



Plant Chat

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NRCS Field Offices in North Dakota, South Dakota and Minnesota

Western Wheatgrass

Western wheatgrass is a prevalent grass in mixed-grass prairie communities throughout the northern Great Plains. This native, perennial, cool-season grass is an important component of seed mixes designed for grazing and rangeland, or revegetation and soil stabilization of disturbed sites and critical areas. Western wheatgrass has good drought and salinity tolerance, and is a high-quality forage grass for domestic livestock and several wildlife species.

Western wheatgrass is most adapted to, but not limited to, well-drained clay and loam ecological sites. It is tolerant of environmental extremes that range from spring flooding, high water tables, and considerable silt deposition, to extended periods of moderately-severe drought. Because it spreads from rhizomes, it can recover quickly from prolonged drought. It is often the first species to fill areas that have lost vegetation due to long dry spells. It does well in moderate to higher soil moisture regimes but is most common in areas that receive 10-16 inches of annual precipitation. Where precipitation on rangelands is above 20 inches per year, it behaves as an increaser, but is considered a decreaser where precipitation is less. It responds well to good grazing management strategies designed to maintain productivity and persistence.

Newer growth of western wheatgrass has very high forage quality and is particularly palatable to cattle and to domestic sheep. Western wheatgrass is best utilized in the spring or later after fall regrowth has occurred. As plants become coarser by early summer, palatability and crude protein decline with maturity. Fall regrowth however, cures well on the stem and is considered good winter forage for domestic livestock.



Western wheatgrass grows in association with many species, the more common being blue grama, buffalograss, green needlegrass, slender wheatgrass, switchgrass, and big bluestem. It begins growth about 2 to 3 weeks before blue grama. Primary pests are grasshoppers, ergot, and stem and leaf rusts.

There are several varieties of western wheatgrass developed for use in this region including Rodan, Walsh, Flintlock, Rosana, Recovery, and W.R. Poole. Be sure to consult with your local NRCS Field Office to determine which varieties are approved for conservation program plantings in your locality.



Potential for a Pine Wilt Nematode Resistant Scots Pine

Commonly available Scots pine comes primarily from European and Eurasian seed sources. It has been used extensively throughout the Midwest for conservation, Christmas trees and landscaping. These Eurasian sources of Scots pine are extremely susceptible to pine wilt, caused by the pine nematode *Bursaphelenchus xylophilus*. The nematode is native to North America. Native conifers are tolerant or resistant to the nematode.

Mongolian Scots pine, *Pinus sylvestris* var. *mongolica*, native to Nenjiang, Kedong, Bayan, Shangzhi and Heilongjiang Provinces in northeastern China proved tolerant/resistant to the nematode in a 1989 Chinese study. Pines native to North America also proved tolerant or resistant in this study while native Asian pines were highly susceptible.

PMC staff processed seed from established Mongolian Scots pine trees in Minnesota, and seedlings were grown by Towner State Nursery. In late April 2018, 345 seedlings were provided to 15 individuals in Iowa, South Dakota, Missouri and Nebraska for planting and testing of the potential resistance. Kansas, North Dakota, South Dakota, and Minnesota had field plantings of these seed sources from earlier distributions.

Our hope is that these test plantings in the Central US will exhibit resistance or tolerance as witnessed in the 1989 Chinese study. Due to the nature of the nematode, evidence of mortality or resistance will not be observed until trees are 7-10 years old. Once infested, trees can die within 3 weeks.

To speed the study results, individuals at South Dakota State and Iowa State Universities will inoculate the seedlings with the nematode. Preliminary results from these inoculation studies should be available within 3-4 years.

For more discussion on this topic, contact Craig Stange at craig.stange@nd.gov or Wayne Duckwitz at wayne.duckwitz@nd.usda.gov.