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WILDFLOWERS FOR THE MID-ATLANTIC: WOODLAND SUNFLOWER (*Helianthus divaricatus*)

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INTRODUCTION

Woodland sunflower, *Helianthus divaricatus*, is a rhizomatous perennial wildflower native to the East Coast from southeast Maine to Florida (Gleason and Cronquist, 1963). Commonly found inland in dry woodland locations, it occurs only infrequently on the coastal plain. Woodland sunflower's upright form varies from 2 to 5 feet and its dark green, lance-shaped leaves have toothed edges and rough upper and lower surfaces. Vivid orange-yellow flower heads appear from July through September, with usually a single 1-1/4 to 2-inch flower head occurring per branch. In the fall, slightly flattened 4-sided achenes are produced from fertile disc flowers (Brown and Brown, 1984).

USES

Woodland sunflower is particularly useful for meadow and roadside plantings; massing plants gives a spectacular color effect. The National Plant Materials Center (NPMC) produces woodland sunflower seed and plugs for planting sites along Skyline Drive in Shenandoah National Park. Woodland sunflower is suitable for home perennial gardens, but should be given adequate space toward the back of a garden bed because of its height (Jones and Foote, 1990; Wilson, 1992) and capacity to spread by rhizomes.

SUITABLE SITES

Woodland sunflower grows naturally at the edges of wooded areas in either full sun or partial shade. It can grow on flat or sloping sites and does best on well-drained soil (Jones and Foote, 1990; Wilson, 1992). At the NPMC, woodland sunflower is maintained for seed production in full sun on well-drained sandy loam soil.

SEED COLLECTION AND AVAILABILITY

Available from mail-order native plant nurseries, seeds can also be collected from wild populations 3 to 4 weeks after flowering (Phillips, 1985). The NPMC has collected mature seeds in the mountains of western Virginia from late August through mid-September. Seeds can be shaken from the heads into a bag, and chaff is easily separated from seed using a table-top seed clipper.

In 1996 (the first year of production), plants in the NPMC's seed production field had few stems and as a result, fell over after flowering; flower stalks containing the seed heads had to be harvested using hand shears. This year, the plants have filled in and we anticipate harvesting seed with a combine. Following harvest, seed heads are spread out to dry. Seeds and chaff are

separated using a floor model 2-screen clipper. The seeds are stored dry in cloth bags at 35 °F until needed.

ESTABLISHMENT AND MAINTENANCE

The NPMC has used seedling transplants as a means of establishing woodland sunflower. Seeds are sown on a commercial germination mix in 392-cell seed flats (TLC Polyform Inc., Minneapolis, MN), watered, enclosed in polyethylene bags, and stratified for 4 weeks at 40°F. Seeds germinate 7 to 12 days after flats are removed from cold storage and placed in the greenhouse.

After 4 weeks of growth, woodland sunflower seedlings are moved into Ropak Multi-pot #2 containers (Steuwe & Sons, Corvallis, OR) or 72-cell flats (TLC Polyform Inc., Minneapolis, MN) in preparation for dibble planting at revegetation sites or transplanting into production fields, respectively. The NPMC uses a commercial peat : perlite mix and a time-release fertilizer in all plug trays. In order to encourage root system development and create bushier transplants and sturdier stems, plant tops are cut back to approximately 4 inches after 10 weeks of growth. A soluble fertilizer (20-18-18) is applied twice a week to young plants in the greenhouse. Plugs grown in Multi-pots are ready for the field approximately 13 weeks after germination. The NPMC has planted plugs directly in the ground from mid to late spring successfully; plants may flower the first growing season. By the second growing season, plants set 12 inches apart in the NPMC production field have completely filled in gaps due to vigorous growth from rhizomes.

Phillips (1985) recommends sowing other types of sunflower seeds directly into a prepared outdoor seedbed after the seeds have been stratified, and fall planting unstratified seed may be an option, but no studies have been done with woodland sunflower. No information regarding sowing rate for woodland sunflower is currently available.

Maintaining the production field of woodland sunflower at the NPMC entails hoeing around plants to reduce weeds followed by application of the pre-emergent herbicide trifluralin (tradename: Treflan, produced by DowElanco, Indianapolis, IN) to prevent weed seed germination. Plantings at revegetation sites have a better chance of survival if a non-selective contact herbicide, e.g. glyphosate (tradename: Roundup, produced by Monsanto, St. Louis, MO), is applied at least 10 days prior to transplanting plugs to remove any aggressive species (e.g. tall fescue, clover, or crown vetch).

SEED PRODUCTION

A 0.07 acre production field of woodland sunflower established at the NPMC in spring 1996 produced 9.8 pounds of seed in the same year. There are approximately 225,000 woodland sunflower seeds per harvested pound.

REFERENCES

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- Jones, Samuel B. and Leonard E. Foote. 1990. *Gardening with Native Wild Flowers*. Timber Press, Portland, Oregon. 195 pp.
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