

'Oregon Snowflake' Flowering Currant

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1 'Oregon Snowflake' flowering currant

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10 Subject Category: Cultivar and Germplasm Releases

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14 *Additional index words.* *Ribes sanguineum*, Grossulariaceae, mutagenesis, EMS, ornamental plant
15 breeding, landscape plant

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17 chemical names: Ethyl methanesulfonate (EMS)

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19 Flowering currant (*Ribes sanguineum* Pursh.), also known as winter currant, is native to the West
20 Coast of the U.S., primarily west of the Coast Range from Southern California north to British
21 Columbia with populations also occurring in Idaho. The species is prized for its early spring flowers
22 in pendulous racemes of 7 to 10 cm in colors including white, pink, and rose-red. Improved
23 cultivars have been selected primarily based on floral traits. These include White Icicle™ (=‘Ubric’)
24 with profuse white flowers on a shrub that reaches 2.5 m high and 1.8 m wide. ‘Pokey’s Pink’ and
25 ‘King Edward VII’ are grown for their clear pink and red flowers, respectively. The growth habit of
26 the species and most of its cultivars are larger than desired and the plants tend to become leggy and
27 exhibit an overall poor form. ‘Oregon Snowflake’ was developed at Oregon State University (OSU)
28 and released by the Oregon Agriculture Experiment Station for its improved plant habit, which is
29 mounding and semi-dwarf as well as its unique leaf shape.

30

31 **Origin**

32 ‘Oregon Snowflake’ was derived from wild-collected seeds purchased from Seven Oaks
33 Native Nursery (Albany, OR) that were treated with ethylmethane sulfonate (EMS) to induce
34 mutations that would result in plants with improved phenotypes. Lots of 500 seeds were immersed

35 in 50 mL each of 0, 0.2, 0.4, 0.8, and 1.2% EMS in a 0.1 M sodium phosphate buffer solution (pH
36 7.0). There were three replicates of each treatment and 24- and 48-h durations of each treatment.
37 Seeds were then triple-rinsed for 15 minutes each rinse for a total of 45 minutes in Millipore (EMD
38 Millipore, Billerica, MA) water and put into cold stratification at 3 °C for six weeks before sowing.
39 Seeds were sown in 25.4 cm x 50.8 cm flats filled with a 1:1 (v:v) mix of Sunshine potting mix
40 SB40 (Sun Gro Horticulture, Bellevue, WA) and douglas-fir [*Pseudotsuga menziesii* (Mirb.) Franco]
41 bark mulch.

42 'Oregon Snowflake' was selected in 2011 as accession OSU-11-0020-48-0-052 from a
43 population of approximately 300 surviving plants based on its highly dissected leaf morphology
44 while growing in a 1 L container in a glasshouse. It was propagated by stem cuttings and the
45 resulting plants were used to establish a replicated (non-randomized) trial in 2012 as plants 13-01
46 (original plant), 13-02, 13-03, 13-04, 13-05, and 13-06 at the Lewis-Brown Horticultural Research
47 Farm (Corvallis, OR; Fig. 1). Container-grown plants were also distributed to commercial nurseries
48 in Oregon for evaluation under Material Transfer Agreements (MTA).

49

50 **Description**

51 'Oregon Snowflake' is a new and distinct cultivar of flowering currant being released primarily as an
52 alternative to White Icicle™, the most popular white flowering cultivar in the trade. 'Oregon
53 Snowflake' was selected for its dissected foliage and compact, mounded, and semi-dwarf growth
54 habit (Figs. 1 and 2). A comparison of 'Oregon Snowflake' to White Icicle™ for leaf and growth
55 habit characteristics that demonstrates the distinctness of 'Oregon Snowflake' is presented in Table
56 1. 'Oregon Snowflake' leaves were palmatifid with five lobes and deep sinuses with lobes that were
57 serrate-incised (Fig. 2). Leaves of the initial flush of 'Oregon Snowflake' were similar to wild-type
58 (e.g. White Icicle™) leaves with three rounded lobes and shallow sinuses but subsequent flushes of
59 growth exhibited the distinct leaf morphology described above. The adaxial surfaces of immature

60 and mature leaves were green (RHS 137B; Royal Hort. Soc., 2007). The abaxial surface of
61 immature leaves was green (RHS 137D) with veins that were a lighter color (RHS 138C).
62 Inflorescences were pendulous racemes that averaged 10 cm with 39 flowers. Flowering begins in
63 mid-March in Corvallis; overall flowering phenology and flower morphology for ‘Oregon
64 Snowflake’ was comparable to White Icicle™. Flowers were tubular with reduced petals and a
65 prominent, showy calyx. The outer color was green-white (RHS 157D) and flowers averaged 2cm
66 from base of the pedicel to the tip of the calyx lobes. During early December 2013 plants
67 experienced -19 °C and flower buds of ‘Oregon Snowflake’ and White Icicle™ were killed above
68 the snow level; however, vegetative buds and stems of both cultivars survived. This freeze event was
69 unusual in its severity and earliness.

70

71 **Culture**

72 ‘Oregon Snowflake’, like other flowering currant cultivars, prefers moist, well-drained soil in full
73 sun or partial shade and is best used in shrub borders. After it is established, we expect that ‘Oregon
74 Snowflake’ will be moderately drought tolerant similar to the species; however, we have not tested it
75 without supplemental irrigation during summer.

76

77 **Propagation**

78 Plants have been repeatedly propagated via stem cuttings. Terminal softwood cuttings treated with a
79 basal dip of 1,000 ppm aqueous solution of indole butyric acid potassium salt root readily. We have
80 observed at least 80% rooting success of terminal cuttings but only about 45% of non-terminal
81 lateral stem cuttings rooted. ‘Oregon Snowflake’ has retained its characteristics with no variants
82 through four years of container and three years of field growing as well as successive propagation
83 via stem cuttings (at least five successive serial propagation events) in the research program at OSU
84 as well as in commercial nurseries. Initial flushes of growth exhibit leaf morphology more closely

85 resembling wild-type; however, subsequent flushes of growth clearly demonstrate the characteristic
86 dissected leaf morphology of 'Oregon Snowflake'. A herbarium voucher was deposited into the
87 OSU Herbarium as accession OSC 240116.

88

89 **Availability**

90 OSU has submitted a US Plant Patent application for 'Oregon Snowflake' and will retain the rights.
91 Propagation and production rights, as well as a list of licensed growers, can be obtained by
92 contacting the Senior Intellectual Property & Licensing Manager, Office for Commercialization and
93 Corporate Development, 312 Kerr Administration Building, OSU, Corvallis, OR 97331-2140.
94 Information on the release and small numbers of liners or stem cuttings may be obtained from R.N.
95 Contreras.

96

97 **Literature Cited**

98 Royal Hort. Soc. 2007. RHS Colour Chart. 5th Ed. London, UK.

99 Table 1. Comparison of *Ribes sanguineum* 'Oregon Snowflake' and White Icicle™.

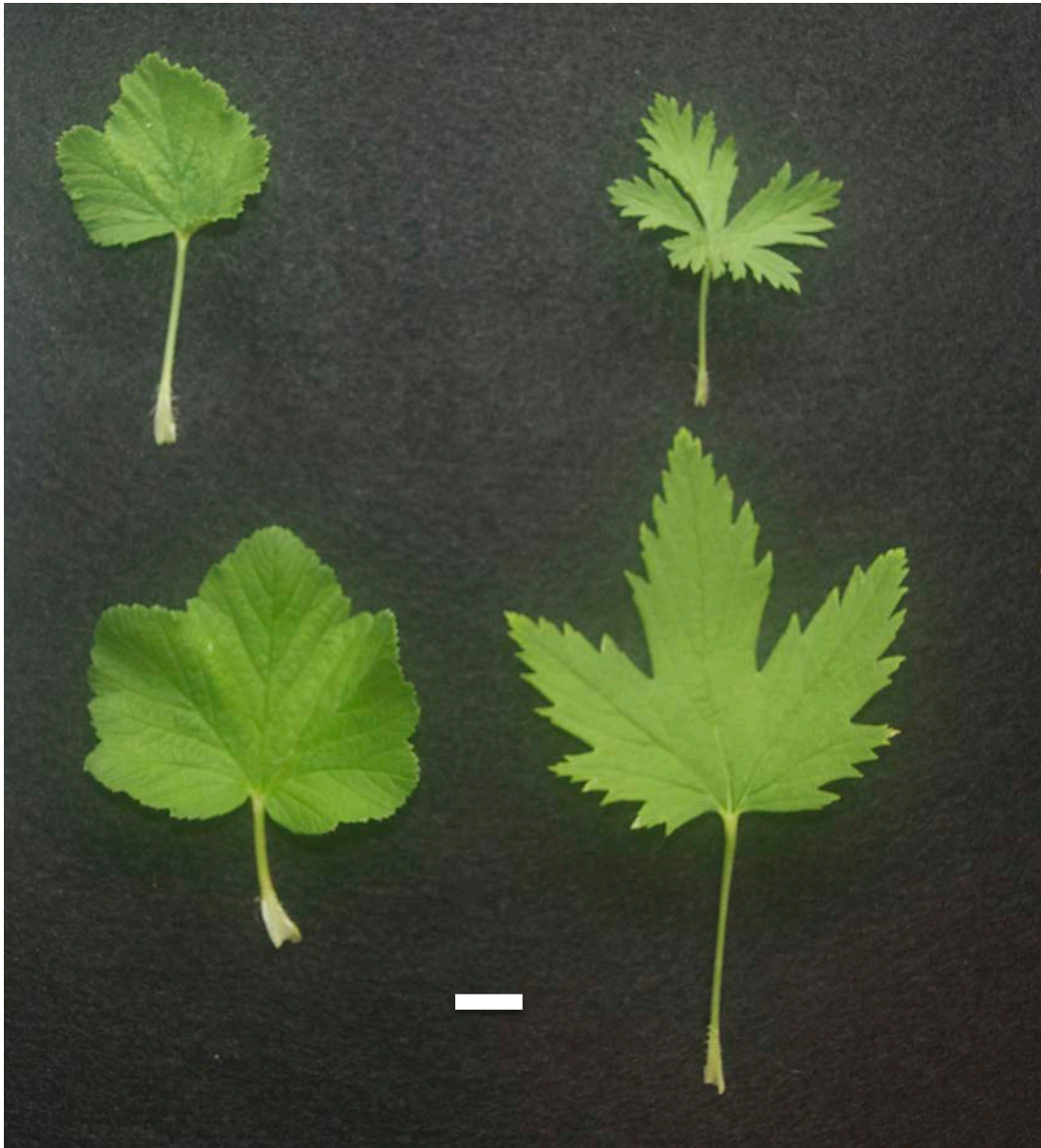
100	Cultivar		
101	Trait	'Oregon Snowflake'	White Icicle™
102	Mature height ^z	121 cm	154 cm
103	Mature width	133 cm	115 cm
104	Growth habit	Densely branched, semi-dwarf;	Upright, ascending branches; few
105		low, mounded shape	lateral branches
106	Leaf shape	Palmatifid with 5 lobes, deep	Rounded lobes (5) with
107		sinuses; lobes serrate-incised	shallow sinuses; crenate-serrate
108	Leaf length with		
109	petiole	92.8 mm	53.3 mm
110	Leaf blade length	50.6 mm	36.7 mm
111	Leaf width	52.6 mm	53.4 mm

112 ^z'Oregon Snowflake' measurements were collected on 20 March 2014 from original plant that
 113 was planted in spring 2012 as a 11.4 L container-grown plant. White Icicle™ measurements
 114 were collected on 20 March 2014 from a plant that was planted spring 2013 as an 11.4 L
 115 container-grown plant. The comparative height of White Icicle™ was likely underestimated by
 116 this measurement, as the plant was one year younger than 'Oregon Snowflake'.

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129 Fig. 1. *Ribes sanguineum* 'Oregon Snowflake' during winter demonstrating its dense branching.
130 The original plant is in the foreground with five replicates planted after it, which demonstrates
131 the consistency of growth habit in plants propagated from stem cuttings.



132
133 Fig. 2. Comparison of leaves of *Ribes sanguineum* White Icicle™ leaves (left) and 'Oregon
134 Snowflake' (right), including immature leaves (top) and mature leaves (bottom). Scale = 1cm.