

Plant Propagation Protocol for *Viola langsdorffii*

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/VILA6.pdf>



Source 3



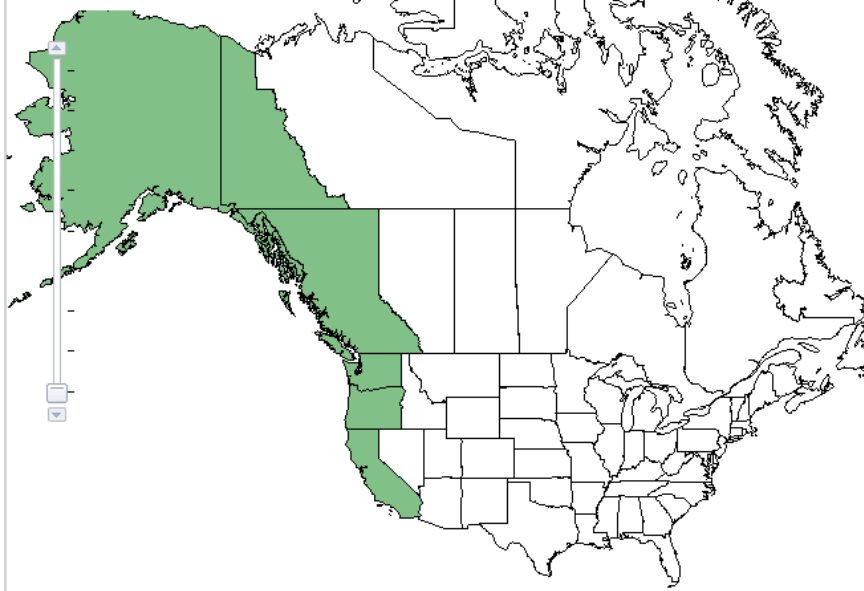
Source 1

TAXONOMY	
Plant Family	
Scientific Name	<i>Violaceae</i> ⁵
Common Name	Violet
Species Scientific Name	
Scientific Name	<i>Viola langsdorffii</i> Fisch. ex Ging.
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	<i>Viola langsdorffii</i> <i>Viola simulata</i> ^A M.S. Baker ⁸ , VISI6 <i>Viola superba</i> ^A M.S. Baker ⁸ , VISU9 <i>Viola kamtschadalorum</i> W. Becker & Hult. ¹⁰ <i>Viola ursina</i> Kom ¹⁰
Common Name(s)	Aleutian violet, Alaska violet ^A , Alaskan violet ^E , Langdorff's violet ⁷
Species Code (as per USDA Plants database)	VILA6

GENERAL INFORMATION

Geographical
range

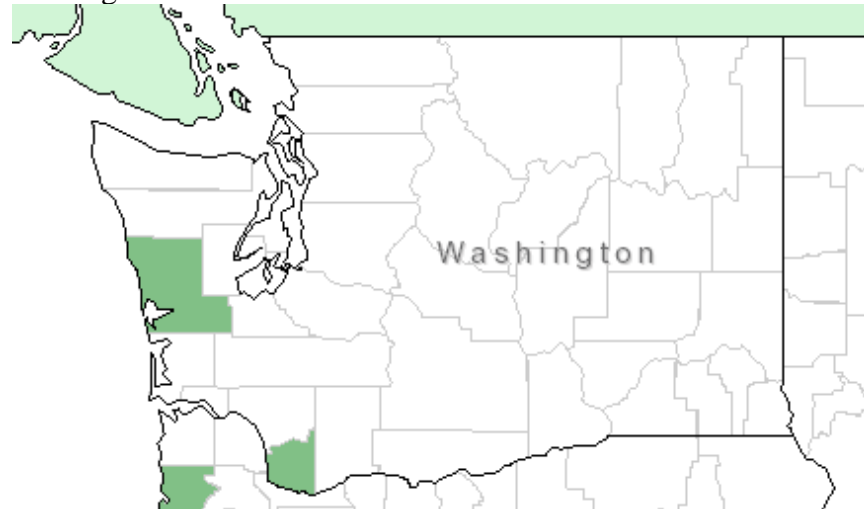
North America



Symbol: VILA6

USDA-NRCS-NGCE POWERED BY

Washington State



Source: USDA PLANTS Database⁸

Source:

Ecological
distribution

Found mostly in wetlands, bogs, moist meadows, stream banks, and snow beds^{1, 2, 5, 11}

For the western mountains, valleys and coasts of Washington, it is a facultative wetland status indicator⁸

Climate and elevation range	<p>Boreal and humid transition zones of coastal climates are best¹</p> <p>Acceptable elevation ranges from 18 to 64 feet with narrow ranges of precipitation. Annual precipitation can go from 68.0 inches to 72.1 inches while summer precipitation can only range from 1.98 inches to 1.99 inches. Requiring both sun and wet cool soil⁵, this plant's ideal soil moisture regime ranges from 1 to 7 with a mesic average of 4¹⁰. This defined soil moisture regime ranking runs on a scale of 0, very dry, to 8, very wet, with 4 defining mesic soils¹⁰.</p> <p>The coldest temperature this plant can tolerate is 45.8 degrees F and the hottest is 60.5 degrees F. Nonetheless, humidity, 0.40 to 7.47 vpd⁶, and slope gradient, 0-80% with an average of 23%⁴, have large ranges.</p>
Local habitat and abundance	Associated species may include deciduous or evergreen canopy cover as it benefits from a winter covering of leaves or evergreen boughs ⁵ . Its environment is often times stabilized by <i>Carex</i> and <i>Juncus</i> species ⁷ .
Plant strategy type / successional stage	It is a dicot perennial herb that blooms in April through August ^{2, 5} . Its strategy also includes the use of rhizomes ^{10, 11} . Another survival tactic is the fact that its seeds have minor toxicity ² .
Plant characteristics	As a herb, the plant is only 2 to 5 inches tall with basal leaves, a long stalk, stem leaves and a singular flower. The heart shaped circular basal leaves can be up to 2 inches wide and have petioles as long as 8 inches. Stalks are up to 6 inches long ending with a flower of 5 petals flushed with lavender, white and yellow. Fruits appear in smooth capsules. ^{5, 10, 11} With no stolons, this plant comes from rhizomes ¹⁰ .
PROPAGATION DETAILS	
Ecotype	
Propagation Goal	Plant
Propagation Method	Seed ⁵
Product Type	
Stock Type	
Time to Grow	
Target Specifications	
Propagule Collection Instructions	

Propagule Processing/Propagule Characteristics	Brown seeds ¹⁰
Pre-Planting Propagule Treatments	Seeds must be exposed to freezing temperatures in order to germinate in the spring ⁵
Growing Area Preparation / Annual Practices for Perennial Crops	
Establishment Phase Details	Seeds that have not been stored are best sown in autumn during a cold frame. However, seeds that have been stored and stratified should be sown in early spring before temperatures increase too much ⁴
Length of Establishment Phase	
Active Growth Phase	
Length of Active Growth Phase	
Hardening Phase	
Length of Hardening Phase	
Harvesting, Storage and Shipping	Once seedlings are large enough to handle, transplant each into its own individual pot ⁴
Length of Storage	
Guidelines for Outplanting / Performance on Typical Sites	Outplant in the summer ⁴
Other Comments	Seeds almost never available at nurseries ⁶ Limited Information

PROPAGATION DETAILS Application derived from Source #5 with method from Source #9	
Ecotype	
Propagation Goal	Plant
Propagation Method	Vegetative
Product Type	Propagules, runner division and rooted offsets
Stock Type	
Time to Grow	
Target Specifications	Runner plant with established root system
Propagule Collection Instructions	
Propagule Processing/Pr opagule Characteristics	Allow original plant to grow runners outwards. Place a clip on the runner shoot and allow new plant to establish. Once the new plant has a root system, separate from parent plant. This new plant can be transplanted before the cold season begins
Pre-Planting Propagule Treatments	
Growing Area Preparation / Annual Practices for Perennial Crops	
Establishment Phase Details	
Length of Establishment Phase	
Active Growth Phase	
Length of Active Growth Phase	
Hardening Phase	
Length of Hardening Phase	

Harvesting, Storage and Shipping	
Length of Storage	
Guidelines for Outplanting / Performance on Typical Sites	
Other Comments	Established plants almost never available at nurseries ⁶ Limited information
PROPAGATION DETAILS Information from Source #4	
Ecotype	
Propagation Goal	Plants
Propagation Method	Vegetative
Product Type	Propagules, vegetative division
Stock Type	
Time to Grow	
Target Specifications	
Propagule Collection Instructions	Just after flowering, in the autumn, established plants are ready to be divided
Propagule Processing/Pr opagule Characteristic s	
Pre-Planting Propagule Treatments	
Growing Area Preparation / Annual Practices for Perennial Crops	Container size depends on size of division. Larger division can be outplanted directly while smaller divisions should be up potted into a greenhouse

Establishment Phase Details	Small divisions in pots about be placed in a greenhouse with some shade
Length of Establishment Phase	
Active Growth Phase	
Length of Active Growth Phase	
Hardening Phase	
Length of Hardening Phase	
Harvesting, Storage and Shipping	
Length of Storage	6- 9 months
Guidelines for Outplanting / Performance on Typical Sites	Once divisions are well established in greenhouse pots, out plant them in the summer or following spring
Other Comments	Established plants almost never available at nurseries ^D . Limited information
INFORMATION SOURCES	
References	See below on the next page
Other Sources Consulted	“Plant Search.” <i>WA Native Plant Society</i> , Burke Museum of Natural History and Culture, biology.burke.washington.edu/herbarium/imagecollection.php?&Genus=Viola&Species=langsdorffii . Accessed May 16, 2018. Tropicos.org. “ <i>Viola Langsdorffii</i> Fisch. Ex Ging.” <i>Tropicos</i> , Missouri Botanical Garden, www.tropicos.org/Name/33800676 . Accessed May 16, 2018.
Protocol Author	Ariana Winkler
Date Protocol Created or Updated	06/04/18

References

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- ² Calflora, and Consortium of California Herbaria. “Calflora: *Viola Langsdorffii*.” *The Calflora Database*, Calflora, 2018, [www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Viola langsdorffii](http://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Viola+langsdorffii). Accessed May 16, 2018.
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- ⁴ Fisch, Regel. “*Viola Langsdorffii*.” *Plants For A Future Plant Search*, Plants For A Future, [pfaf.org/user/Plant.aspx?LatinName=Viola langsdorffii](http://pfaf.org/user/Plant.aspx?LatinName=Viola+langsdorffii). Accessed May 16, 2018.
- ⁵ Lady Bird Johnson Wildflower Center. “Plant Database.” *Plant Database*, University of Texas at Austin, 1 Jan. 2007, www.wildflower.org/plants/result.php?id_plant=VILA6. Accessed May 16, 2018.
- ⁶ “Langsdorff’s Violet Alaska Violet, *Viola Langsdorffii*.” *Calscape*, California Native Plant Society, [calscape.org/Viola-langsdorffii-\(\)](http://calscape.org/Viola-langsdorffii-()). Accessed May 16, 2018.
- ⁷ Little, R John. “*Viola Langsdorffii*.” *Jepson EFlora*, Regents of the University of California, 2012, ucjeps.berkeley.edu/eflora/eflora_display.php?tid=89179. Accessed May 16, 2018.
- ⁸ “Plants Profile for *Viola Langsdorffii* (Aleutian Violet).” *PLANTS Database*, USDA Natural Resource Conservation Service, plants.usda.gov/core/profile?symbol=vila6. Accessed May 16, 2018.
- ⁹ Sandor, Ferenc, and Roots of Peace. “Vegetative Propagation Techniques.” *Perennial Crop Support Series*, USAID, 18 Nov. 2007, www.sas.upenn.edu/~dailey/VegetativePropagationTechniques.pdf. Accessed May 16, 2018.
- ¹⁰ “*Viola Langsdorffii* Fisch. Ex Gingins.” Edited by Brian Klinkenberg, *E-Flora BC: Electronic Atlas of the Plants of British Columbia*, Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, 2017, [linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Viola langsdorffii](http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Viola+langsdorffii). Accessed May 16, 2018.
- ¹¹ “*Viola Langsdorffii*.” *Flora of North America*, EFloras, 24 Apr. 2016, www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242442763. Accessed May 16, 2018.