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WILDFLOWERS FOR THE MID-ATLANTIC:
WHORLED COREOPSIS (*Coreopsis verticillata*)

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INTRODUCTION
Whorled coreopsis, *Coreopsis verticillata*, is a perennial wildflower whose native range extends from Maryland south to Florida (Gleason and Cronquist, 1963). The plant is commonly found in the dry soil of open woodland areas and along roadsides. It has a bushy form and can grow to a height of 20 to 30 inches. The dark green leaves of coreopsis are deeply divided and complement the plant's numerous 1 to 1-1/2 inch diameter pale yellow flower heads (Brown and Brown, 1984). Flowers bloom during June and July. Once established, coreopsis spreads readily by rhizomes (Jones and Foote, 1990).

USES
With its adaptability to dry sites, coreopsis is an ideal candidate for large-scale meadow or roadside plantings; mass plantings give the best color display during the season. The National Plant Materials Center (NPMC) has produced coreopsis plugs for a planting site along Skyline Drive in Shenandoah National Park. The bushy, rhizomatous nature of coreopsis makes it a good groundcover, but the plant is also suitable for specimen plantings in home perennial gardens (Jones and Foote, 1990). It produces nectar and is recommended for use in butterfly gardens (Sedenko, 1991).

SUITABLE SITES
Coreopsis grows naturally in full sun on dry or well-drained sites with sandy soil (Phillips, 1985). Poorly drained soils are not appropriate for this species.

SEED COLLECTION AND AVAILABILITY
Seeds are available commercially, from seed and nursery catalogs, but it is fairly unusual to find the native species *Coreopsis verticillata*. The cultivar *Coreopsis verticillata* 'Moon beam' is more commonly sold in the trade.

Coreopsis seeds can be collected from wild populations in the fall. The NPMC has collected mature seeds in the mountains of western Virginia in late August through September. Generally, the best time to collect seeds is about 1 month after the flowers have faded and the heads turn a dark brown (Phillips, 1985). Seeds can be shaken from the heads into a bag, or entire heads can be picked and later rubbed between ribbed rubber mats to dislodge the seeds. Any chaff is removed by fanning, sieving, or using a seed clipper.

In the small seed production field at the NPMC, seed heads are harvested in early November using hand shears. A combine will be used to harvest seed as the field size increases. Harvested heads are then spread

out to dry. Seeds are chaff are separated in a floor model or table top clipper. The seeds are stored dry in paper envelopes at 35 °F until needed.

ESTABLISHMENT AND MAINTENANCE

The NPMC has used seedling transplants as a means of establishing coreopsis on revegetation sites and in production fields. No special treatment is required before seeds are sown; however, a Maryland Department of Agriculture seed testing report on coreopsis seed harvested at the NPMC in 1996 indicated that 7 to 10 days of stratification prior to sowing increased germination from 25% to approximately 56%. Seeds are sown on a commercial germination mix in 392-cell seed flats (TLC Polyform Inc., Minneapolis, MN). Germination with first year harvested seed occurred over a 2-week period in the greenhouse. A different harvest date and/or stratification before sowing may help to improve uniformity of seed germination.

After 4 weeks of growth, coreopsis seedlings are moved into either Ropak Multi-pot #2 containers (Steuwe & Sons, Corvallis, OR) in preparation for dibble planting at revegetation sites or 72-cell plug trays (TLC Polyform Inc., Minneapolis, MN) for machine-transplanting into production fields. The NPMC uses a commercial peat:perlite mix and a time-release fertilizer in all seedling trays. In order to encourage root system development and create bushier transplants and sturdier stems, plant tops are cut back to 2 to 4 inches after 9 weeks of growth. A soluble fertilizer (20-18-18) is applied twice a week to young plants in the greenhouse. Plugs grown in either the Multi-pots or plug flats are ready for the field in approximately 13 weeks. The stems of coreopsis seedlings can be somewhat fragile and plugs should be handled carefully during transplanting. Plugs are planted directly in the ground in mid to late spring and may flower sporadically the first season.

According to Phillips (1985), coreopsis may be sown directly into a prepared seedbed and will germinate readily, but no information regarding sowing rate for the species is currently available.

Maintaining production fields of coreopsis at the NPMC entails monthly hoeing around plants to reduce weeds and/or planting a cover crop like hard fescue or red fescue between rows when plugs are transplanted. Plantings made at revegetation sites will have a better chance of survival if any aggressive species, such as tall fescue, clover, or crown vetch, are sprayed with a non-selective contact herbicide, such as glyphosate (tradename: Roundup, produced by Monsanto, St. Louis, MO) at least 10 days prior to transplanting plugs.

SEED PRODUCTION

It is possible to plant a production field from plugs and harvest seed from the field in the same year. In November 1996, the NPMC harvested just under 1 pound of seed from a quarter acre coreopsis production field started from transplants in the spring. It is anticipated that mature fields will be more productive.

REFERENCES

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