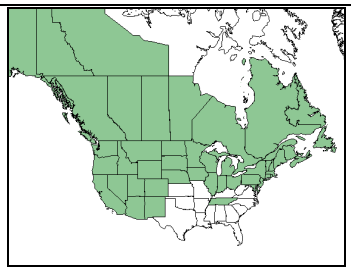
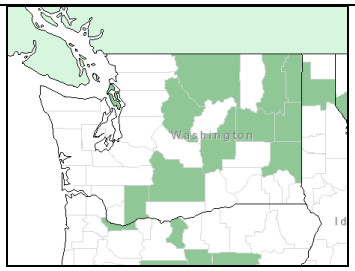
Plant Propagation Protocol for *Argentina anserina*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/*[ARAN7.pdf]*


Image: *Wikimedia Commons, Rasbak*

TAXONOMY	
Plant Family	
Scientific Name	Rosaceae
Common Name	Rose family
Species Scientific Name	
Scientific Name	Argentina anserina Linnaeus
Varieties	*Argentina anserina* (L.) Rydb. Var. *concolor* (Ser.) Rydh (USDA PLANTS Database, 2016)
Sub-species	
Cultivar	
Common Synonym(s)	*Argentina argentea* (L.) Rydb. *Potentilla anserina* (L.) *Potentilla anserina* (L.) subsp. anserina *Potentilla anserina* (L.) var. *concolor* Ser. *Potentilla anserina* (L.) var. *sericea* Hayne *Potentilla anserina* (L.) var. *yukonensis* (Hultén) B. Bolvin *Potentilla egedii* Wormsk subsp. *yukonensis* (Hultén) Hultén *Potentilla yukonensis* Hultén (USDA PLANTS Database, 2016)
Common Name(s)	Common silverweed, silverweed cinquefoil, silverweed
Species Code (as per USDA Plants database)	ARAN7
GENERAL INFORMATION	
Geographical range	

	  *Images:* USDA PLANTS Database
Ecological distribution	*A. anserina* has an extensive range and is ecologically versatile. It prefers generally moist areas in natural habitats along lakes, rivers, and the seashore. It is also found in more manmade open areas, such as roadsides, pastures, and fields where the soil is more compacted and less aerated. (Rousi, 1965)
Climate and elevation range	Grows in wet, temperate climates and is common at low to mid elevations (Walker, 2005). Elevations for trial sites range from 10'-8,800' (Baker, 2009; Winslow, 2002)
Local habitat and abundance	It is more common and aggressive in the eastern part of the US, but less commonly found outside of natural habitats in the West, such as saline marshes and the edges of alkali lakes (Rousi, 1965; Turner, 1995). Grassland ecological zones associated with *P.* anserina include Idaho fescue/bearded wheatgrass and silver sagebrush/Idaho fescue habitats (Winslow, 2002). It is threatened in Indiana, Iowa, and Pennsylvania. (USDA PLANTS Database, 2016)
Plant strategy type / successional stage	Is a good competitor and can become weedy (Walker, 2005). Competes by sending out reddish stolons in several directions that root with ground contact (Lady Bird Johnson Wildflower Center, 2014).
Plant characteristics	Low-growing forb with a taproot that grows 6-9". Basal leaves are pinnately compound, with 15-25 leaflets. Leaves are green on top and covered in long hairs on its underside, which give it its name. Flowers have 5 petals and are bright gold, blooming from late spring to summer, and then bear fruits that are small achenes. (Robson)
PROPAGATION DETAILS	
Ecotype	BLM, Seeds of Success: Washington State Park land, Deception Pass State Park, Whidbey Island, Skagit County, Washington: 10 ft. elevation (Barner, 2009). Two Yellowstone National Park accessions periodically collected and produced from 1986 - 1990. 8,000 - 8,800' elevation. (Winslow, 2002).
Propagation Goal	Seeds
Propagation Method	Seed
Product Type	Propagules
Stock Type	
Time to Grow	0
Target Specifications	Average annual production is reported as 46 kg/ha (41 lb/ac) (Winslow, 2002).

Propagule Collection	Wildland collection occurs when flower is brown and the achene is wrinkled and corky early August to mid September. Hand-harvesting is strenuous due to low growing form. One collection hour/person yields on average 34 grams (1.2 oz) clean seed and varies by year, stand density, and collector experience. (Winslow, 2002)
Propagule Processing/Propagule Characteristics	477,400 seeds/lb with high purity (99%) (Barner, 2009)
Pre-Planting Propagule Treatments	For large seed lots, seed is spread out in a dry shelter for 3-5 days, until there is no moisture or warmth. Thresh seeds with a hammermill over a 4/64" or a 1/13" round hole screen, followed by air-screen processing on an Office Clipper over a 1/20" or a 1/25" round. (Winslow, 2002; Barnes, 2009)
Growing Area Preparation / Annual Practices for Perennial Crops	Seedbed should be firm, weed-free, and have good field moisture to 4" depth. Seed can be directly sown into seedbed (Winslow, 2002).
Establishment Phase Details	Seeds should be sown in Spring, with 25-30 pure live seed every foot, 36" row spacing at a depth of 0.25". Soils surface should be consistently moist throughout germination and emergence (about 14 days). Fertilizer should not be applied the first year since it will stimulate competition from weeds. (Winslow, 2002)
Length of Establishment Phase	2 growing seasons (Winslow, 2002)
Active Growth Phase	Rapid growth occurs between spring and fall. Soil moisture is critical during budding stage and post harvest to pre-freeze up. No irrigation is applied while flowering. Broadcast fertilizer at 100 lbs actual N/40 lbs actual P/acre in mid-September. (Winslow, 2002)
Length of Active Growth Phase	2-3 growing seasons (Winslow, 2002)
Hardening	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	Hand harvesting from cultivated plants can occur between late June and late July. Seed has physiological dormancy. Because of their small size, seeds should be stored in plastic ziplock bags repeatedly punctured to prevent moisture buildup, wrapped in cloth or plastic seed sacks, and stored in a cool, dry environment 33-38oF (Winslow, 2002; Barner, 2009).
Length of Storage	5-7 years (Winslow, 2002)
Guidelines for Outplanting / Performance on Typical Sites	
Other Comments	*A. anserine* has a history of ethnobotanical use as well as a food crop.

	(Turner, 1995; Biggs, 1999)
INFORMATION SOURCES	
References	Barner, Jim. 2009. Propagation protocol for production of Propagules (seeds, cuttings, poles, etc.) Argentina anserina (L.) Rydb. seeds USDA FS - R6 Bend Seed Extractory Bend, Oregon. In: Native Plant Network. URL: http://NativePlantNetwork.org (accessed 2016/05/24). US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources Biggs, C. R. (1999). Wild, edible & medicinal plants: Alaska, Canada & Pacific Northwest rainforest: An introductory pocket trail guide. Juneau, AK: Carol Biggs' Alaska Nature Connection. Chayka, K. (2016). Potentilla anserina (Silverweed Cinquefoil): Minnesota Wildflowers. Retrieved May 25, 2016, from https://www.minnesotawildflowers.info/flower/silverweed-cinquefoil Lady Bird Johnson Wildflower Center. (2014). Argentina anserina: NPIN: Native Plant Database. Retrieved May 25, 2016, from http://www.wildflower.org/plants/result.php?id_plant=ARAN7 Robson, K. A., Richter, A., & Filbert, M. (2008). Encyclopedia of northwest native plants for gardens and landscapes. Portland, Or.: Timber Press. Rousi, A. (1965). Biosystematic studies on the species aggregate Potentilla anserina L. Annales Botanici Fennici, 2(1), 47-112. Retrieved from http://www.jstor.org/stable/23724290 Turner, N. J. (1995). Food plants of coastal First Peoples. Vancouver: UBC Press. USDA PLANTS Database. (2016). Plants Profile for Argentina anserina (silverweed cinquefoil). Retrieved May 24, 2016, from http://plants.usda.gov/core/profile?symbol=aran7 Walker, J. (2005). Potentilla anserine spp. Pacific Plant Protocol. Seattle: University of Washington. Retrieved May 23, 2015, from http://depts.washington.edu/propplnt/Plants/Potentilla%20anserina.htm Winslow, S. R. (2002). Propagation protocol for production of Propagules (seeds, cuttings, poles, etc.) Argentina anserina seeds USDA NRCS - Bridger Plant Materials Center Bridger, Montana. In: Native Plant Network. URL: http://NativePlantNetwork.org (accessed 2016/05/24). US Department of Agriculture, Forest Service, National

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