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Fact Sheet

Fact Sheet 467

Enterprise Guide for Southern Maryland: Producing Cut Flowers--Liatris

This fact sheet is one in the series Enterprise Guide for Southern Maryland, *providing information about alternative agricultural enterprises for farmers.*

Many farmers in Southern Maryland are considering alternative enterprises to supplement their incomes. If you choose to grow an alternative crop, consider growing liatris. Liatris, also known as blazing-star, gayfeather, devils colic, rattlesnake-master or button-snakeroot, has increased in popularity and demand as a cut flower crop for both greenhouse and outdoor production. The genus liatris is a member of the composite family which consists of about 40 species (Table 1). *Liatris spicata, L. aspera* Michx. and *L. pycnostachya* Michx. are the major commercial species.

Table 1. Liatris species and cultivars

Botanic name	Common name	Height (feet)	Color	Normal bloom time
L. aspera	Rough blazing-star	6	Purple	Aug.
L. gramnifolia	Loose-flowered or Button-snakeroot	4	Purple	Aug.-Oct.
L.punctata	Dotted blazing-star	1	Purple	Aug.-Oct.
L. pycnostachya	Tall blazing-star	3-5	Rose-purple	Aug.-Sept.
L. pycnostachya alba		3-5	White	Aug.-Sept.
L. pycnostachya	Eureka	3-6	Deep rose purple	Aug.-Sept.
L. scariosa	September glory	4	Deep purple	Aug.-Sept.
L. scariosa	White spire	3	White	Aug.-Sept.
L. spicata	Gayfeather	6	Rose-purple	Aug.-Sept.
	Atlantic	2½	Rose-purple	Aug.-Sept.
	Kobold	1¼-1½	Rose-lavender	July-Aug.
	Floristan violet	3	Purple	July-Sept.
	Floristan white	3-4	White	July-Sept.

Selecting Varieties

All liatris varieties are perennials with erect, leafy, normally unbranched stems. Most varieties develop several upright flowering stems from round or oval woody corms. Liatris have flowering spikes (inflorescence) that open from the top downward (basipetally). One variety, *Liatris aspera*, flowers from the base to the tip. The individual flowers are normally lavender to purple with several white varieties available in limited supplies. Those varieties that are in the greatest demand are the purple varieties.

Cultivating the Crop

Cuttings

Cuttings are not widely used commercially because they produce short flowers. If you choose this method, however, insert leaf cuttings into perlite with intermittent mist for 6 seconds every 15 minutes, 14 hours a day. They should root in 21 days. Although leaves root freely, corm formation does not occur readily.

Seeds

The seeds require a stratification treatment of 63 days at 4°C. Dry storage treatment at a 4°C temperature, results in only 74 percent of the seeds sprouting. Growing liatris from seeds is not a recommended procedure for propagation because of the specialized seed handling required.

Corms

Corm division is the most frequent propagation method used. Corms that are 2 to 7½ centimeters long produce the greatest number of flowering stems, with uniform shoot development, superior flower color, form and quality. If you use corm division, the flower stems will be longer than the stems cultivated by the other methods. Divide the corm into single growing point divisions. Then treat the corm with a fungicide to prevent the corm from rotting.

Choosing a Planting Site

Liatris species normally grow in dry soils with pH levels of 6.5 to 7.0, though they grow successfully in wide ranges of soil texture and fertility. Irrigate the field to ensure that the plants will produce long stems and use water-retentive soils. Sometimes wire support is needed as the stems elongate, but use support only in windy areas.

There is little information available on the fertilization requirements of liatris, although most growers treat liatris as a medium nitrogen-requiring plant.

Planting the Crop

Plant four to six corms per square foot to avoid an erratic root system, and to control diseases (chlorosis often indicates poor rooting). *Liatris spicata* cultivars usually require 70 days to flower in Maryland if planted outdoors between the the end of March and the beginning of September. The number of flowering stems per corm decreases as the daylength increases. Corms planted in the field during May and June require 70 days to flower, but corms planted in June require 55 days to flower. The duration of the harvest period (10 to 15 days) appears to be the same regardless of the planting date.

To ensure continuous harvest throughout the growing season, plant corms every 10 to 15 days, starting in early March and ending in mid-August, depending on local weather conditions. The flowers will be ready to harvest 70 to 95 days after planting. Use a 2-year planting rotation (Table 2).

Table 2. Planting rotation

Year	Instructions
1	Sequentially plant the corms.
2	Sequentially plant the corms, but do not plant during May. (The 1st year planting that remains in the field will flower naturally in July.) During the fall, dig the 1st-year corms and divide them.
3	Sequentially plant the 1st-year corms.

Controlling Pests

Insects

No one insect group causes significant damage to liatris. Bulb mites may damage some corms and eventually cause bacterial rot. Corm borers can appear in corms that dry out in the beds for more than 8 weeks. Whiteflies could become a problem if not controlled in the greenhouse. Bees and wasps also may become a nuisance during harvest.

Diseases

Powdery mildew can be a serious problem if you do not control it chemically or provide good air circulation. Without a well-drained soil, problems with verticillium wilt can be significant. Drench the soil after planting with truban plus benlate to prevent disease problems.

Brown leaf spots may be a problem for your liatris crop. The spots appear first on the leaves and then on the stem. After 5 or 6 days, the stem completely wilts. This disease appears on isolated plants and sometimes causes signficant crop loss.

Weeds

If you grow liatris outdoors, you will need a vigorous weed control program or plastic weed barriers. Consult the author for current herbicide recommendations.

Harvesting the Flowers

Harvest the flowers when the first 5 centimeters (2 inches) are fully colored. When stems are cut prematurely and placed in water, the flowers do not continue to develop. The stems should be cut about 5 centimeters (2 inches) above the ground.

After harvest, leave the plants in the soil for 4 to 6 weeks. Once corms are 2 to 7½ centimeters long, dig them up and place them on trays inside a cooler. Cover the corms with moist peat, but do not cover the foliage. After 2 to 4 days the foliage will have dried and can be easily removed. Store the turgid corms at 2.5°C until graded.

Liatris corms are hardy, so you do not have to dig them up in the fall. When corms are left in the field during the summer, they become dormant. They require a cold environment to promote sprouting and shoot elongation. Leave the corms in the soil where the 2.5°C soil temperature will activate them, or place the corms in moist peat moss and store in a cooler for 10 weeks at 2.5°C. After the corms have received the cold treatment, dip them in water and store at -2°C until they are planted. If the corms have not received a cold treatment, soak them in 500 to 1,000 parts per million (ppm) of ProGibb for 1 hour.

Liatris do not require cold temperatures to induce flowering.

There is little information on postharvest care, but liatris lasts up to 2 weeks at room temperature if stems are recut and fresh water is added daily. Vase life of bud cut liatris increases if the cut stems are placed in a solution of 5-percent sucrose and 200 ppm of Consan.

Costs and Returns

Returns Per 1,000 Square Feet of Bed Area Planted

Percent Grade #1	Market Price (Grade #1/2)			
	$.50/.30	$.40/.20	$.30/.10	$.20/.05
60	$1,890	$1,440	$ 990	$630
75	2,024	1,575	1,125	731
90	2,160	1,710	1,260	883

Cash Cost Per 1,000 Square Feet of Bed Area Planted

Fumigation	$ 25.50
Trickle tube	43.50
Fertilizer/pre- and post-plant	5.50
Plant support	150.00
Weed control	1.00
Cover crop	1.70
Corms (5,000)	450.00
Labor (20 hr)	120.00
Buckets	40.00
Bunching supplies	50.00
Floral preservative	4.00
Harvest labor (20 hr)	120.00
Total	$1,011.20

Liatris are sold in bunches of 10 stems with grade No. 1 stems longer than 30 inches. Normally 10 percent of stems are unsaleable because of insect, disease or mechanical problems. The table indicates the anticipated harvest income per 1,000 square feet when the percentage of grade No. 1 shoots increases at different market prices for grade nos. 1 and 2 shoots. (The corms used were 8 to 10 centimeters.)

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1991