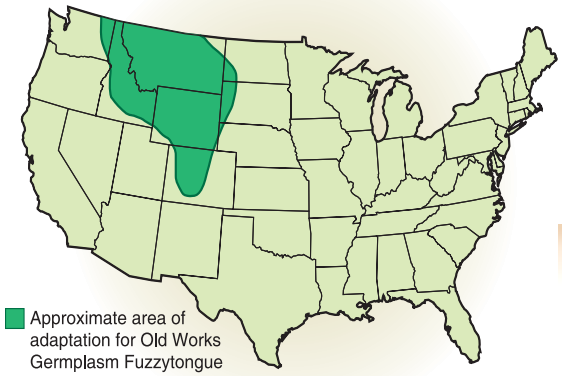
Old Works Germplasm Fuzzytongue Penstemon



Description

Old Works Germplasm fuzzytongue penstemon is a native perennial forb of the Scrophulariaceae family with a woody caudex and heavy taproot. It has one or more stems that are 4 to 16 inches tall, and sometimes decumbent at the base. The entire or sharply toothed leaves are narrowly lance-shaped, oblanceolate, or nearly linear, and glandular or finely pubescent. The flowers are lavender to pale purple with dark guidelines. The corolla is funnel-shaped with a long, hairy, three-lobed lower lip and a smaller two-lobed upper lip. The petal lobes are well reflexed and the palate is bearded with long yellow hairs. Four of the five stamens are fertile and lie against the upper portion of the corolla. The sterile stamen is covered with dense, yellow hairs and protrudes from the petal tube. The inflorescence is a fairly narrow panicle of three to six well-spaced false whorls with cymes two- to five-flowering on short peduncles. Flowers bloom from late spring into early summer. The 0.5-inch long fruit capsule is filled with dark, angular seeds.

Uses

Reclamation/Landscaping: Old Works Germplasm fuzzytongue penstemon may perform well in moderately acidic and heavy-metal contaminated soils common at hardrock minelands. The plant's inherent adaptation to dry, open terrain makes it a valuable addition to shrub and rangeland restoration plantings. This attractive wildflower is also suitable for use in Xeriscape and rock gardens.

Wildlife: This species is considered an important food source for many classes of wildlife and birds. Both herbage and seeds are utilized.

Origin

Old Works Germplasm fuzzytongue penstemon was originally collected in Deer Lodge County, Montana, on August 19, 1998. The collection site is located within the Anaconda Smelter Superfund Site, approximately 1 mile north of Anaconda at an elevation of 5,720 feet. Seed was collected from more than 50 plants on a southwest-facing slope on gravelly, sandy loam textured soil. Elevated levels of heavy metals and sulfur compounds are characteristic of the collection site due to aerial emissions from past copper smelting operations. Laboratory assays of a 0- to 6-inch composite soil sample taken at the collection site indicated a pH of 5.8 and moderately phytotoxic levels of arsenic and copper. Precipitation in the area averages 12 to 14 inches annually. The collection site is within USDA plant hardiness Zone 4a.

Establishment

Adaptation: Old Works Germplasm performs well in loamy to sandy soils in the foothills of the Anaconda-Pintler mountains in 12- to 14-inch average annual precipitation zones. It is expected to perform well on sites with similar edaphic, climatic, and topographic conditions, such as in the foothills and intermountain valleys of the northern Rocky Mountains. It may also perform well in other regions where fuzzytongue penstemon is adapted. Fuzzytongue penstemon is commonly found in dry, open terrain from the prairies to the mountains at 2,000 to 8,000 feet. It ranges from central Oregon, Washington, southern British Columbia, and Alberta to North Dakota, Wyoming, and northern Colorado.

Planting: This species should be seeded with a drill or broadcast at a depth of 0.25 inch or less into a firm, weed-free seedbed. The full seeding rate (not recommended) for this forb is approximately 3 lbs of Pure Live Seed (PLS) per acre or 25 PLS per square foot. This selection contains approximately 358,000 seeds/lb. When used in a mix, adjust the seeding rate to the desired percentage of mix. For drastically disturbed or mined lands, the seeding rate of this species does not require doubling. A dormant fall seeding provides the cold stratification needed to overcome seed dormancy the following spring. Growth of this species begins in early spring and flowers appear from May through July of the second growing season. To increase establishment success, a weed barrier can be used to diminish competitive plant species.

Seed Production

Seeds should be sown at a rate of 25 PLS per linear foot of row. Row spacing for this species varies depending on planting and cultivation equipment available. At 24-inch row spacing, the recommended seeding rate is 1.5 lbs PLS per acre. Thirty-inch row spacing requires a seeding rate of 1.2 lbs PLS per acre and 36-inch row spacing requires 1.0 lb PLS per acre. To break seed dormancy, plant in late fall or early winter. In the spring, irrigate to maintain a moderately

moist seedbed. Dry seed capsules identify mature seed, which should be hard and almost black in color. Combines may be useful in harvesting this species, but hand harvests maximize seed yield. Seed may be removed from the capsule by using a hammer mill and then separated from the chaff using a fanning mill. Seed longevity is at least 5 years when stored at 34° to 37ºF in sealed containers.

Container Production

Indoor: Sow 3 to 5 PLS seeds 0.25 inch deep in a 10 cubic-inch container using a standard potting mix. Irrigate containers thoroughly and allow them to drain overnight. Place containers in a cooler maintained at about 36ºF for 120 days. Frequently inspect the containers for emergence after 90 days of prechilling. If emergence is occurring, or after 120 days of prechilling, transfer the containers to a greenhouse maintained at 68ºF day/50ºF night. Thin seedlings to one plant per container and irrigate to maintain moderate soil moisture. Be careful not to overwater the seedlings, which are susceptible to damping off. Once established, fertilize seedlings with 13-13-13 liquid N-P-K fertilizer at 100 ppm during the active growth phase. Seedlings are root tight in their containers 3 to 4 months after germination.

Outdoor: Sow seed in containers in the late fall as directed above. Thoroughly irrigate containers and place outdoors, preferably in a hoophouse to shelter containers from drying winds. Throughout the winter, irrigate the containers to keep the soil media moist. Germination should occur in the spring when temperatures reach about 68ºF.

Availability

The USDA/NRCS, Bridger Plant Materials Center maintains foundation-quality (G_1) seed of Old Works Germplasm fuzzytongue penstemon. Seed will be distributed through the Seed Stocks Program, Department of Plant Sciences, P.O. Box 173150, Montana State University, Bozeman, MT 59717-3150.

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