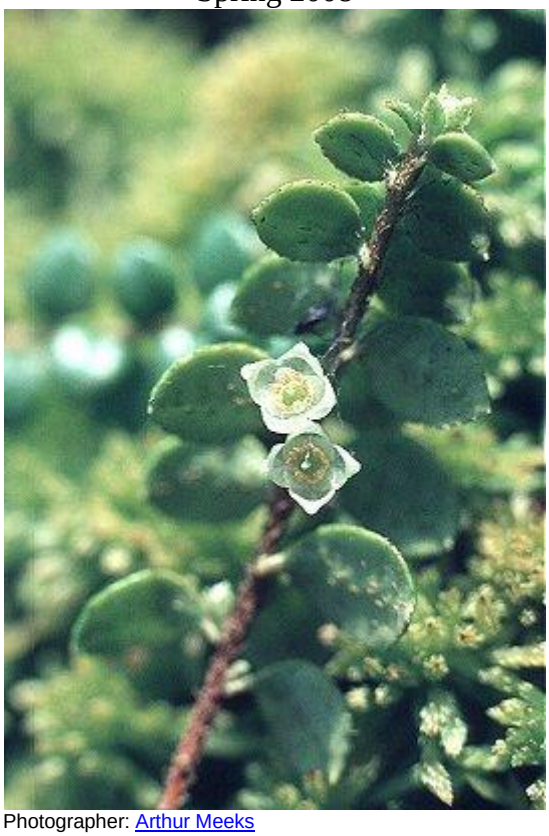
Plant Propagation Protocol for *Gaultheria hispidula*
ESRM 412 – Native Plant Production
Spring 2008



Photographer: Arthur Meeks
http://wisplants.uwsp.edu/scripts/detail.asp?SpCode=GAUHIS

TAXONOMY	
Family Names	
Family Scientific Name:	*Ericaceae*
Family Common Name:	Heath
Scientific Names	
Genus:	*Gaultheria*
Species:	*hispidula*
Species Authority:	(L.) Muhl. Ex Bigelow
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s) (may repeat this section multiple times as needed)	
Genus:	*Chiogenes*

Species:	*hispidula*
Species Authority:	(L.) Torr. & A. Gray
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Name(s):	Creeping snowberry, creeping wintergreen, moxie
Species Code (as per USDA Plants database):	GAHI2
GENERAL INFORMATION	
General Distribution (geographical range (states it occurs in), ecosystems, etc):	Throughout Canada, Northern U.S., and Pacific Northwest. May be extirpated in Ohio and North Carolina.
Climate and elevation range	Seldom occurs north of 56 degrees north latitude[i]. Elevations in which it occurs can vary, but it is generally found in lowland forests and bogs. It can be upland in the northern reaches of its range.
Local habitat and abundance; may include commonly associated species	Forests and bogs. Often found in wet areas and coniferous forests. Common around decaying logs. Often associated with sphagnum moss.
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Resprouts rapidly following fire[ii]. Also associated with acidic humus soils[iii]. Shade tolerant. Fire tolerant.
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants
Propagation Method	Seed

(Options: Seed or Vegetative):	
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	Container (plug)
Stock Type:	n/a
Time to Grow (from seeding until plants are ready to be outplanted):	Typically outplanted after first winter
Target Specifications (size or characteristics of target plants to be produced):	About 25mm tall
Propagule Collection (how, when, etc):	Blooms mid-spring, with an active growth period in spring and summer. Seeds ripen around late summer. Fruit is a white berry[iv].
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	The typical fruit contains many seeds that are light orange-yellow, irregularly wedge-shaped, 0.7-1 mm long, 0.5-0.7 mm wide, wingless, not tailed, lineolate or lineate[v]. Seeds are relatively small at 3,000,000 per pound[vi].
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	The seed requires a period of cold stratification. Pre-chill for 4 - 10 weeks and then surface sow in a lime-free compost in a shady part of the greenhouse and keep the compost moist[vii]
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	Can be grown in a shady area of a greenhouse, unheated. Vented containers. Requires moderate watering; keep soil moist. Lime-free compost, slightly acidic.
Establishment Phase (from seeding to germination):	Around 1-2 months.
Length of Establishment Phase:	
Active Growth Phase (from germination until plants are no longer actively growing):	n/a
Length of Active Growth Phase:	n/a
Hardening Phase (from	n/a

end of active growth phase to end of growing season; primarily related to the development of cold-hardiness and preparation for winter):	
Length of Hardening Phase:	n/a
Harvesting, Storage and Shipping (of seedlings):	n/a
Length of Storage (of seedlings, between nursery and outplanting):	n/a
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	Plants typically do well once established. A low growing sub-shrub, growing up to 40 cm long. Blooms mid-spring.
Other Comments (including collection restrictions or guidelines, if available):	*Gaultheria hispidula* is considered endangered or threatened in Connecticut, Maryland, New Jersey, and Rhode Island. It is presumed extirpated in Ohio, and is at risk of becoming endangered in Washington[viii]. Small cranberry (*Vaccinium oxycoccos*) grows in similar habitats and is sometimes associated with creeping snowberry. Its small, strongly reflexed flowers are very different from the campanulate flowers of creeping snowberry. Vegetatively they are superficially similar in appearance and could be confused. Small cranberry lacks the coarse bristles on the leaf undersides, which are prominent on the creeping snowberry[ix].
INFORMATION SOURCES	
References (full citations):	See below
Other Sources Consulted (but that contained no pertinent information) (full citations):	Cofrin Center for Biodiversity Herbarium University of Wisconson at Greenbay http://www.uwgb.edu/biodiversity/herbarium/shrubs/gauhis01.htm (last accessed 4/16/08) Robert Freckman Herbarium University of Wisconsin-Stevens Point http://wisplants.uwsp.edu/scripts/detail.asp?SpCode=GAUHIS (last accessed 4/16/08)
Protocol Author (First and last name):	Erik Injerd
Date Protocol Created or	4/15/08

Updated (MM/DD/YY):	

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

INFORMATION SOURCES

[i] Forest Capital of Canada 2001 web page. *Gaultheria hispidula*, creeping snowberry, Ericaceae (Heath Family). Available at http://www.borealforest.org/shrubs/shrub16.htm

[ii] David R. Foster. Vegetation Development Following Fire in Picea Mariana (Black Spruce)- Pleurozium Forests of South-Eastern Labrador, Canada *The Journal of Ecology*, Vol. 73, No. 2 (Jul., 1985), pp. 517-534

[iii] Bergeron, Y., and Bouchard, A. 1983. Use of ecological groups in analysis and classification of plant communities in a section of western Quebec. Vegetatio, 56: 45–63.

[iv] Rhoads, A.F., and T.A. Block. 2000. The Plants of Pennsylvania: An Illustrated Manual. University of Pennsylvania Press, Philadelphia, Pennsylvania. 1061 pages.

[v] Brooklyn Botanical Garden web page. 2001. *Gaultheria hispidula*. Available at http://www.bbg.org/research/nymf/encyclopedia/eri/gau0010b.htm

[vi] USDA, NRCS web page. Conservation Plant Characteristics for creeping snowberry. Available at http://plants.usda.gov/plants/cgi_bin/plant_attribute.cgi?symbol=GAHI2

[vii] Sheat. W. G. *Propagation of Trees, Shrubs and Conifers.* MacMillan and Co 1948

[viii] United States Department of Agriculture. "PLANTS Profile for Gaultheria hispidula (creeping snowberry)." PLANTS Database. http://plants.usda.gov/java/profile?symbol=GAHI2 (last accessed 4/15/08)

[ix] Hays, Michael. Conservation Assessment for Creeping snowberry (Gaultheria hispidula) USDA Forest Service, Eastern Region, September 2001.