Plant Propagation Protocol for *Gaultheria humifusa*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/*GAHU*
Spring 2015


Image 1. 2008 George W. Hartwell.


Image 2. 2010 Barry Breckling

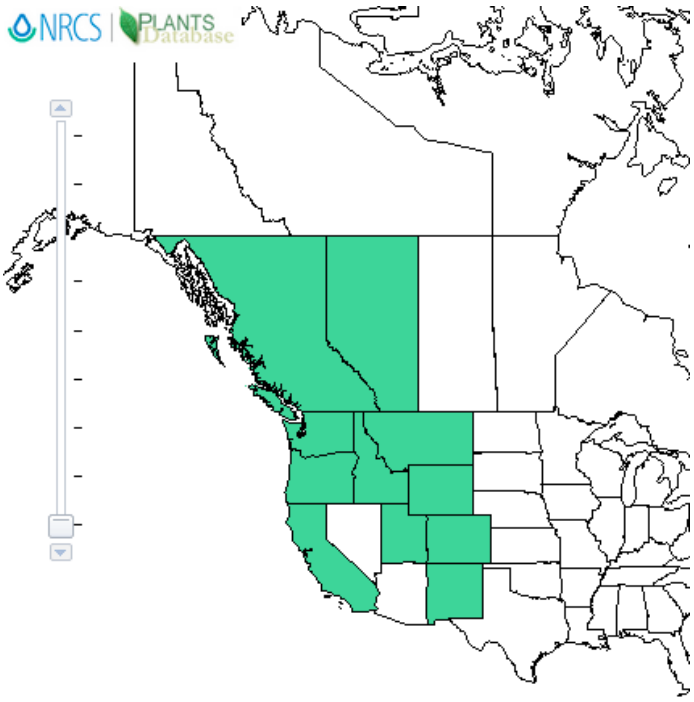

Image 3. Distribution Map of *Gaultheria humifusa**

TAXONOMY	
Plant Family	
Scientific Name	Ericaceae *[2]*
Common Name	Heath Family [2]
Species Scientific Name	
Scientific Name	*Gaultheria humifusa* (Graham) Rydb. [2]
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	*Gaultheria myrsinites* Hook. *Vaccinium humifusum* Graham [7] *Gaultheria ovatifolia* L. *Gualtheria procumbens* A. Gray [2]
Common Name(s)	Alpine wintergreen, Tea-berry, Alpine spicy wintergreen [3]
Species Code (as per USDA Plants database)	GAHU [2]
GENERAL INFORMATION	
Geographical range	British Columbia, Washington, Oregon, California, Colorado, Idaho, Montana, Utah, Wyoming Please refer to image 3*

Ecological distribution	Moist to wet, subalpine to alpine Olympics and Cascade mountains of Washington; British Columbia south to northern California, east to the Rocky Mountains from Alberta to Colorado [7]
Climate and elevation range	Elevation: 1600-4000 m. Climate: Moist to wet [7]
Local habitat and abundance	Coniferous woodlands and in moist soils along stream banks, subalpine to alpine wet meadows, rocky mountain slopes. [6] Abundant [7]
Plant strategy type / successional stage	Prefers sun and light shade Soil type: light (sandy) and medium (loamy) PH ranges from neutral to very acidic Abundant species Groundcover, mat-like structure
Plant characteristics	Perennial woody shrub Rhizomes Low-spreading, forms flat patches on the ground and rocks. Stems are less than 20 cm. in length, sometimes peeling. trailing Small oval-shaped leaves 1-2 cm in length, leathery Bears bell-shaped flowers with white to light pink corollas and golden-colored anthers. After pollination, mature into dull red fruit capsules (5.7 mm wide). Flowers from July-August. Flowers are hermaphrodite, insect pollinated. [1] [3] Edible leaves and fruit Seeds: high quantities, winged Longevity: not found
PROPAGATION DETAILS	
Ecotype	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container
Stock Type	
Time to Grow	Approximately 6 months
Target Specifications	3 cm tall Leaves will initially be very small [3]

Propagule Collection Instructions	Perform layering technique in early Spring or late Summer [9] Collect seeds in late Summer
Propagule Processing/Propagule Characteristics	Seeds are viable for a couple years Seeds to be separated from fruit. Please note: most efficient technique was not provided, however threshing might work
Pre-Planting Propagule Treatments	1 year: Pre-chill for 4-10 weeks Surface sow in lime-free compost Seeds germinate within 1-2 months at 20 degrees C Prick out seedlings when they are 25 mm, plant in individual pots and place in light shade for first Winter.
Growing Area Preparation / Annual Practices for Perennial Crops	In greenhouse: Seeds will be in petri dishes until germination Germinants will be placed in lime-free surface compost Individual pots Shady portion of the greenhouse.
Establishment Phase Details	[5] Plant out in late Spring/early Summer, in shade Roots form in late Summer or Spring
Length of Establishment Phase	Seeds to be planted (outside) in early Spring or early Summer
Active Growth Phase	Early Spring-early Autumn
Length of Active Growth Phase	March-August
Hardening Phase	March-July Leave in greenhouse in individual pots under light shade for first winter.
Length of Hardening Phase	1 year
Harvesting, Storage and Shipping	Harvest: Storage: Chill nursery stock at 41 degrees F Seeds in Petri dishes with moist medium (i.e. paper towel)
Length of Storage	1 year
Guidelines for Outplanting / Performance on Typical Sites	Greenhouse to site: Plant out in late spring or early summer. Use Layering technique. [1] Seedling susceptible to frost so may need protection for first couple years after Outplanting. Good percentage usually take [5] For layering:

	Bend stem to ground, cover with soil leaving leaves above ground. Bend tip in vertical position and stake in place. Perform layering in early Spring or late Summer. Check for root formation. [9]
Other Comments	Seedlings are liable to damping off, make sure to give them plenty of ventilation.
INFORMATION SOURCES	
References	Please refer to Reference section below
Other Sources Consulted	Please refer to Reference section below
Protocol Author	Briana Brodin
Date Protocol Created or Updated	05/19/15

References:

[1] Wallace, Gary. "UC/JEPS: Jepson Manual Treatment for Gualtheria." UC/JEPS: Jepson Manual Treatment for Gaultheria. Regents of University of California. Web. 19 May 2015.

[2] "Plants Profile for Gaultheria Humifusa (alpine Spicywintergreen)." Plants Profile for Gaultheria Humifusa (alpine Spicywintergreen). United States Dept. of Agriculture. Web. 19 May 2015.

[3] "Gaultheria Humifusa Alpine Wintergreen, Alpine Spicywintergreen PFAF Plant Database." Gaultheria Humifusa Alpine Wintergreen, Alpine Spicywintergreen PFAF Plant Database. Plants for a Future. Web. 19 May 2015.

[4] Huxley. A. The New RHS Dictionary of Gardening. 1992.

[5] Bean. W. Trees and Shrubs hardy in Great Britain. Vol. 1-4 and Supplement.

[6] "Flora of North America." Taxon Page. EFloras. Web. 19 May 2015.

[7] "WTU Herbarium Image Collection - Burke Museum." WTU Herbarium Image Collection - Burke Museum. Burke Museum of Natural History and Culture. Web. 19 May 2015.

[8] Pojar, Jim. "Shrubs." Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska. Lone Pine Pub., 1994. Print.

[9] Evans, Ervin, and Frank Blazich. "Plant Propagation by Layering." Plant Propagation by Layering. NC State University. Web. 19 May 2015.

[10] Evans, Ervin, and Frank Blazich. "Plant Propagation by Layering." Plant Propagation by Layering. NC State University. Web. 19 May 2015.

Image References:

Image 1
http://calphotos.berkeley.edu/imgs/128x192/0000_0000/0908/1272.jpeg

Image 2

http://calphotos.berkeley.edu/imgs/128x192/0000_0000/1010/2622.jpeg

Image 3

USDA Plant Database:

"Plants Profile for Gaultheria Humifusa (alpine Spicywintergreen)." Plants Profile for Gaultheria Humifusa (alpine Spicywintergreen). United States Dept. of Agriculture. Web. 19 May 2015.

Other sources consulted:

Slichter, Paul. "Alpine Spicy Wintergreen." Alpine Spicywintergreen, Alpine Wintergreen, Matted Wintergreen: Gaultheria Humifusa (Synonyms: Gaultheria Myrsinites, Vaccinium Humifusum). Hallyhosting. Web. 19 May 2015.