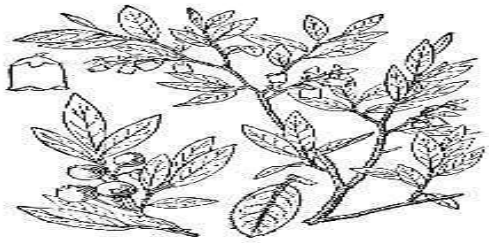
Plant Propagation Protocol for *Vaccinium myrtilloides*

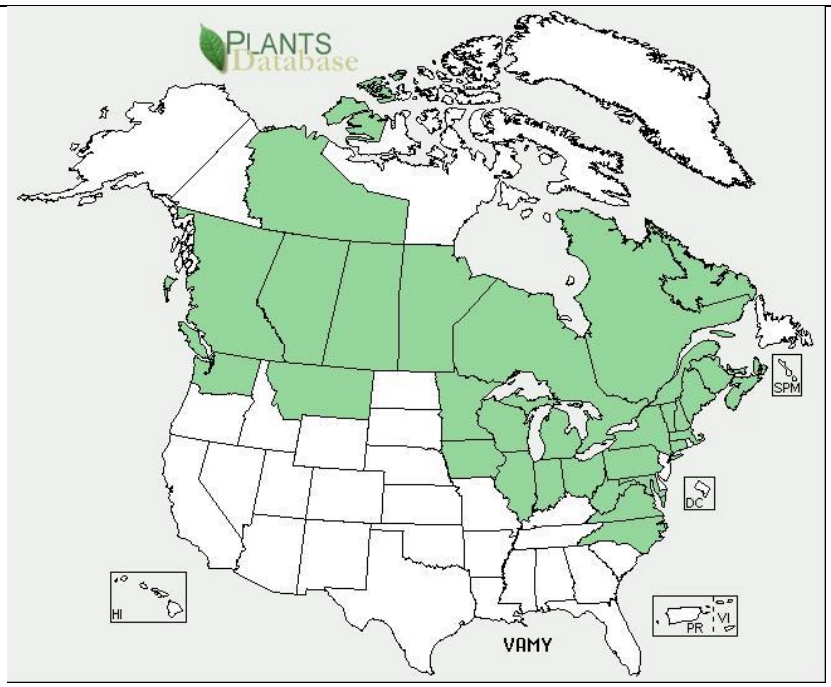
ESRM 412 – Native Plant Production

Protocol URL: https://courses.washington.edu/esrm412/protocols/VAMY.pdf



(USDA NRCS, 2014)

TAXONOMY	
Plant Family	
Scientific Name	Ericaceae
Common Name	Heath
Species Scientific Name	
Scientific Name	*Vaccinium myrtilloides* Michx.
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	*Vaccinium canadense* *Vaccinium angustifolium var. integrifolium* *Vaccinium angustifolium var. myrtilloides* *Vaccinium pennsylvanicum var. myrtilloides* *Cyanococcus Canadensis* (USDA NRCS, 2014) (USFS, 2014).
Common Name(s)	Velvetleaf huckleberry, velvetleaf blueberry, sourtop, bleuet fausse-myrtille, sourtop blueberry, Canada blueberry (USDA GRIN, 2014).
Species Code (as per USDA Plants database)	VAMY
GENERAL INFORMATION	

Geographical range	 USA (CT, IA, IL, IN, KY, MA, MD, ME, MI, MN, MT, NC, NH, NY, OH, PA, VA, VT, WA, WI, WV), CAN (AB, BC, LB, MB, NB, NS, NT, ON, PE, QC, SK) (USDA NRCS, 2014)
Ecological distribution	V. myrtilloides can be found in subalpine and submontane forests. It is common in dry coniferous forests but can be found in various wetlands, on mountain slopes, in mountain meadows and alpine meadows as well as in rock outcrops. It is prevalent in clearcuts and disturbed areas. It is only semi-tolerant of shade but more tolerant than other Vaccinium species. (USFS, 2014)
Climate and elevation range	V. myrtilloides occurs in perhumid to the subhumid climates at elevations from sea level to 1,200m. (USFS, 2014)
Local habitat and abundance	V. myrtilloides occurs in white–red-jackpine (Pinus strobus - P. Resinosa - Pinus banksiana), spruce –fir (Picea – abies spp), oak-hickory (Quarcus – Carya spp), aspen-birch(Populus tremuloides- Betula spp), hemlock-sitka spruce (Tsuga heterophylla – Picea spp), maple (Acer spp) and lodgepole pine (Pinus contorta) forests as well as in the alpine and brachen fern (Pteridium aquilinum) grasslands. In intense burn areas beadruby (Maianthemum canadense) -velvetleaf huckleberry-bunchberry (Cornus canadensis) communities form. In low burn areas of Canada, wintergreen (Gaultheria procumbens)-Canada beadruby–velvetleaf huckleberry-bunchberry communities form (USFS, 2014).
Plant strategy type / successional stage	V. myrtilloides is an early successional colonizer that can be found in disturbed areas such as clearcuts and burn areas. It can also be found in climax forest stands; however, in forested areas it has a limited lifecycle without flowering or fruiting except in openings (USFS, 2014).
Plant	V. myrtilloides is a dwarf shrub, which grows to about .5 m. It spreads primarily

characteristics	by rhizomes. A single plant can reach a diameter of up to 10 m. It is deciduous, has alternate leaves, which are narrow-elliptic to sublanceolate, green, and pubescent on both the top and the underside. However, pubescence can be limited to the underside of the leaf (Barnes et al, 1981). Twigs are green, brown or green-brown and pilose. Flowers are drooping white with pink green or purple tinge. They can be campanulate or urceolate. Fruit is 4-10 mm in size, round, blue, frosty blue or white and has a crown (USFS, 2014). Flowers are insect pollinated. (Usui et al, 2005)
PROPAGATION DETAILS	
Ecotype	N/A
Propagation Goal	Plants, Cuttings, Seeds
Propagation Method	Seed, Vegetative
Product Type	N/A
Stock Type	Wild
Time to Grow	6 to 7 weeks (USFS, 2014).
Target Specifications	Plants, Seeds, Fruit.
Propagule Collection Instructions	Seeds: Collect ripe berries of V. myrtilloides with a hand rake from wild plants in the late summer depending on area (Yarborough, 2012). Vegetative: Collect rhizome cuttings in the fall, taking at least 2 nodes in each root cutting (McKechnie et al 2012).
Propagule Processing/ Propagule Characteristics	Seeds: There are about 460 V. myrtilloides seeds per pound. Seeds are not dormant. Seeds viability significantly decreased after long-term storage Each berry will contain about 16 viable seeds (USFS 2014). Vegetative: Rhizome cuttings can be taken from wild stock by removing plant from the ground, cleaning the root mass and cutting taking from healthy roots. At least two nodes are needed for successful propagation (McKechnie et al 2012).
Pre-Planting Propagule Treatments	Seeds: V. myrtilloides fresh berries can be placed in a modified blender with a ratio of 1:1 water to berries and blended to dislodge seeds. Seeds can then be strained and placed in water. Viable seeds will sink; pulp and other seeds should float. Allow seeds to dry for 2 days. Seeds can be stored cold for at least 1 year. Seeds may have increased germination rates after acid scarification (USFS, 2014). Vegetative: Collect roots from wild stock in fall. Collect at least 2 nodes with the total collected root ~ 8 cm in length. (McKechnie et al 2012).
Growing Area Preparation	Seeds: For sewing V. myrtilloides, a 1:1 sand-peat mixtures at a pH of 4.5 is the recommended substrate (USFS, 2014). Material should be well wetted.

/ Annual Practices for Perennial Crops	Vegetative: For V. myrtilloides rhizhome cuttings, vermiculite or 1:1 peat moss: perlite are both suitable planting medium (McKechnie et al 2012).
Establishment Phase Details	Seeds and Vegetative: Seeds and rhizome cuttings should be kept at a temperature fluctuation of 21 °C/10 °C day/night and a photoperiod of 15 hours until germination. They should be watered every 7 to ten days. Anti-fungal treatment may be advisable (McKechnie et al 2012).
Length of Establishment Phase	Seeds: V. myrtilloides Seeds take an average of 44-55 days to germinate. (McKechnie et al 2012). Vegetative: No timeframe was provided for shoot production from rhizome cuttings.
Active Growth Phase	V. myrtilloides will require water every 7-10 Days, or 2.5cm of rain per week Frost in this period can damage flowers (McKechnie et al, 2012)(Yarborough, 2012).
Length of Active Growth Phase	V. myrtilloides has a 28 day growing phase in certain area/conditions (USFS, 2014).
Hardening Phase	Continue to provide ample water.
Length of Hardening Phase	V. myrtilloides will reach maturation of lateral buds 60 days after bud growth in certain areas/conditions (USFS, 2014).
Harvesting, Storage and Shipping	N/A
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical Sites	V. myrtilloides outplanting locations should be plowed, and have well drained acidic soils (pH 4-5). Mulching can help to protect again frost damage. Allow to grow without pruning for four years for root/rhizome growth. Plants need 2.5cm rainfall per week, otherwise irrigation is required. (Yarborough, 2012).
Other Comments	Application of auxin does not impact sprouting of v. myrtilloides rhizome cuttings. Heating pads negatively impact germination. Rhizomal cuttings should only be collected where plants are abundant and proper collection authority has been previously acquired (McKechnie et al, 2012). Fire treatment may assist in mechanical harvest of this species (Kloet and Pither, 2000).
INFORMATION SOURCES	

References	Barnes, Burton Verne, Warren H. Wagner, and Charles Herbert Otis. 1981. *Michigan trees: a guide to the trees of Michigan and the Great Lakes region*. Ann Arbor: University of Michigan Press. Kloet, S. P. V., and J. Pither. 2000. "Is Fall Burning Preferable to Spring Burning for Promoting Growth Characteristics Favorable for Mechanical Harvesting in Vaccinium myrtilloides Michaux?" *HORTSCIENCE*. 35: 608-610. McKechnie, Irene M., Philip J. Burton, and Hugues B. Massicotte. 2012. "PROPAGATION OF Vaccinium membranaceum and V. myrtilloides BY SEEDS, HARDWOOD STEM, AND RHIZOME CUTTING METHODS.". *Native Plants Journal (University of Wisconsin Press)*. 13 (3). United States Department of Agriculture Natural Resource Conservation Service Website (USDA NRCS). Vaccinium myrtilloides (VAMY) - Velvetleaf huckleberry. Accessed 4/18/2014. http://www.fs.fed.us/database/feis/plants/shrub/vacmyt/all.html#BOTANICAL%20AND%20ECOLOGICAL%20CHARACTERISTICS United States Department of Agriculture Germplasm Resources Information Network (USDA GRIN). TAXON: Vaccinium myrtilloides Michx. Accessed 4/19/2014. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?41039 United States Forest Service Website (USFS). Index of Species Information: Vaccinium myrtilloides. Accessed 4/22/14. http://www.fs.fed.us/database/feis/plants/shrub/vacmyt/all.html#BOTANICAL%20AND%20ECOLOGICAL%20CHARACTERISTICS Usui, M., P. G. Kevan, and M. Obbard. 2005. "Pollination and breeding system of Lowbush Blueberries, Vaccinium angustifolium Ait. and V. myrtilloides Michx. (Ericacaeae) in the boreal forest". *CANADIAN FIELD NATURALIST*. 119 (1): 48-57. Yarborough, D. E. 2012. "Establishment and Management of the Cultivated Lowbush Blueberry (Vaccinium angustifolium)". *International Journal of Fruit Science*. 12 (1-3): 14-22.
Other Sources Consulted	Flora of North America – www.eFloras.org Native Plant Network - http://www.nativeplantnetwork.org/network/ Hansen's Northwest Native Plant Database - http://www.nwplants.com/
Protocol Author	Steven M. Norton
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