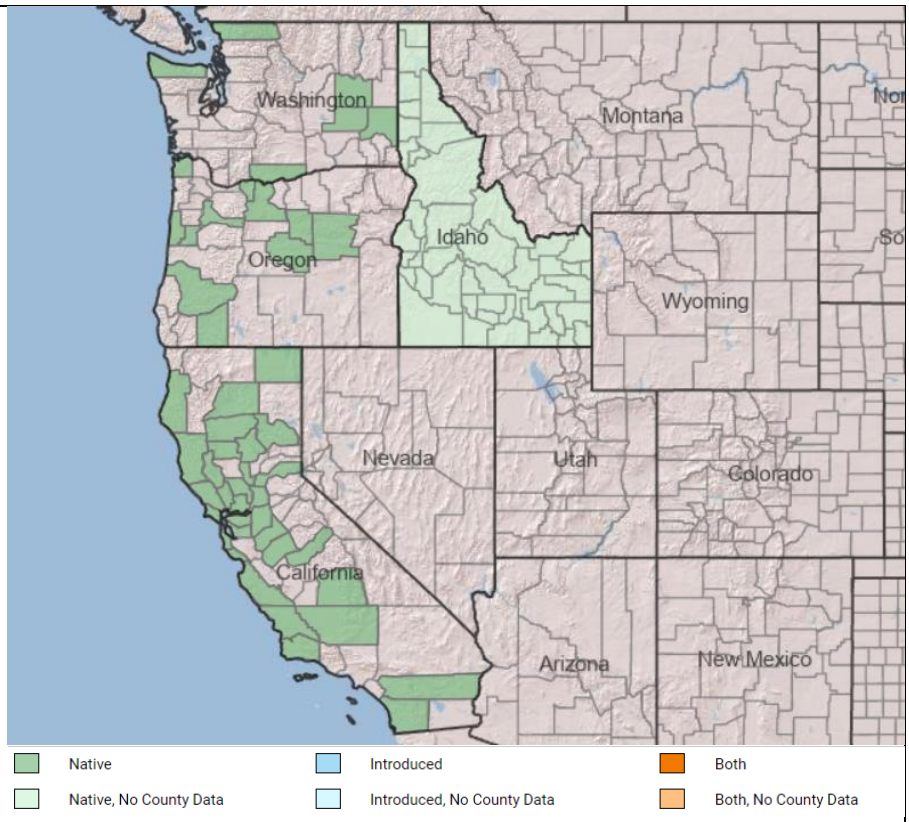
Plant Propagation Protocol for *Alopecurus saccatus*

ESRM 412 – Native Plant Production

URL: https://courses.washington.edu/esrm412/protocols/2024/ALSA3.pdf

Taken by Ron Vanderhoff (2023).

TAXONOMY	
Plant Family	
Scientific Name	Poaceae
Common Name	Grass Family
Species Scientific Name	
Scientific Name	*Alopecurus saccatus* Vasey
Varieties	No known varieties.
Sub-species	No known sub-species.
Cultivar	No known cultivars.
Common Synonym(s)	*Alopecurus howellii* Vasey (ALHO3), *Alopecurus californicus Vasey*
Common Name(s)	Pacific foxtail, Pacific meadow foxtail
Species Code (as per USDA Plants database)	ALSA3
GENERAL INFORMATION	
Geographical range	

	 (USDA, 2024)
Ecological distribution	Pacific foxtail has been noted to occur in lowland vernal pools, shores, wet scabland, and meadows [1]. Other ecological communities it's been observed in include coastal sage scrubs, mixed evergreen forests, chaparral, valley grasslands, and riparian wetlands [2].
Climate and elevation range	Climate varies widely, with communities found in arid and wet environments in mountains, valleys, and coastal zones. Specifically, tolerances include annual precipitation of 14 to 69 inches, a wet season of 3 to 8 months, and a temperature range of 26 to 62 degrees Fahrenheit [2]. Elevation also varies widely, with individuals observed from as low as 50ft in elevation up to more than 3500ft in elevation [3].
Local habitat and abundance	Grows in dense groups [4] and has been sighted alongside *Lasthenia glaberrima, Downingia yina, Isoetes nuttallii, Plagiobothrys spp., Microsteris gracilis, Myosurus minimus, Eleocharis spp., Deschampsia danthonioides,* and *Veronica peregrina* [3].
Plant strategy type / successional stage	Pacific foxtail, as well as other *Alopercurus*, are considered weedy colonizers, with seeds blowing far distances on air currents [4].

Plant characteristics	Is an annual grass that grows 12-45cm tall [5]. Has dense spiked inflorescences that are 1.5-6.5cm long and 5.5-10mm wide. Flowering occurs March to May [6]. (See picture on page 1).
PROPAGATION DETAILS: FROM SEED	
Ecotype	In the summer months of 1977, from July and August, Hoffman gathered fully developed seeds from eight types of grasses and six varieties of forbs found in shoreline habitats along Lake Oahe, South Dakota. Each batch of seeds was obtained from a distinct cluster of plants within a confined space not exceeding 900 square meters. These include *Alopecurus aequalis* and *Alopecurus arundinaceus* seeds [7].
Propagation Goal	Testing germination rates for plants to be used for revegetation of the shores of Lake Oahe and Lake Sakakawea in North and South Dakota [7].
Propagation Method	Seed
Product Type	Germinants
Stock Type	Not listed.
Time to Grow	Not listed.
Target Specifications	Not listed.
Propagule Collection Instructions	Fully developed seeds from July and August. Each batch of seeds was obtained from a distinct cluster of plants [7].
Propagule Processing/Propagule Characteristics	Not listed.
Pre-Planting Propagule Treatments	All seeds were placed in paper bags, dried naturally outdoors, and transported to Vermillion, South Dakota, for germination testing. Before conducting the tests, seeds were stored in metal containers with plastic covers, positioned inside typical weather bureau shelters situated at ground level, away from direct sunlight. All the seeds were kept outdoors both before and during the germination tests [7]. *Alopecurus aequalis* showed a higher rate of germination in light compared to darkness during the spring experiments. Germination of *A. arundinaceus* was most successful in the spring following dry storage over the winter, although 33-44% of seeds germinated after stratification over the winter period. *A. aequalis* and *A. arundinaceus* also exhibited higher germination rates in water during autumn. In South Dakota, both species of *Alopecurus* produce dormant seeds, and we have observed seedlings of these species only in springtime shoreline communities [7].

	Hoffman cited Arai and Chisaka (1961), noting that this species produces dormant seeds, which can be stimulated to germinate by cold water treatment (which was not described) [7].
Growing Area Preparation / Annual Practices for Perennial Crops	Not listed.
Establishment Phase Details	Not listed.
Length of Establishment Phase	Not listed.
Active Growth Phase	Not listed.
Length of Active Growth Phase	Not listed.
Hardening Phase	Not listed.
Length of Hardening Phase	Not listed.
Harvesting, Storage and Shipping	All seeds were placed in paper bags, dried naturally outdoors, and transported to Vermillion, South Dakota. Seeds were then stored in metal containers with plastic covers away from direct sunlight. All the seeds were kept outdoors [7].
Length of Storage	Overwintering yielded better germination [7].
Guidelines for Outplanting / Performance on Typical Sites	Not listed.
Other Comments	There is no documented protocol for *Alopecurus saccatus,* so this protocol is developed from information of other species in *Alocpecurus.* Majority of propagation information for *Alocpercurus* is in response to competition with cereal crops and its consideration as an agricultural weed.

PROPAGATION DETAILS: VEGETATIVE	
Ecotype	Not found.
Propagation Goal	Not found.
Propagation Method	Not found.
Product Type	Not found.
Stock Type	Not found.
Time to Grow	Not found.
Target Specifications	Not found.
Propagule Collection Instructions	Not found.
Propagule Processing/Propagule Characteristics	Not found.
Pre-Planting Propagule Treatments	Not found.

Growing Area Preparation / Annual Practices for Perennial Crops	Not found.
Establishment Phase Details	Not found.
Length of Establishment Phase	Not found.
Active Growth Phase	Not found.
Length of Active Growth Phase	Not found.
Hardening Phase	Not found.
Length of Hardening Phase	Not found.
Harvesting, Storage and Shipping	Not found.
Length of Storage	Not found.
Guidelines for Outplanting / Performance on Typical	Not found.
Other Comments	None.

INFORMATION SOURCES

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[2] Calflora (2024). *Taxon Report: Alopecurus saccatus Vasey*. Retrieved April 30, 2024 from https://www.calflora.org/app/taxon?crn=263.

[3] University of Washington Herbarium. (2019). CPNWH Database . Consortium of Pacific Northwest Herbaria. https://www.pnwherbaria.org/data/search.php

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[5] Wilson, B., Brainerd, R., Otting, N. (2015). *Alopecurus saccatus Vasey: Pacific meadow foxtail*. Oregon Flora. Retrieved April 30, 2024 from https://oregonflora.org/taxa/index.php?taxon=2678.

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Date Protocol Created or Updated	05/22/2024