

**Plant Propagation Protocol for Ribes Watsonianum**  
**ESRM 412 – Native Plant Production**  
**Spring 2009**



Figure 1: *Ribes Watsonianum*, Kittitas County, WA (Courtesy of Ben Legler @ the Burke Museum of Natural History and Culture)

(Legler, 2004)

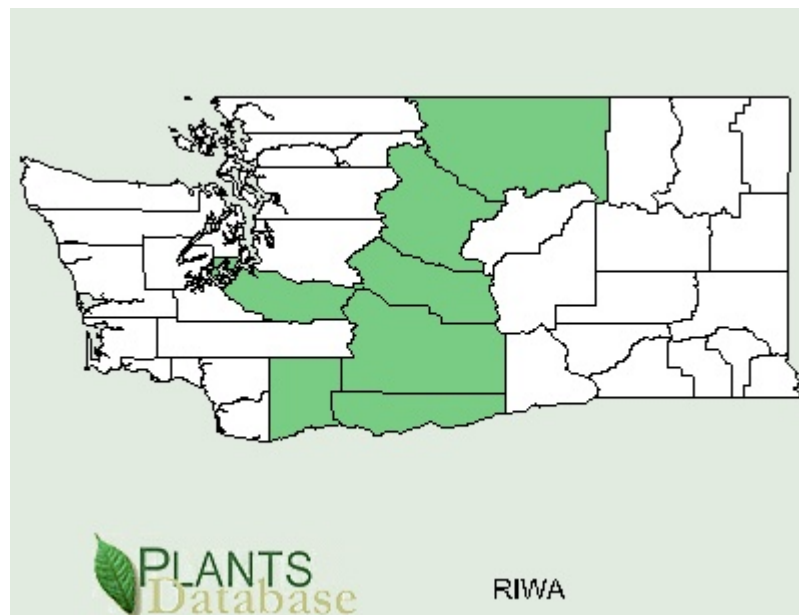
<b>TAXONOMY</b>	
Family Names	
Family Scientific Name:	Grossulariaceae
Family Common Name:	Currant family

Scientific Names	
Genus:	<i>Ribes</i>
Species:	<i>watsonianum</i>
Species Authority:	Koehne
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s) (include full scientific names (e.g., <i>Elymus glaucus</i> Buckley), including variety or subspecies information)	<i>Grossularia watsoniana</i> (Koehne) Coville & Britt.
Common Name(s):	Spring Gooseberry, Spiny Gooseberry, Watson Gooseberry
Species Code (as per USDA Plants database):	GRWA
GENERAL INFORMATION	
Geographical range (distribution maps for North America and Washington state)	Distribution: Northwestern U.S.A.: United States - Oregon, Washington



**Figure 2: Ribes Watsonianum distribution. Shaded - present, white - absent. (Cortesy: USDA plant database).**

(United States Department of Agriculture, 2009)



**Figure 3: RIWA in the state of Washington Shaded - present, white - absent. (Courtesy of (United States Department of Agriculture, 2009)**

Ecological distribution (ecosystems it occurs in, etc):	Habitat: moist woods, sunny edges of streams and margins of meadows in mountains. (Flora of the Inland Pacific Northwest, 2000)
Climate and elevation range	
Local habitat and abundance; may include commonly associated species	Prefers moist soils. It can grow in semi-shade (light woodland) or no shade.
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	As one of the many <i>Ribes</i> species, <i>Ribes Watsonianum</i> serves as the alternate host to white pine blister rust, a disease that has had a severe impact on forest management.
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)	Generally it is a low growing shrub. It flowers in May-June, and the seeds ripen from July to August. The flowers are hermaphrodite and are pollinated by Insects.
PROPAGATION DETAILS (Forest Service, 1948) (if other is not noted)	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants
Propagation Method (Options: Seed or Vegetative):	Seed



**Figure 4: R. Watsonianum seeds. (Curtsey of (Encyclopedia of Life, 2009)**

Note: Plant could be propagated by Bare Root, Container, Seed, Cuttings, Layering and Micropropagation.

<p>Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))</p>	<p>Container (plug)</p>
<p>Stock Type:</p>	
<p>Time to Grow (from seeding until plants are ready to be outplanted):</p>	<p>The plants should be 5-6 cm in 6-7 weeks after germination. Prick out the seedlings into individual pots when they are large enough to handle and grow them on in a cold frame for their first winter, planting them out in late spring of the following year. (Plants For A Future, 2000)</p>
<p>Target Specifications (size or characteristics of target plants to be produced):</p>	
<p>Propagule Collection (how, when, etc):</p>	<p>To minimize consumption by birds the fruit should be picked or stripped from the branches as soon as possible after ripening. The fruit should be spread out to dry. To prevent overheating the fruit should be spread out into shallow layers.</p>

Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	To extract seeds one should macerate the berries in water. The empty seeds and pulp should flow away, while the filled seeds should be dried and run through the fan to remove any debris. The best way to store the seeds: low initial moisture content, at low temperature and in the sealed containers. Stored seed requires 4 - 5 months cold stratification at between 0 to 9°C and should be sown as early in the year as possible (Baskin & Baskin, 1998). Under normal storage conditions the seed can remain viable for 17 years or more.
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	
Establishment Phase (from seeding to germination):	Natural germination occurs in the following spring after dispersal. Germination could be increased by cold stratification in sand or peat preceded by stratification at warm temperatures. It is also possible to scarify the seeds mechanically or use a short period acid treatment.
Length of Establishment Phase:	
Active Growth Phase (from germination until plants are no longer actively growing):	
Length of Active Growth Phase:	
Hardening Phase (from 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:	
Harvesting, Storage and Shipping (of seedlings):	
Length of Storage (of seedlings, between nursery and outplanting):	The plants commence bearing in 5 years from seed and 2 years from cuttings (California Rare Fruit Growers, Inc., 1996).
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	
Other Comments (including collection restrictions or guidelines, if available):	
PROPAGATION DETAILS (Young & Young, 1992)	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants
Propagation Method (Options: Seed or Vegetative):	Seed
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules	Barefoot (field grown)

(seeds, cuttings, poles, etc.))	
Stock Type:	
Time to Grow (from seeding until plants are ready to be outplanted):	Seeds are usually sown in the fall at the rate of 630 to 840 per m <sup>2</sup> and covered with 0.6 am of soil. From a kilogram of seed about 400 seedlings are produced.
Target Specifications (size or characteristics of target plants to be produced):	
Propagule Collection (how, when, etc):	To minimize the loss to the birds the fruit should be collected as soon as they are ripe. The fruit can be macerated and the seeds recovered by flotation.
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	The seeds are highly dormant and require warm stratification after prolonged prechilling. Prechilling could be for up to 6 month.
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	
Establishment Phase (from seeding to germination):	
Length of Establishment Phase:	
Active Growth Phase (from germination until plants are no longer actively	



growing):	
Length of Active Growth Phase:	
Hardening Phase (from 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:	
Harvesting, Storage and Shipping (of seedlings):	
Length of Storage (of seedlings, between nursery and outplanting):	
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	
Other Comments (including collection restrictions or guidelines, if available):	
<b>PROPAGATION DETAILS</b> (US Department of Agriculture, 1974)	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants

Propagation Method (Options: Seed or Vegetative):	Seeds
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	Barefoot (field sown)
Stock Type:	
Time to Grow (from seeding until plants are ready to be outplanted):	
Target Specifications (size or characteristics of target plants to be produced):	
Propagule Collection (how, when, etc):	The fruit should be picked or stripped from the branches as soon as possible after ripening to minimize consumption by birds. Unless the seed is to be extracted immediately, it should be spread out to dry. To prevent overheating the fruit should be spread out into shallow layers.
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	To extract seeds one should macerate the berries in water. A fast method: put small quantities of the berries in the kitchen blender, cover the berries with water, and run blender for 15 to 45 seconds. The blender should run long enough to separate the sound seed from the pulp. Then one should add more water and allow the sound seed to settle. The empty seeds and pulp should flow away, while the filled seeds should be washed into a funnel lined with filter paper. Then the seed should be dried. Germination could be increased by cold stratification in sand or peat, or in a mixture of these media preceded by stratification at warm temperatures. It is also possible to scarify the seeds mechanically or use a short

	period acid treatment.
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	The best seedbed appears to be mineral soil well supplied with humus.
Establishment Phase (from seeding to germination):	Usually Ribes seed are sown in the fall, but it also could be stratified and sown in the spring. If sown in spring, the seed should be stratified. Nonetheless the general recommendation is to fall-sow whenever possible.
Length of Establishment Phase:	
Active Growth Phase (from germination until plants are no longer actively growing):	
Length of Active Growth Phase:	
Hardening Phase (from 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:	
Harvesting, Storage and Shipping (of seedlings):	
Length of Storage (of seedlings, between nursery and outplanting):	
Guidelines for Outplanting / Performance on	

Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	
Other Comments (including collection restrictions or guidelines, if available):	
<b>PROPAGATION DETAILS</b> Other methods - Cuttings (Hartmann, Kestler, Davies, & Geneve, 2002) (if other is not noted)	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Cutting
Propagation Method (Options: Seed or Vegetative):	Vegetative
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	
Stock Type:	
Time to Grow (from seeding until plants are ready to be outplanted):	Gooseberries root with more difficulty, than currants, but they still could be propagated by collecting hardwood cuttings 20 to 25 cm (8 to 10 in) long in late fall, stored in moist sand, sawdust, or peat moss at about 2°C for precallusing them at low temperatures over the winter, and then planted in the spring. The plants can be transplanted to their permanent location in one or two years, depending upon their growth..
Target Specifications (size or characteristics of	

target plants to be produced):	
Propagule Collection (how, when, etc):	
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	
Establishment Phase (from seeding to germination):	
Length of Establishment Phase:	
Active Growth Phase (from germination until plants are no longer actively growing):	
Length of Active Growth Phase:	
Hardening Phase (from 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:	
Harvesting, Storage and Shipping (of seedlings):	
Length of Storage (of seedlings, between nursery and outplanting):	
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	
Other Comments (including collection restrictions or guidelines, if available):	
<b>PROPAGATION DETAILS</b> (Hartmann, Kestler, Davies, & Geneve, 2002)	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants
Propagation Method (Options: Seed or Vegetative):	Vegetative
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings,	Barefoot

poles, etc.))	
Stock Type:	
Time to Grow (from seeding until plants are ready to be outplanted):	Mound layering is used for gooseberries. Shoots usually root well after one season. They are then cut off and transferred to the nursery row for a second season's growth before they are set out in their permanent location.
Target Specifications (size or characteristics of target plants to be produced):	
Propagule Collection (how, when, etc):	
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc):	
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc):	
Establishment Phase (from seeding to germination):	
Length of Establishment Phase:	
Active Growth Phase (from germination until plants are no longer actively growing):	
Length of Active	

Growth Phase:	
Hardening Phase (from 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:	
Harvesting, Storage and Shipping (of seedlings):	
Length of Storage (of seedlings, between nursery and outplanting):	
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	
Other Comments (including collection restrictions or guidelines, if available):	Note: Gooseberries can also be easily micropropagated and the rooted plantlets stored under refrigeration for as long as 130 days with 100 percent survival.
INFORMATION SOURCES	
References (full citations):	See Below
Other Sources Consulted (but that contained no pertinent information) (full citations):	See Below
Protocol Author	Yana Kazak



(First and last name):	
Date Protocol Created or Updated (MM/DD/YY):	4/28/2009

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