

Registration of Yakima Western Yarrow Germplasm

Yakima western yarrow (*Achillea millefolium* L.) germplasm (Reg. no. GP-8, PI 639271) was released on 12 Oct. 2004 by the USDA-ARS and the Utah Agricultural Experiment Station as a Source Identified Class (natural track) germplasm, which is eligible for seed certification under Association of Seed Certifying Agencies guidelines (AOSCA, 2001). Yakima was developed in cooperation with the United States Army Corps of Engineers-Engineer Research and Development Center and the Strategic Environmental Research and Development Program (SERDP) project to identify resilient plant characteristics and develop wear-resistant plant cultivars for use on military training lands. Yakima western yarrow is a multi-origin germplasm assembled to ensure adaptation over a broad range of ecological sites and provide a source of readily available seed. Yakima was evaluated under the experimental designation SERDP-select western yarrow.

Yakima is a multi-origin germplasm generated by combining germplasm from multiple environments, each possibly with a different co-adapted gene complex, to enhance establishment over a range of semiarid ecosystems. Wildland seed (generation G0) was collected on 31 July through 2 Aug. 2000, from 27 locations representing seven different ecological sites, as classified by the USDA-Natural Resources Conservation Service, at the U.S. Army Yakima Training Center (YTC) at Yakima, WA. The collection locations had the following range of characteristics: annual precipitation (15–28 cm); surface soil texture (loam to sand); soil depth (15–183 cm); slope (1–30%); aspect (north, south, east, and west); and elevation (486–851 m). Land forms of the collection locations were foot hill, plain, canyon bottom, canyon summit, ridge top, canyon side, and bottom flat. Associated vegetation included bluebunch wheatgrass [*Pseudoroegneria spicata* (Pursh) A. Love], Wyoming big sagebrush (*Artemisia tridentata* Nutt. ssp. *wyomingensis* Beitel & Young), Sandberg bluegrass (*Poa secunda* Presl.), buckwheat (*Eriogonum* sp.), scabland sagebrush [*Artemisia rigida* (Nutt.) Gray], Cusick's bluegrass (*P. cusickii* Vasey), Idaho fescue (*Festuca idahoensis* Elmer), yellow rabbitbrush [*Chrysothamnus viscidiflorus* (Hook.) Nutt.], rubber rabbitbrush [*Ericameria nauseosa* (Pallas ex Pursh) Nesom & Baird], phlox (*Phlox* sp.), needle and thread grass [*Hesperostipa comata* (Trin. & Rupr.) Barkworth], and Indian ricegrass [*Achnatherum hymenoides* (Roemer & J.A. Schultes) Barkworth]. Approximately 2000 seedlings from the wildland-collected G0 seed, equally representing all collection sites, were started in the green-

house and transplanted to a field near Logan, UT, in spring of 2001. Seed was harvested from these plants in 2002 and composited together to form the G1 generation.

Yakima western yarrow has shown vigorous growth in the G1 field near Logan and has been successfully established in field trials in Utah, Idaho, and Washington. A range of phenotypic differences have been observed in the seed production field indicating the diversity within this germplasm. In a preliminary study, an earlier (1994) western yarrow collection from many of the same 27 collection locations was tested at the Yakima Training Center where it established and persisted better than common variety-not-stated western yarrow.

Western yarrow is an important, abundant forb in the bluebunch wheatgrass-sagebrush plant communities of the Intermountain and Northwest regions of the USA. It is rhizomatous and drought tolerant enabling it to recruit into disturbed areas and often competes well with invasive weedy species. Yakima western yarrow is intended for use in rehabilitation and restoration of western U.S. rangelands. It should be particularly useful to help stabilize and add diversity to severely disturbed sites, such as military training lands and after wildfires.

The USDA-ARS Forage and Range Research Laboratory, Logan, UT will maintain G1 generation seed and it will be made available to growers by the Utah Crop Improvement Association (435-797-2082). Seed through the G4 generation will be eligible for certification. Information and small seed quantities will be made available on request to the corresponding author. Appropriate recognition should be made if this germplasm is used to develop new cultivars.

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References

AOSCA. 2001. Genetic and crop standards of the Association of Official Seed Certifying Agencies. AOSCA, Boise, ID.

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