60 ppm three times at two-week intervals produced attractive compact plants in 1801-cell flats (Figure 4). For larger containers, multiple cuttings might be most appropriate to fill the container. **GG**

Figure 4.



Figure 4. Compact flowering *Ceratostigma plumbaginoides* can be produced in 1801 flats using growth regulators. The three pots on the left of the flat had two cuttings propagated per pot; the three rows of pots on the right had only one cutting per pot. All plants were pinched.

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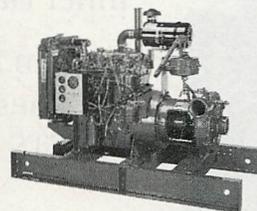
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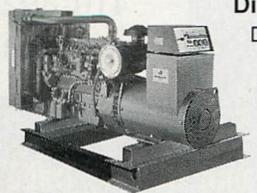
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