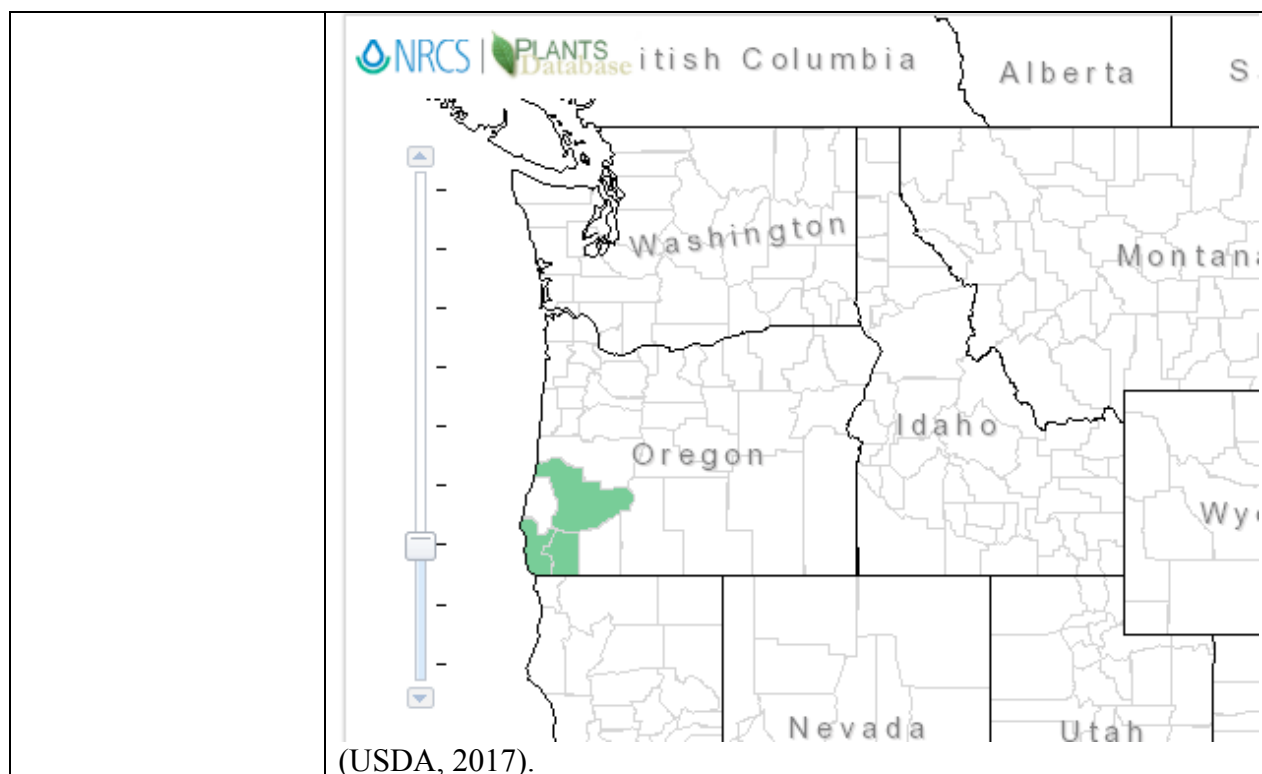


**Plant Propagation Protocol for *Kalmiopsis leachiana***

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/KALE.pdf>

<b>TAXONOMY</b>	
<b>Plant Family</b>	
Scientific Name	Ericaceae
Common Name	Heath
<b>Species Scientific Name</b>	
Scientific Name	<i>Kalmiopsis leachiana</i>
Varieties	‘LePiniec’ and ‘Umpqua River’ forms have been reported from localities in the backcountry of the Siskiyou’s in southwestern Oregon and along the Umpqua River (Kruckeberg, 2012).
Sub-species	None
Cultivar	None
Common Synonym(s)	<i>Rhododendron leachianum</i> L. <i>Rhodothamnus leachianus</i>
Common Name(s)	Siskiyou kalmiopsis (Meinke & Liu, 2017). North Umpqua kamiopsis (USDA, 2017).
Species Code (as per USDA Plants database)	KALE (USDA, 2017)
<b>GENERAL INFORMATION</b>	
Geographical range	Siskiyou & Umpqua River regions of OR (Plant Database - Lady Bird Johnson Wildflower Center, 2007).



(USDA, 2017).

Ecological distribution	Xeric shrub community or sparse woodland (Meinke & Liu, 2017). Extremely limited range.
Climate and elevation range	Mid-elevation (2-4,000 ft).
Local habitat and abundance	Extremely rare, occurs in stony slopes, mountains of Southern Curry county and along the upper North Umpqua River, and Northeastern Douglas County (Peck, 1961). Associated plants include <i>Quercus sp.</i> , <i>Arctostaphylos uva-ursi</i> , <i>Synthris reniformis</i> , <i>Cheilanthes gracillima</i> , poison oak, <i>ribes sanguinum</i> , <i>Calocedrus decurrens</i> , <i>Sedum spathulifolium</i> , <i>cornus nuttallii</i> , <i>Viola sempervirens</i> (in roadside colonies), <i>Sarcodes sanguinea</i> (Doonan, 1995).
Plant strategy type / successional stage	Stress-tolerator, withstanding xeric conditions (Doonan, 1995)
Plant characteristics	Low shrub with the aspect of <i>Kalmia</i> ; leaves evergreen, glandular-dotted beneath corymbose flowers (Peck, 1961). Narrowly endemic to dry, rocky slopes at mid elevations in the Siskiyou Mountains. Small shrub grows slowly to 1 ft height and twice as broad (Robson et al., 2008).

### PROPAGATION DETAILS

Ecotype	Not available
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Propagules
Stock Type	Not available
Time to Grow	They can be treated as if they were dwarf <i>Lapponicum</i> rhododendrons

	(Kruckeberg, 2012). For <i>Rhododendron lapponicum</i> : 15-24 months (Rhododendron Lapponicum - Plants for a Future, 2017).
Target Specifications	For <i>Rhododendron lapponicum</i> : Can be transplanted as soon as plants can be handled (Plant Database – Lady Bird Johnson Wildflower Center, 2007). Probably about 1.5” at out planting. Healthy root ball desirable.
Propagule Collection Instructions	Seed collected summer of fall, stored under dry, cool conditions (Robson et al., 2008).
Propagule Processing/Propagule Characteristics	ca. 50-150, ovoid, not winged, not tailed; testa reticulate. x = 12 (Meinke & Liu, 2017).
Pre-Planting Propagule Treatments	Unlike many flowering shrubs, <i>Rhododendron</i> needs no pretreatment for germination (Jordan, 1973).
Growing Area Preparation / Annual Practices for Perennial Crops	Grown in containers or flats. Use well drained soil with good organic content, slightly acidic (Robson et al., 2008). Mix of compost, peat moss, and clay room used successfully for plant growth. Fertilizer should not be used (Sersanous, 1953).
Establishment Phase Details	For <i>Rhododendrons</i> generally: Seed into growing medium/seed tray and water. Seepage from bottom of container should be observed. Place into clear plastic bags and fold opening under bottom. Condensation will form. Place 6-10” under fluorescent lights and keep at room temperature (72 degrees) or near west window until full germination. Remove plastic after 10 days. Place in greenhouse setting where full light is received from October to April, experimenting with artificial light from 2p to midnight, varying as needed (Jordan, 1973).
Length of Establishment Phase	Seeds will germinate in 3-8 weeks or longer (Plant Culture and Care, 2017). Lighted germination (as described above) experienced in as quick as 1 week with some <i>Rhododendrons</i> (Jordan, 1973).
Active Growth Phase	Active during first 2 years where artificial light may be used to supplement establishment (Jordan, 1973). Outplanted active growth likely temperature and environmentally dependent. Some plants in the wild have been speculated to be up 10,000 years old (Doonan, 1995).
Length of Active Growth Phase	~6 months, varies with artificial lighting.
Hardening Phase	For <i>Rhododendron</i> : Cold frame ideal for intermediate between greenhouse and growing bed. Plant 2-year old seedlings close together in spring and then cover with cold frame in winter for first year, and possible second year depending on conditions (Jordan, 1973).
Length of Hardening Phase	1-2 years (with cold frame as intermediate during winter).
Harvesting, Storage and Shipping	For <i>Rhododendron</i> : Transplanting is not difficult, beds should be thoroughly watered before transplanting. Seedlings placed into 3 or 3.5 inch pots (1.5 inch high) with media, watered thoroughly, and placed /stored under lights until transplanted (Jordan, 1973).

Length of Storage	About 2 years.
Guidelines for Outplanting / Performance on Typical Sites	Can be grown successfully with perseverance, occasionally established in private and public gardens in the Pacific Northwest, Europe, and elsewhere. For restoration, natural habitat and conditions should be well understood as this plant is extremely particular and endemic to narrow regions of the PNW (Meinke and Liu, 2017).
Other Comments	Enjoys rocky conditions similar to those where it grows naturally near Dry Creek in Oregon; found growing on silicified-tuff in area with a lot of volcanic ash and highly siliceous ground waters. Rock is porous and tends to sweat, promoting seedling establishment in shaded or damper areas (Doonan, 1995).

### INFORMATION SOURCES

References (full citations)	<p>Doonan, Steve, and Phil Pearson. Woody Plants in the Rock Garden. Seattle: North American Rock Garden Society, 1995. Print.</p> <p>Jordan, Peter G. "A Modern Method for Propagating Rhododendrons from Seed." Scholarly Communication Department, Research &amp; Informatics, Virginia Tech Libraries. Journal American Rhododendron Society, Oct. 1973. Web. 24 May 2017.</p> <p>"Kalmiopsis Leachiana." Kalmiopsis Leachiana in Flora of North America @ Efloras.org. Floras of North America, n.d. Web. 22 May 2017.</p> <p>Kruckeberg, Arthur R. Gardening with Native Plants of the Pacific Northwest. Vancouver: Greystone, 2012. Print.</p> <p>Meinke, Robert J., and Shunguo Liu. "27. Kalmiopsis Rehder, J. Arnold Arbor. 13: 31, Plate 40. 1932." Kalmiopsis in Flora of North America @ Efloras.org. Flora of North America, n.d. Web. 24 May 2017.</p> <p>Peck, Morton Eaton. A Manual of the Higher Plants of Oregon. Portland, OR: Oregon State U, 1961. Print.</p> <p>"Plant Culture and Care." Propagating Rhododendrons and Azaleas. The American Rhododendron Society, n.d. Web. 24 May 2017.</p> <p>"Plant Database." Lady Bird Johnson Wildflower Center - The University of Texas at Austin. N.p., 01 Jan. 2007. Web. 22 May 2017.</p> <p>"Rhododendron Lapponicum." Pfaf Plant Search. Plants for a Future, n.d. Web. 24 May 2017.</p>
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	<p>Robson, Kathleen A., Alice Richter, and Marianne Filbert. Encyclopedia of Northwest Native Plants for Gardens and Landscapes. Portland, Or.: Timber, 2008. Print.</p> <p>Sersanous, C. I. "Kalmiopsis Leachiana." Scholarly Communication Department, Research &amp; Informatics, Virginia Tech Libraries. The American Rhododendron Society, 1953. Web. 24 May 2017.</p> <p>USDA, NRCS. 2017. The PLANTS Database (plants.usda.gov). National Plant Data Center, Rouge, LA 70874-4490 USA.</p>
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