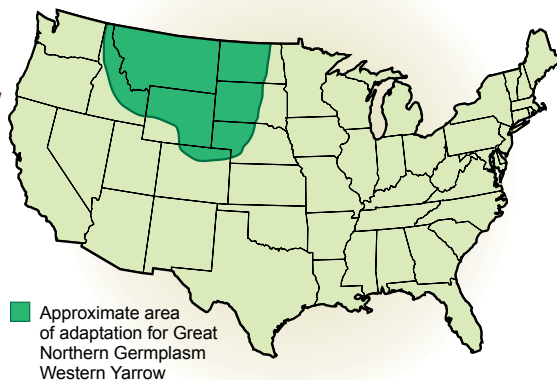


Great Northern Germplasm Selected Class Western Yarrow

Great Northern germplasm is a selected class release of western yarrow (*Achillea millefolium* L. var. *occidentalis* DC.) originally collected in 1988 in Flathead County, Montana. The original collection site is predominately a subalpine fir/queencup beadlily habitat type with a gravelly soil texture, located just outside of Glacier National Park on the Flathead National Forest at an elevation of 3,800 ft. (1,100 m). Great Northern was selected for top performance in vigor, height, seed head production, and survival from among 29 accessions of native yarrows from Montana and Wyoming.



tions ranging from 2,400 ft. (732 m) in Montana to 12,000 ft. (3,658 m) in Colorado. Western yarrow exhibits good survival in droughty conditions on gravelly loam and thin or sandy soils. This plant is a common component of such ecological sites as shallow, silty, shallow to gravel, and silty steep. Associated species include western wheatgrass, bluebunch wheatgrass,

prairie Junegrass, Sandberg bluegrass, common gaillardia, big sagebrush, and prairie coneflower. Great Northern germplasm is adapted for use in northern Idaho and all of Montana and Wyoming, except the Red Desert and Bighorn Basin.

Description

Western yarrow is a native, herbaceous perennial in the Aster family. It is a very common wildflower that grows erect from creeping rootstocks to a height of 10 to 36 in. (25 to 90 cm) tall. The leaves of western yarrow are lacy and fern-like in appearance, as they are finely dissected into numerous short and narrow divisions not over 0.04 in. (1 mm) wide—millefolium means a thousand leaves in Latin. The basal foliage is up to 10 in. (25 cm) long with leaves along the flowering stalk longest at the base and progressively shorter up the stem. The entire plant is densely covered in long, soft, wooly hairs. The plant has a very distinct aroma, similar to chamomile or dog fennel, that is especially noticeable when crushed. The somewhat rounded terminal clusters of flower heads are normally white to cream-colored and have an extended bloom period from May to September. The extremely small fruit is a whitish, flattened achene with compressed margins that are grayish in color.

Western yarrow is not to be confused with the introduced, invasive plant, common yarrow *Achillea millefolium*. Common yarrow has origins in Eurasia, the European continent, and Scandinavia. This introduced species is considerably different from western yarrow in that it has a much taller stature, aggressive vigor and weediness characteristics, and initiates a later sequence of flowering and seed ripening.

Adaptation

Western yarrow is a very drought-tolerant native species that is one of the most widely recognized and adaptable wildflowers in the western United States. The range of distribution includes many habitats across Manitoba to British Columbia and south to Kansas, New Mexico, northern Mexico, and California. It prefers conditions in full sun along roadsides, hills, canyons, pastures, and disturbed areas. It is found scattered in sagebrush areas, open timber, and subalpine zones, and occurs at eleva-

Uses

Western yarrow is commonly found as a minor component in many native plant communities and is considered a nondominant species. It is a forage source for bighorn sheep, pronghorn antelope, and deer. Sage grouse and other upland birds rely heavily on the foliage of western yarrow as a food source. Domestic sheep and goats derive a fair amount of forage value from western yarrow, while cattle and horses mostly graze the flower head. It is an early successional species that readily establishes on disturbed sites. Great Northern germplasm was selected primarily to add species diversity in seed mixtures for rehabilitation of disturbed sites such as rangelands, minelands, roadsides, park and restoration areas, prairie reconstruction projects, and farm bill program conservation plantings. Secondary use is for ornamental application in low maintenance or naturalized landscapes.

Establishment

Seed should be planted into a firm, weed-free seedbed, preferably with a drill that will ensure uniform seed placement to a depth of 1/8 to 1/4 inches (3 to 6 mm) or broadcast seeded, then harrowed or raked, and firmed with a packer or roller. The processed seed of Great Northern germplasm western yarrow has approximately 4.4 million seeds/lb (9.5 million seeds/kg). The full seeding rate is 1/4 to 1/2 lb/acre (0.3 to 0.6 kg/ha) pure live seed (PLS), but it would seldom be seeded in a pure stand. It is recommended that Great Northern germplasm western yarrow be included as a component of a native seed mixture where the seeding rate is adjusted to match the desired potential of the



plant community. Spring seeding is preferred over a dormant fall planting date. Periodic mowing during the establishment year is one option for weed suppression.

Seed Production

Seed production fields should be seeded at a rate of 25 PLS per linear foot of row (82 per linear meter of row). Between-row spacing is dependent on the type of planting and cultivation equipment, and ranges from 24 to 36 in. (60 to 90 cm). Adequate between-row space should be provided to perform mechanical cultivation. At 24-in. row spacing, the recommended seeding rate is 0.12 PLS lb/acre (0.14 kg/ha) and at 30- and 36-in. row spacing, the seeding rate is 0.09 and 0.08 PLS lb/acre (0.1 and 0.09 kg/ha), respectively. There are presently no herbicides specifically labeled to control broadleaf weeds in seed production fields. Seed harvest can be accomplished by swathing and combining from the cured windrows or direct combining. The indeterminate ripening may necessitate periodic mechanical stripping as seed heads mature. Seed is processed over a 2- to 3-screen fanning mill (slotted mesh screens), with final cleaning over an indent cylinder or gravity table. Seed production of 100 to 150 lb/acre (112 to 170 kg/ha) can be expected under irrigated conditions. Seed viability is very high and longevity can be expected for at least 5 years when stored at moderate temperatures and low humidity.

Availability

The USDA-NRCS Plant Materials Center, Bridger, Montana, released Great Northern germplasm as a selected class release. G₁ seed (equivalent to foundation seed) will be maintained by the USDA-NRCS Bridger Plant Materials Center and is made available to commercial growers through the Montana Foundation Seed Program at Montana State University-Bozeman and the University of Wyoming Foundation Seed Service at Powell, Wyoming. Commercial production is limited to two generations beyond G₁.

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**A
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