



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

'Prairie Gold' Maximilian Sunflower

Helianthus maximiliani Schrad.

A Conservation Plant Release by USDA NRCS Manhattan Plant Materials Center, Manhattan, KS



Figure 1. Prairie Gold Maximilian sunflower in full bloom. Photograph by R. Alan Shadow, East Texas PMC.

'Prairie Gold' Maximilian sunflower (*Helianthus maximiliani*) is a cultivar released in 1978 in cooperation with the Nebraska Agricultural Experiment Station.

Description

Prairie Gold is a native, perennial sunflower with a stout rhizomatous root system. It grows from 3 to 7 feet tall with stems occurring singly or in clusters. The central stem is stout, light green and covered in short dense white hairs. Leaves have an alternate attachment to the stem and are up to 12 inches long and 2.5 inches wide, sessile, narrowly lance shaped, folded upward from the central vein. The leaf surface is covered with white hairs and its margins that are smooth or loosely toothed. Large flowers (2 to 3 inches in diameter) are borne along the upper half of the stem, one or more on a short stalk from the leaf axil. The 15 to 30 petals (ray flowers) are bright yellow and the central disk flowers are yellow with brown anthers. Each flower head remains in bloom for several days. Maximilian sunflowers bloom from late July to October. Fruits are achenes which ripen in October. The seeds or fruit of Maximilian sunflower are 1/8 to 3/16 inch long, elongated and gray to brown mottled in color. Typically Prairie Gold is the last species to be harvested in the fall at Manhattan, Kansas. Some years the season is too short to mature seed on the plant at this location.

Source

The seed collection (PMK-1425) from Greenwood County in Kansas was the accession that eventually became known as Prairie Gold Maximilian sunflower. It was collected along with a number of other accessions from 1968 to 1970 in Nebraska, Kansas, and Texas. PMK-1425 was eventually selected due to its better overall performance. Plants of PMK-1425 were consistently rated excellent to good in vigor.

Conservation Uses

Maximilian sunflower is used in conservation plantings for habitat development, prairie restoration, landscaping, and range maintenance. Although the protein content of maximilian is poor, it is palatable to livestock and remains green late into the fall season. It can increase on range sites that are considered over grazed. It has been used for filter strip plantings and also to revegetate coal mine spoils in southeastern Kansas. This sunflower has a perennial crown and is rhizomatous which allows for a growth pattern that forms dense plant clusters which reinforce soil structure and reduce erosion. Prairie Gold provides food and cover for deer, game birds, songbirds and many other wildlife species. Its late flowering cycle provides pollinator species with pollen and nectar during the fall season when other species of flowering plants are less available.

Area of Adaptation and Use

The area of adaptation of Prairie Gold is Kansas, Nebraska southwestern Iowa, western Missouri, northern Oklahoma, the Texas panhandle and eastern Colorado. Prairie Gold grows best on sunny, open sites. Maximilian sunflower is adapted to a number of different soil types. It does not like excessive moist sites and will tend to be found in courser more well drained locations. Soil salinity can also cause Prairie Gold sunflower problems in establishment and survival. Maximilian sunflower exhibits fire tolerance in its dormant stage.

Establishment and Management for Conservation Plantings

Stands of this species can be readily established from seed. Un-stratified seed can be sown in the fall or stratified seed can be used in a spring time planting. The planting will require a clean, firm, weed-free, seedbed for best overall germination and establishment results. A mowing treatment may be required in new plantings to reduce annual weed competition. A 6 to 8 inch mowing height should deter annual weeds growth and still allow maximilian sunflower seedlings to grow and survive. To plant a diverse prairie restoration or wildflower planting a

seeding rate of 2 to 3 ounces of sunflower seed along with a ¼ to ½ pound of total forb seed per acre should provide a very diverse mixture of species. Applications of fertilizer in the establishment year are discouraged unless the soil test levels of phosphorous or potassium are extraordinarily low. Absolutely no nitrogen fertilizer should be applied in the establishment year since it will only serve to promote annual weedy species growth.

Ecological Considerations

Two identified disease problems on maximilian sunflower are powdery mildew (*Erysiphe cichoracearum*) and rust (*Puccinia helianthi*). Maximilian sunflower is a food source for the sunflower head clipping weevil (*Haplorhynchites aeneus*) and the caterpillar life stage of the silvery checkerspot (*Charidryas nycteis*). It is sometimes referred to as the sunflower butterfly because its black, spiny larvae are so commonly seen feeding on the leaves of sunflowers. If this plant is grown without competition it may grow too tall and fall over or lodge when in full flower. This sunflower spreads aggressively. Its dense clumps inhibit other plants by competition and probably by chemical inhibition or allelopathy. This species should not be planted where unwanted spread of the plant cannot be controlled. Some seed lots of Prairie Gold have a high percentage of dormant seed depending on the environment under which it was grown.

Seed and Plant Production

Propagation of maximilian sunflower for seed production is best accomplished with seed or achenes. Just as in the conservation establishment a clean, weed-free, firm planting site is desirable. Perennial weeds should be eliminated from the site prior to planting. In fact a fallowed site with no perennial weed problems and no chemical residue would be ideal. A drill equipped with depth bands and double disk openers should be used to precisely place the seed unit in a ¼ to ½ inch planting depth. A monoculture planting in 48 to 60 inch rows at 30 pure live seeds (PLS) per foot of row should provide a good stand. Harvest in the fall can be accomplished using a conventional combine and cleaning provided by a fanning mill. A three year average purity of 94.60 percent and yield in the 200 pound per acre range are possible. Prairie Gold has a seed per pound count of 153,000. The biggest problem is that there can be years when dormancy is a real issue with this species. The environmental conditions under which the seeds are produced leads to high levels of dormancy some years.

Availability

For conservation use: Commercial seed is available from a variety of commercial seed vendors. The ability to locate certified seed may be difficult from commercial sources.

For seed or plant increase: Breeder and foundation class seed can be obtained from the Manhattan Plant Materials Center. There is no registered class of seed for this variety.

For more information, contact:

Manhattan Plant Materials Center,
3800 South 20th Street
Manhattan, Kansas 66502
<http://www.plant-materials.nrcs.usda.gov>

Citation

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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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