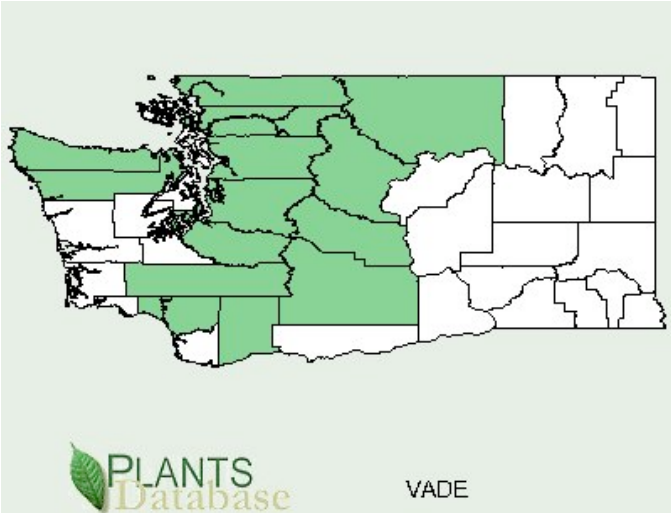

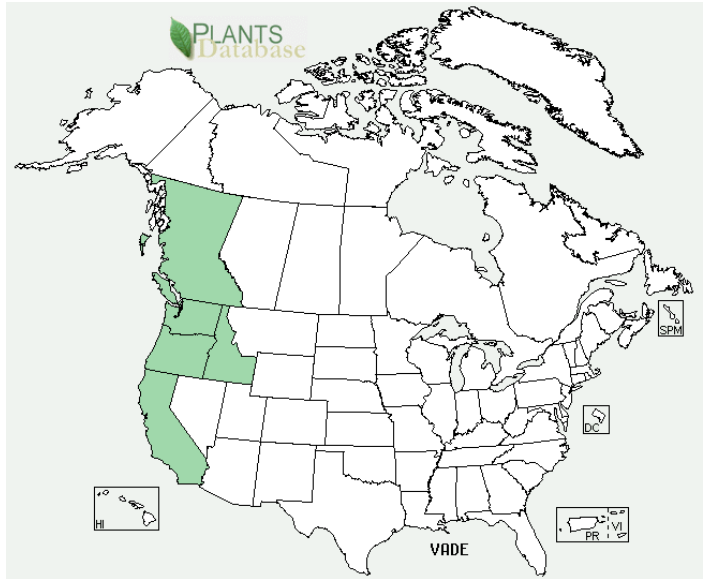


Plant Propagation Protocol for *Vaccinium deliciosum*
 ESRM 412 – Native Plant Production
 Spring 2010



Photo Lindsey Koepke @ USDA-NRCS PLANTS Database

TAXONOMY	
Family Names	
Family Scientific Name:	Ericaceae
Family Common Name:	Heath Family
Scientific Names	
Genus:	<i>Vaccinium</i>
Species:	<i>deliciosum</i>
Species Authority:	Charles Vancouver Piper (1867–1926)
Variety:	N/A
Sub-species:	N/A
Cultivar:	N/A
Authority for Variety/Sub-species:	N/A
Common Synonym(s):	N/A
Common Name(s):	Cascade bilberry, Blueleaf huckleberry, Little huckleberry, Rainer bilberry [6]
Species Code:	VADE
GENERAL INFORMATION	
Geographical range:	 <p style="text-align: center;">  VADE </p>

	
Ecological distribution:	Moist, shady conditions, along coastal areas, in sub-alpine conifer forests and alpine fields. [6] Also on dry slopes at elevations greater than 1300 m [5].
Climate and elevation range:	Lower montane to alpine 600-2,000 m. [3, 6]
Local habitat and abundance:	Mount Rainier, Cascade and Olympic mountains. [1]
Plant strategy type / successional stage:	<p>Found to withstand fire. Commonly grows alongside Subalpine fir (<i>Abies lasiocarpa</i>), Mountain hemlock (<i>Tsuga mertensiana</i>), Alaska yellow-cedar (<i>Xanthocyparis nootkatensis</i>), and Pacific silver fir (<i>Abies amabilis</i>).</p> <p>Additional associations found in Washington include pink mountain heather (<i>Phyllodoce empetrifomis</i>), partridgefoot (<i>Luetkea pectinata</i>), white mountain heather (<i>Cassiope mertensiana</i>), big huckleberry, and Sitka mountain-ash (<i>Sorbus sitchensis</i>), mountain bistort (<i>Polygonum bistortoides</i>), showy sedge (<i>Carex spectabilis</i>), subalpine lupine (<i>L. arcticus</i> var. <i>subalpinus</i>), slender hawkweed (<i>Hieracium gracile</i>), white avalanche-lily (<i>Erythronium montanum</i>), and Sitka valerian (<i>Valeriana sitchensis</i>), mountain hairgrass (<i>Vahlodea atropurpurea</i>), and Cusick's speedwell (<i>Veronica cusickii</i>) [1]</p>
Plant characteristics:	Sub-shrub 5-30cm high. Branches are angled slightly. Grayish, finely pubescent young branches turn purple in maturity. Leaves obovate, 2-4 cm long, minutely dentate, with white cast to underside. Solitary globular flowers, pale pink, and found in leaf axils. Dark blue berries 6-10mm diameter. [2, 4, 5, 6]
PROPAGATION DETAILS	
Ecotype:	N/A
Propagation Goal:	Plants
Propagation Method:	Vegetative.
Product Type:	Rhizome divisions.
Stock Type:	Container.
Time to Grow:	1 year.
Target Specifications:	No information available.

Propagule Collection:	Divide sections of rhizome either in early spring or late summer/early autumn of at least 10cm length. [6]
Propagule Processing/Propagule Characteristics:	Place divisions into vermiculite medium at a temperature of 21 degrees C. [6]
Pre-Planting Propagule Treatments:	N/A
Growing Area Preparation / Annual Practices for Perennial Crops :	When roots and meristematic activity have established, move plantlets to pots containing 1:1 peat sand medium. [6]
Establishment Phase :	No information available.
Length of Establishment Phase:	No information available.
Active Growth Phase:	Until plants are of a desired size.
Length of Active Growth Phase:	No information available.
Hardening Phase:	No information available.
Length of Hardening Phase:	No information available.
Harvesting, Storage and Shipping:	No information available.
Length of Storage:	No information available.
Guidelines for Outplanting / Performance on Typical Sites:	Plant in shady, moist conditions. [6]
Other Comments:	Prefers moist soils. Rapid growth. [5]
PROPAGATION DETAILS	
Ecotype:	N/A
Propagation Goal:	Plants
Propagation Method:	Vegetative.
Product Type:	Hardwood cuttings.
Stock Type:	Container.
Time to Grow:	1 year.
Target Specifications:	No information available.
Propagule Collection:	Take 15 cm cuttings from wood that is at least 2 years old in January or February. [5]
Propagule Processing/Propagule Characteristics:	Place the cuttings horizontally, 2.5 cm deep in 2:1 peat sand medium. [5]
Pre-Planting Propagule Treatments:	N/A
Growing Area Preparation / Annual Practices for Perennial Crops :	Protect the new shoots in May/June from direct sunlight. [5]
Establishment Phase :	No information available.
Length of Establishment Phase:	3-4 months.
Active Growth Phase:	3-4 months.
Length of Active Growth Phase:	No information available.
Hardening Phase:	No information available.
Length of Hardening Phase:	3-4 months.
Harvesting, Storage and Shipping:	No information available.
Length of Storage:	No information available.
Guidelines for Outplanting / Performance on Typical Sites:	Plant in shady, moist conditions. [6]
Other Comments:	Prefers moist soils. Rapid growth. [5]
PROPAGATION DETAILS	
Ecotype:	N/A
Propagation Goal:	Plants
Propagation Method:	Vegetative.
Product Type:	Softwood cuttings.
Stock Type:	Container.
Time to Grow:	1 year.
Target Specifications:	No information available.
Propagule Collection:	Halfway through June or July, take cuttings from growth that has just turned woody. [5]

Propagule Processing/Propagule Characteristics:	Cuttings should have a heel and be less than 10 cm in length. [5]
Pre-Planting Propagule Treatments:	N/A
Growing Area Preparation / Annual Practices for Perennial Crops :	Place cuttings in 1:1 sand, peat medium in the shade. [5]
Establishment Phase :	Until rooted.
Length of Establishment Phase:	3 months.
Active Growth Phase:	Transplant to nursery bed after rooting. [5]
Length of Active Growth Phase:	9 months.
Hardening Phase:	No information available.
Length of Hardening Phase:	No information available.
Harvesting, Storage and Shipping:	No information available.
Length of Storage:	No information available.
Guidelines for Outplanting / Performance on Typical Sites:	Plant in shady, moist conditions. [6]
Other Comments:	Prefers moist soils. Rapid growth. [5]
PROPAGATION DETAILS	
Ecotype:	N/A
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants.
Propagation Method (Options: Seed or Vegetative):	Seed.
Product Type:	Container.
Stock Type:	Container transplants.
Time to Grow:	12 weeks.
Target Specifications:	None specified.
Propagule Collection:	Collect seeds in late summer to early fall. [5, 6]
Propagule Processing/Propagule Characteristics:	Clean seeds first in water by macerating them and allowing the excess pulp to separate. [5, 6]
Pre-Planting Propagule Treatments:	Allow the seeds to dry completely. [5, 6]
Growing Area Preparation / Annual Practices for Perennial Crops:	Sow seeds directly on a moist peat medium; they require no stratification. [5, 6]
Establishment Phase:	Best to keep temperature at 18 degrees C during the day and 13 degrees C at night. [5, 6]
Length of Establishment Phase:	7 weeks.
Active Growth Phase:	Best to keep temperature at 20 degrees C in the day and 14 degrees C at night. [5, 6]
Length of Active Growth Phase:	3 weeks.
Hardening Phase:	Best to fertilize at 10 weeks, then place in 1:1 peat, sand medium in individual pots. [5, 6]
Length of Hardening Phase:	2 weeks.
Harvesting, Storage and Shipping:	No information available.
Length of Storage:	No information available.
Guidelines for Outplanting / Performance on Typical Sites:	Plant in shady, moist conditions. [6]
Other Comments:	
INFORMATION SOURCES	
References:	1. Arnet, Joseph and Rex Crawford. 2007. <i>The Status of Huckleberries in Washington State</i> . Washington Natural Heritage Program, WA Department of Natural Resources.

	<p>2. Hitchcock, C. Leo and Arthur Cronquist. 1976. <i>Flora of the Pacific Northwest: An Illustrated Manual</i>. University of Washington Press, Seattle, Washington.</p> <p>3. Kruckeberg, Arthur R. 1982. <i>Gardening with Native Plants of the Pacific Northwest: An Illustrated Guide</i>. University of Washington Press, Seattle, Washington.</p> <p>4. Pojar, Jim and Andy Mackinnon. 1994. <i>Plants of the Pacific Northwest Coast</i>. Lone Pine Publishing, Redmond, Washington.</p> <p>5. Rose, Robin, Caryn E.C. Chachulski, and Diane L. Haase. 1998. <i>Propagation of Pacific Northwest Native Plants</i>. Oregon State University Press, Corvallis, Oregon.</p> <p>6. USDA, NRCS. 2010. The PLANTS Database (http://plants.usda.gov/java/profile?symbol=VADE 8 May 2010). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.</p>
Other Sources Consulted:	<p>1. Deno, Norman C. 1993. <i>Seed Germination Theory and Practice</i>. State College, PA.</p> <p>2. Dirr, Michael A. 1998. <i>Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses</i>. Stipes Publishing, Champaign, Illinois.</p> <p>3. Hartmann, Hudson T., Dale E. Kester, Fred T. Davies, Jr., Robert L. Geneve. 2007. <i>Plant Propagation Principles and Practices, Seventh Edition</i>. Prentice-Hall of India, New Delhi.</p> <p>4. Pettinger, April and Brenda Costanzo. 1993. <i>Native Plants in the Coastal Garden: A Guide for Gardeners in British Columbia and the Pacific Northwest</i>. Whitecap Books, North British Columbia, Canada.</p>
Protocol Author:	Kava Vale
Date Protocol Created or Updated:	05/17/2010

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