

Testing two genera

OSU plant trials put several cultivars of *Arctostaphylos* and *Grevillea* to the test

This article marks the beginning of a series provided by Oregon State University and the Oregon Association of Nurseries to keep the industry informed on recent research and current topics. Every month a new article provided by OSU will appear in the pages of Digger.

By Diana K. Colvin

Into the soil with you (but not too deeply)!

With that benediction, student interns and Master Gardener volunteers, led by community horticulturalist Neil Bell, tucked varieties of *Arctostaphylos* and *Grevillea* into warm Willamette Valley loam in September.

The young plants' new home is a field near the entrance to the Oregon State University North Willamette Research and Extension Center (NWREC) in Aurora, Ore. They will grow there for several years. At set intervals, researchers will evaluate how these plants perform in the landscape.

The two genera are attractive, drought-tolerant, evergreen shrubs and groundcovers that appreciate lean soils (e.g., soils that hold the compost). Both

are pest and disease resistant, require good drainage and prefer full sun.

Arctostaphylos is probably most familiar to growers and gardeners as *A. uva-ursi* (bearberry, kinnikinnick), a groundcover widely distributed in the Northern Hemisphere. However, many species are native to Western North America and are known as manzanita.

Some forms grow in coastal conditions; others thrive inland in coniferous forests or on rocky slopes. Shrub forms bear satiny cinnamon bark – they're related to madrone (*Arbutus menziesii*). All produce urn-shaped blooms in late winter and spring that lure bees and grow fruit that birds find tasty.

Grevillea is a large genus of fine-textured shrubs and some groundcovers native to various altitudes and exposures in Australia. Some cultivars and species are known to be hardy in USDA Zone 7b. Research hasn't been done to test the hardiness of others.

Probably the best known, and perhaps the hardiest *Grevillea* for the Pacific Northwest, is *G. victoriae*, which bears unusual, red spidery flowers in winter and spring. In fact, *G. victoriae* has made the list of shrubs recommend-



NWREC summer intern Diana Colvin checks ID labels and health of *Arctostaphylos* (manzanita) plants before their September planting.

About the genus: *Arctostaphylos*

Height and width vary from wide-spreading creepers to small trees. Leaves are small, leathery, mid green to gray green, ovate to round. Some varieties have foliage that is edged with red in fall or new growth that is red. Flowers are small, urn-shaped, white or pale pink, from late winter to early spring. The berrylike fruit is pleasing to birds; some is attractive. Most shrub forms have smooth cinnamon bark.

Several species are native to areas of Oregon, including *A. canescens*, *glandulosa* and *columbiana*. Growing requirements vary with species. Some are coastal and some are inland, at different elevations. Most prefer good drainage and full sun.

About the genus: *Grevillea*

More than 350 species and hybrids, mostly bearing fine-textured foliage. Foliage forms can range from finely divided or pinnate to needlelike, with colors from yellow-green to mid and dark green. Some groundcover types, but most are small to large shrubs with blooms that are spidery and carried in dense clusters.

One species, *G. hookeriana*, is called black or red toothbrushes because of the color and shape of its blooms. Bloom colors range from red, pink, lavender and cream to white, yellow, apricot, orange, black and bicolors. Most bloom fall through winter, with some sporadically flowering throughout the year. In Australia, several species of birds are adapted to gathering nectar from the flowers.

Growing requirements: Many are not hardy to heavy frost and dislike summer watering. Can't tolerate salt-laden soils and are sensitive to high levels of phosphorus as well. They prefer good drainage and full sun.

Cultivars grown with success in the Pacific Northwest include:

G. 'Canberra Gem' (syn. 'Canberra'), a shrub with open growth to 8 feet tall, 12 feet wide; needlelike bright green 1-inch leaves; and clusters of red flowers in spring and intermittently at other times.

G. juniperina, juniper-leaf grevillea, can be a prostrate or upright shrub; leaves are narrow and prickly; clustered flowers can be in shades of red, apricot or yellow in late winter through early spring and into summer.

G. 'Poorinda Constance' (syn. 'Constance'), a shrub with open growth to 8 feet tall, 12 feet wide. The leaves are not quite as needlelike as 'Canberra Gem'. They are deep green above and almost white beneath. It bears clusters of red-orange flowers in spring and often again in fall.

G. victoriae, also known as royal *Grevillea*, is an upright-to-spreading shrub from 6 feet tall and wide. It has gray-green, 4-inch, narrow oval leaves, and clusters of red-orange flowers in spring and summer.



Arctostaphylos cultivars come in many forms, from groundcovers to trees. This manzanita is a nicely shaped tree form.



'Long John' is one of the many *Grevillea* cultivars being tested by Oregon State University.



Arctostaphylos 'Wayside' is one of many nice, mound-shaped groundcover forms of manzanita.

ed as Great Plant Picks (www.great-plantpicks.org) for Northwest gardeners.

Several other species and cultivars have proven hardy in the region. Over a long season, they produce flowers that are popular with bees and hummingbirds.

About the research

Boutique nurseries and adventurous gardeners in the Northwest have experimented with the plants for some years. Bell will add data with these randomized field tests.

He'll record hardiness and disease resistance, measure growth, and track flowering, plant form and foliage quality.

Bell, a Marion and Polk County community horticulturalist, values them for their drought tolerance but also sees aesthetic and practical applications. Some forms of manzanita could be excellent taller (2-3 foot) groundcovers that grow densely enough to suppress weeds, he said. The issue will be eliminating those susceptible to leaf spot.



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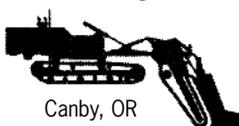


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A *Grevillea* seedling that originated in Neil Bell's home garden is included in the plant trial. It's a hybrid of *G. 'Poorinda Constance'* and *G. victoriae*.

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The grevilleas are appealing for their long, off-season flowering and varied foliage forms, but must prove themselves in this climate, he said.

Bell received project funding in 2007 from the Washington State Department of Agriculture. He and staff from NWREC traveled to California and obtained *Arctostaphylos* cuttings and seedlings from botanic gardens and nurseries in December 2008. They also obtained *Grevillea* starts from the botanic gardens at University of California at Santa Cruz and local sources.

Bell also contributed seedlings from his garden that are natural hybrids of *G. 'Poorinda Constance'* and *G. victoriae*. Xera Plants, a wholesale specialty nursery in Sherwood, Ore., grew the plants for the trials.

Bell and crew moved more than a thousand of the small plants to NWREC in June. The manzanitas were in 4- and 6-inch pots, while the grevilleas were in a mix of container sizes. The latter were transplanted to 4- and 6-inch containers holding a uniform media. They lived in an uncovered hoop house, where they were watered and weeded before plant-out.

Not smooth sailing

Some heartache awaited. Soon after the grevilleas were transplanted, staff

members observed many plants were struggling. They added a low dose of an organic fertilizer, which unfortunately was followed by hot weather over the July 4 weekend. Despite regular watering, some varieties weakened further and died.

EC and pH tests revealed high soluble salt levels, so the plants were flushed with water repeatedly. Continued EC testing and soaking over several weeks brought the EC numbers down to acceptable levels and the plants improved.

Meanwhile, nearly all the manzanitas thrived, so much so that taller-growing varieties got a haircut before they were planted.

Then, in late August, hot weather arrived again, and the planting was delayed two weeks.

September's plant-out included some 86 forms of *Arctostaphylos*, with three and four representatives of each; and 70 forms of *Grevillea*, again three to four plants of each.

Within each genus, the plants were placed randomly in rows 12 feet apart, 8 feet between plants in rows. Yes, some of the shrubs will get that big.

"We'll grow them like a typical homeowner would," Bell said. "No special sprays or preparation."

During the fall, the plants will be irrigated, but not fertilized or pruned. Then, it's survival of the fittest, except for some weeding.

Bell, who has also conducted *Ceanothus*, *Cistus*, *Halimium* and *Hebe* trials in Western Oregon, knows there will be some attrition, especially among the less-hardy grevilleas. However, he expects the field results will tempt more nurseries and gardeners.

"The next two or three years will transform that area of North Willamette," he predicted. ☺

Diana Colvin was an intern in 2009 with the North Willamette Research and Extension Center. She can be reached at 503-761-3818 or dgkcolvin@comcast.net.



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