



United States Department of Agriculture  
Natural Resources Conservation Service  
Plant Materials Program

# Maple Grove Germplasm Lewis Flax

*Linum lewisii* Pursh

A Conservation Plant Release by USDA NRCS Aberdeen Plant Materials Center, Aberdeen, Idaho



Maple Grove Germplasm Lewis Flax is a Pre-Varietal Selected Class conservation plant released in 2003.

Maple Grove Germplasm Lewis flax (*Linum lewisii*) is a Selected Class Germplasm release of a native flax collection from the Maple Grove, Utah area. Maple Grove was selected by the Forest Service Rocky Mountain Research Station and Aberdeen Plant Materials Center for outstanding vigor, beauty, and competitiveness with grasses prevalent on sites where it was collected. The Natural Resources Conservation Service, University of Idaho and Utah Agricultural Experiment Stations, Utah Division of Wildlife Resources, and the Forest Service Rocky Mountain Research Station released Maple Grove in 2003.

### Description

Maple Grove Lewis flax is a medium-lived tap rooted perennial forb with few to many stems arising from a woody caudex. The stems bear small, alternate, linear leaves which range from 1/8 to 1 inch long. Plant height varies from 12 inches in arid sites to 36 inches when irrigated. Light-blue flowers bloom during the late spring and early summer. The petals are shed within 24 hours,

but new flowers continue to emerge for as long as six weeks.

### Source

Maple Grove Germplasm is a selection from a native plant collection made in Millard County, Utah in 1988 by the USDA Forest Service, Rocky Mountain Research Station, Provo, Utah. The collection site is a mountain big sagebrush plant community approximately 1 mile northeast of Maple Grove Campground in the Fishlake National Forest at an elevation of about 6,175 ft. Associated plants included Gambel oak, bluebunch wheatgrass, muttongrass, globemallow and mountain buckwheat.

Maple Grove was released to meet the demand for native flax to use in restoration of disturbed sites in the Intermountain West. It was chosen from 19 native collections from six western states. These were tested in field and greenhouse studies from 1989 to 1993. Maple Grove was selected over other accessions based on superior drought tolerance, plant longevity, seedling vigor, seed production and rust resistance.

### Conservation Uses

Maple Grove can be used for biodiversity enhancement in restoration and reclamation plantings, erosion control, habitat improvement and beautification in the Intermountain West. It can also be used in horticultural applications such as road-side improvement and dry landscaping applications.

### Area of Adaptation and Use

Maple Grove is adapted to the Intermountain West in sites receiving 12 to 18 inches annual precipitation. Maple Grove is best suited to sites with well-drained to moderately well-drained soils.

### Establishment and Management for Conservation Plantings

Maple Grove should be seeded with a drill or broadcast at a depth of 1/4 inch or less into a firm seedbed. The ideal seeding depth is 1/8 inch. Flax is not recommended for single species seedings. The full seeding rate (not recommended) for Maple Grove is 4 pounds Pure Live Seed (PLS) per acre. When used as a component of a mix, adjust to percent of mix desired. For mined lands and other harsh critical areas, doubling the seeding rate component of flax is not required.

The best seeding results are obtained from seeding in late fall to very early spring (due to the grass component of mixes) on heavy to medium textured soils and in late fall

on medium to light textured soils. Late summer (August - mid September) seeding is not recommended. Dormant fall seedings (preferred seeding period for flax) will pre-chill seed and reduce dormancy which may be present. Mulching, irrigation, and weed control all benefit stand establishment. Seedling vigor is good, but not as good as most grasses. Germination normally occurs the first growing season, but may not occur until the second growing season. Full flowering should not be expected until at least the second growing season.

Stands may require weed control measures during establishment. Because flax is a broadleaf plant, use of broadleaf herbicides is not recommended. Mowing the stand when weeds are beginning to bloom will reduce weed seed development. Grasshoppers and other insects may also damage new stands and pesticides may be needed.

### **Ecological Considerations**

This pre-variety release is from a species native to the Intermountain West and has no known negative impacts on wild or domestic animals. Maple Grove is not considered a weedy or invasive species but can spread to adjoining vegetative communities under ideal environmental conditions.

### **Seed and Plant Production**

Flax should be seeded in 24 inch rows at the rate of 2.5 pounds PLS per acre or 36 inch rows at the rate of 1.5 pounds PLS per acre (25 to 30 seeds per linear foot of row) to allow mechanical weed control. It should be seeded in early spring (April - May). Seeds that do not germinate in the year of planting will probably germinate in the following year.

Hand rouging within row and cultivation between rows will be required. Split applications of nitrogen in spring and fall and application of phosphorus in fall will enhance seed production. For optimum production, maintain soil moisture at field capacity during late-bud stage, pollination and re-growth.

Seed is generally harvested in late July to mid-August by windrowing before seed shatter and combining with pickup attachment once green stems have dried. Seed is mature when capsules are dry and seed is hard and dark in color. Flowering is indeterminate with mature capsules and some flowers present at harvest period. Some seed will shatter once capsules open. Seed should be allowed to dry to 12% moisture or less before placing in bins or to 15% moisture or less before placing in sacks, and then

stored in a cool dry area. Seed retains viability for several years under these conditions.

Seed yields of Maple Grove Lewis flax from irrigated fields average 300 to 350 pounds per acre. Seed production of Lewis flax under dryland conditions is not recommended below 16 inches of average annual rainfall.

Maple Grove seed production fields are susceptible to infection by rust, a fungus that lives year to year in flax stubble. Light yellow to orange-yellow spots appear on the leaves and stems in late spring and weakens the plant and reduces the quality of seed. Field treatment with fungicides is recommended in mid-spring before symptoms appear to control rust.

### **Availability**

*For conservation use:* Certified seed is available from commercial seed vendors.

*For seed or plant increase:* Generation 3 is produced and maintained by the Aberdeen PMC. Certified seed is available through the University of Idaho Foundation Seed Program and Utah Crop Improvement Association. Certification of seed shall be limited to not more than two generations from the Generation-3 seed.

*For more information, contact:*  
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<http://plant-materials.nrcs.usda.gov/idpmc/>

### **Citation**

Release Brochure for Maple Grove Germplasm Lewis Flax (*Linum lewisii*). USDA-Natural Resources Conservation Service, Aberdeen Plant Materials Center. Aberdeen, Idaho 83210. Published December 2012.

For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov/>>

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