Plant Propagation Protocol for *Streptopus streptopoides*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/*STST3.pdf*

Fig 1. *S. streptopoides* berries,
Image provided by Plants for a Future[7]

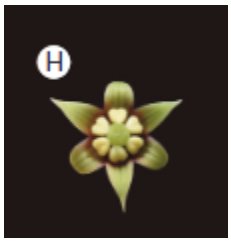


Fig 2. *S. streptopoides* flower
Image provided by Mohcizuki[7]

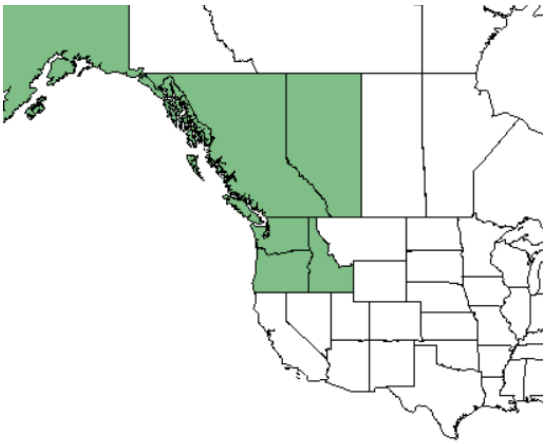
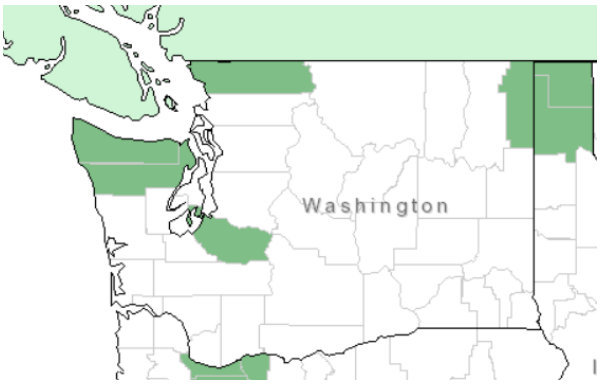


Fig 3&4. *S. streptopoides* regional distribution.
Image credit: USDA Plants Database[1]



TAXONOMY	
Plant Family	
Scientific Name	Liliaceae
Common Name	Lily Family
Species Scientific Name	
Scientific Name	*Streptopus streptopoides* (Ledeb.) Frye & Rigg
Varieties	var. *brevipes* (Baker) Fassett var. *japonica* (Maxim) Fassett var. *koreanus* (Komarov) Kitamura
Sub-species	Ssp. *streptopoides*
Cultivar	
Common Synonym(s)	*Streptopus ajanensis* *Streptopus streptopoides* *Streptopus brevipes* *Smilacina streptopoides* *Kruhsea tilingiana*[2]
Common Name(s)	Small twistedstalk
Species Code (as per USDA Plants database)	STST3
GENERAL INFORMATION	
Geographical range	Within Washington, *S. stroptopoides* var. *brevipes* has been recorded in Whatcom, Clallam, Jefferson, Pierce, and Pend Oreille county. [1] In North America, var. *brevipes* can be found around the Pacific Northwest and up along to Pacific coast to British Columbia and Alaska.[1] Globally, there are many varieties of *S. streptopoides* distributed throughout east Asia, with documented specimens from Japan, Korea, and Siberia.[5] See maps for more detail.
Ecological distribution	Found in subalpine, boreal meadow, and riparian ecosystems, mostly in shade.[3]
Climate and elevation range	Altitude range: 0–1600 m[2]
Local habitat and abundance	*S. stroptopoides* is associated with coniferous forests.[5]
Plant strategy type	*S. stroptopoides* is a shade dwelling understory plant.[5]
Plant characteristics	*S. stroptopoides* is a perennial forb/herb with simple branches and leaves, as well as elongate creeping rhizomatous roots. The leaves are alternate with parallel venation.[5] It grows to around 50cm in height and produces small singular flowers with green/white tepals. These flowers bloom from June to July.[3]

PROPAGATION DETAILS: FROM SEED	
Ecotype	No information
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container
Stock Type	Container
Time to Grow	Two or more growing seasons[7]
Target Specifications	Well-developed root system.[7]
Propagule Collection Instructions	Seeds should be collected as soon as berries ripen in the summer.[6]
Propagule Processing/Propagule Characteristics	
Pre-Planting Propagule Treatments	Seeds are vulnerable to desiccation and should be kept from drying out before sowing.[4] According to Kawano H[4], they should be subjected to a year of cold stratification followed by heat stratification, but Plants for a Future[7] suggests that they can be sowed immediately after collection.
Growing Area Preparation / Annual Practices for Perennial Crops	Plants have been found to do best in moist light soil with organic matter.[8] Should grow in light shade.[7]
Establishment Phase Details	Plant freshy harvested seeds in soil, allow them to overwinter in cold frames, and they will sprout in the spring. [9*]
Length of Establishment Phase	No information.
Active Growth Phase	No information.
Length of Active Growth Phase	No information.
Hardening Phase	No information.
Length of Hardening Phase	No information.
Harvesting, Storage and Shipping	No information.
Length of Storage	No information.
Guidelines for Outplanting Performance on Typical Sites	Should be planted in the spring.[7] Plants do best in moist shaded areas.[5]
Other Comments	***Protocol derived from protocols for *S. amplexifolius***
PROPAGATION DETAILS: VEGETATIVELY	
Ecotype	No information
Propagation Goal	Plants

Propagation Method	Vegetative
Product Type	Container
Stock Type	Container
Time to Grow	One year[7]
Target Specifications	Well-developed root system. [7]
Propagule Collection Instructions	Divide the rhizomes in early spring.[7] Another option is to be used if salvaging a population is to cut the rhizomes into 1 inch pieces, allow the cut ends to callous for a few days, and then plant in growing bed.[9*]
Propagule Processing/Propagule Characteristics	No information.
Pre-Planting Propagule Treatments	No information.
Growing Area Preparation / Annual Practices for Perennial Crops	Plants have been found to do best in moist light soil with organic matter.[8] Should grow in light shade.[7]
Establishment Phase Details	Plant small divisions in pots in a greenhouse or cold frame.[7]
Length of Establishment Phase	No information.
Active Growth Phase	No information.
Length of Active Growth Phase	No information.
Hardening Phase	No information.
Length of Hardening Phase	No information.
Harvesting, Storage and Shipping	No information.
Length of Storage	No information.
Guidelines for Outplanting / Performance on Typical Sites	Should be planted in the spring.[7] Plants do best in moist shaded areas.[5]
Other Comments	***Protocol derived from protocols for similar genera**
INFORMATION SOURCES	
References	1. "Streptopus Streptopoides (Ledeb.) Frye & Rigg: Small Twistedstalk." *Natural Resources Conservation Service: Plants Database*, USDA, plants.usda.gov/core/profile?symbol=STST3. Accessed 5/20/2020 2. "Sreptopus streptopoides" *Global Plants Herbarium*, JSTOR, https://plants.jstor.org/compilation/Streptopus.streptopoides Accessed 5/20/2020 3. Mochizuki K, Kawakita A. 2017. Pollination by fungus gnats and associated floral characteristics in five families of the Japanese flora. Annals of Botany

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Date Protocol Created or Updated	5/25/2020

This propagation protocol template was modified by J.D. Bakker from that available at: http://www.nativeplantnetwork.org/network/SampleBlankForm.asp