

## *Spigelia marilandica* Propagation: A Review<sup>®</sup>

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### INTRODUCTION

*Spigelia marilandica*, Indian pink, is native to west Kentucky. Infrequent in southern Kentucky (Wharton and Barbour, 1971) it is found as a roadside plant on a range of soil types. Over its range, Florida into east Texas, southeast Oklahoma, southwest Indiana, northwest Georgia, and east South Carolina it is common (Duncan and Duncan, 1999). The red tubular flowers with five folded lobes showing the yellow interior color are stunning; “stop people dead in their tracks” (Armitage, 1997). An average of 13 (8 to 17 on 68 stems on a 5-year-old division) of the 2 inch (5 cm) upright flowers are found on a one-sided cyme. The glossy ovate, opposite, sessile leaves add to the attractive appearance of the plant. West Kentucky plants grow 18 to 24 inches (46 to 61 cm) tall in sun or shade landscape environments. The bloom period starts in late May and continues through June, occasionally scattered blooms will occur in the fall. Rick Darke (2002) says they will re-bloom heavily if cut back after June flowering. Individual plants in the University of Kentucky Research and Education Center Botanic Garden (UKREC), Princeton, Kentucky are now 7 years old and show signs of indefinite longevity. *Spigelia marilandica* is known to attract hummingbirds (Cullina, 2000; Glick, 2002) adding this characteristic to the beauty of the flowers, the size of the plant, its environmental and pest tolerances, and longevity in the landscape indicate *S. marilandica* is a plant that should be more widely used in landscapes, in particular, Kentucky landscapes. A quick search of catalogs and nursery calls indicate the plant is available in limited numbers, but Schmid (2002) states “this dazzling native is still uncommon in gardens and deserves to be more widely grown”. Propagation difficulties have limited availability in the past.

### PROPAGATION

**Seed Propagation.** *Spigelia marilandica* seed is found in a two-sided capsule. The seeds are grouped into small balls of 4 to 7 seeds that separate readily. The capsules ripen from 1 July through 15 July in the UKREC Botanic Garden. Unfortunately, within 1 or 2 days the seed will “explosively dehisce” (Darke, 2002) and be lost to the seed collector. The capsule will be black on the top and black-green on the bottom just before this happens; seed capsules collected at this time will split open ejecting the seed into the bag shortly after removal from the plant. Seed collection requires daily observation. It is recommended that seed be sown immediately after collection to ensure high percentage germination (Cullina, 2000; Glick 2002). Two-year-old seedlings will bloom. Barry Glick (2002) states deer don't browse *S. marilandica* but our experience trying to collect seed in the wild would indicate that deer or some other creature does eat the flowers and stem down to the foliage in a similar fashion to deer feeding observed on *Trillium recurvatum* in west Kentucky.

**Division Propagation.** Building up a group of stock plants that can provide enough seed to produce thousands of plants is possible but such a collection of

plants may be better used to propagate *Spigelia marilandica* by division. We have had very good success propagating by division. Field-grown plants in an irrigated nursery environment produce a dense fibrous root system. The root system density requires cutting the plants apart with a sharp knife or pruners to separate the divisions. Some, but not all, divisions will bloom the first year. Glick (2002) recommends dividing in the spring: the plants are late growing and there is adequate time to spring divide. Plants propagated by division, including *S. marilandica*, at the UKREC that are to be placed in the landscape or field nursery are divided prior to fall equinox (approximately 20 Sept.) to allow time for root development to limit frost heaving damage. Late fall-divided plants (after fall equinox) are containerized and placed, in a white plastic covered quonset structure or under microfoam for overwintering. We also divide *S. marilandica* in the spring.

**Cutting Propagation.** J. C. Raulston (1990) stated "... for a cultivar to be a mass-marketed item, it's going to have to be propagated by stem cuttings". *Spigelia marilandica* can be propagated by stem cuttings (Bir and Barnes, 2000; Cullina 2002; Foster and Kitto, 2000). Tip cuttings should be taken from plants that have not flowered; the taking of cuttings keeps the plants from flowering making it possible to harvest cuttings two or three times before the plants stop growing in the fall. Foster and Kitto (2001) were able to take tip cuttings every 8 weeks from stock plants maintained in a regulated greenhouse environment. They recommend growing on the rooted cuttings in the same environment to improve root development. The *American Nurseryman* article by Foster and Kitto (2001) contains descriptions of the materials and methods making it possible to reproduce the 91% rooting they reported in a *HortScience* abstract (2000). Bir and Barnes (2000) "Tips for Success When Rooting *Spigelia marilandica*" include: taking 2- to 3-node tip cuttings from non-flowering stems; apply 2000 to 3000 ppm IBA liquid; root in a well-drained medium; direct stick in small pots, root and grow in 50% shade; and overwinter in a minimally heated greenhouse. The 2000 ppm IBA liquid treatment was also recommended by Cullina (2000). Perlite based rooting media: 2 perlite : 1 sphagnum peat (v/v) or 4 perlite : 1 peat (v/v) was used in rooting experiments by Bir and Barnes (2000) and Foster and Kitto (2001) respectively .

## CONCLUSION

Depending on the resources of the propagation nursery; propagation by seed, division, or cuttings, or a combination of the different propagation methods, should make it possible to meet increased demand for this desirable plant.

## LITERATURE CITED

- Armitage, A.M.** 1997. Herbaceous perennial plants: A treatise on their identification, culture, and garden attributes, 2<sup>nd</sup> Ed. Stipes Publishing, Champaign, Illinois.
- Bir, R.E.** and **H.W. Barnes.** 2000. Rooting pinkroot...then keeping them alive. *Comb. Proc. Intl. Plant Prop. Soc.* 50:372-373.
- Cullina, W.** 2000. The New England Wildflower Society guide to growing and propagating wild flowers of the United States and Canada. Houghton Mifflin Co., Boston, New York.
- Darke, R.** 2002. The American woodland garden: Capturing the spirit of the deciduous forest. Timber Press, Portland, Oregon.
- Duncan, W.H.** and **M.B. Duncan.** 1999. Wildflowers of the eastern United States. The University of Georgia Press, Athens, Georgia.

- Foster, S.** and **S.L. Kitto.** 2000. Vegetative propagation of *Spigelia marilandica* (Indian pinks) from shoot-tip cuttings. HortScience 35(3):448 Abstr. 323.
- Foster, S.M.** and **S. Kitto.** 2001. Coming from good stock. American Nurseryman p. 38-39.
- Glick, B.** 2002. Splendid *Spigelia*—A beautiful wildflower that hummingbirds love. Plants and Gardens News 17(1): <<http://bbg.org/gar2/topics/wildlife/2002sp-spigelia.html>>
- Raulston, J.C.** 1990. Plant merchandising. American Nurseryman 172 (9):52-56, 58, 60-67.
- Schmid, G.W.** 2002. An encyclopedia of shade perennials. Timber Press, Portland, Oregon
- Wharton, M.E.** And **R.W. Barbour.** 1971. The wildflowers and ferns of Kentucky. The University Press of Kentucky, Lexington, Kentucky.

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## High Demand Native Plants from Maine®

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## INTRODUCTION

Interest in growing native plants has been increasing in recent years due to their countless landscape uses and value in preserving natural ecosystems (Cullina, 2000; Dreyer, 1993). To satisfy the market demand, Western Maine Nurseries, a well-established conifer liner nursery, diversified by adding a woody ornamental liner division in 1997. The initial goal was to grow potted woody liners focused on three perceived needs in the nursery trade: rare, unusual, and new introductions; superior cultivars of standard nursery stock with proven track records in extreme northern climates; and native plants with bio-mitigation applications. Of these three initial goals, native plant production has had, by far, the highest demand, accounting for up to 75% of our sales.

For the last 6 years, Western Maine Nurseries and University of Maine Horticultural Program have teamed up on the research effort on generating these native plants. The nursery is located in Fryeburg, Maine (U.S.D.A. Zone 4b) and the nearby White Mountains of New Hampshire dominates its climate. It is one of extremes with record summer temperature as high as 103 °F and winter low as -40 °F. The University of Maine is situated in Orono, Maine (U.S.D.A. Zone 4b). The temperatures are milder than Fryeburg because of ocean effects.

Maine is the northern-most state in the eastern United States. The region is on the boundary of the Northern Hardwood and the Southern Boreal Forest communities. The region's glacial past has left it with numerous wetlands as well as large deposits of sterile, rocky soils. The native plants of this area have adapted to these conditions and can tolerate extreme cold, short growing seasons, and are often adapted to wetland and or dry-land situations.

The increase in demand for native plants is a national phenomenon that is due in part to increased awareness of invasive plants by the general public. The war against invasive species has reached fanatical proportions in many areas (Pimentel et al., 2000). Numerous native plant demonstration gardens are springing up