

GROWING KNOWLEDGE

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Assessing evergreen shrubs

Pseudodictamnus hirsutus (Hairy Sage) is a native of the western Mediterranean. This mint-family member is a sub-shrub which develops a rounded, spreading canopy of upright stems with woolly foliage, topped by whorls of small purple-white blooms. Bumblebees love this plant and were plentiful throughout the bloom period. This subshrub grew to 2.75 feet tall by 5.5 feet wide. PHOTO COURTESY OF OREGON STATE UNIVERSITY

Plant evaluation program looks at drought-tolerant groundcover shrubs for landscapes in the maritime Pacific Northwest

BY HEATHER STOVEN AND NEIL BELL

The Northwest Plant Evaluation Program has been assessing broad-leaf evergreen shrubs since the program was initiated in 2000. The program is located at the Oregon State University

North Willamette Research and Extension Center (NWREC) in Aurora, Oregon.

The aim of this project is to identify flowering shrubs suitable for use in landscapes west of the Cascade Mountains.

In general, the plants evaluated are underutilized in Pacific Northwest landscapes. It is therefore useful to obtain more information about their hardiness and landscape suitability for our region. Previous plants evaluated include *Hebe*, *Ceanothus*, *Cistus* and *Halimium*, *Arctostaphylos*, and *Grevillea*.

All of the trials except *Hebe* have been grown without irrigation after estab-

lishment, as tolerance of summer drought has also been a focus of the evaluations.

The latest trial

The most recent trial of groundcover plants includes a wide selection of shrubs and sub-shrubs which were deemed suitable for the trial by virtue of their growing wider than they are tall. The trial included a number with fairly tall, but spreading growth habits which would not typically be thought of as groundcovers.

This trial combines some low-growing selections from previous evaluations as well as landscape industry stan-

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dards and plants collected in France and England. A selection of the plants in the trials are listed in Table 1 (Page 35).

Some of the plants in the trial were collected internationally as cuttings in October 2017 and September 2018. Thirty plant species from 11 genera were collected from Pepiniere Filippi, a nursery in Meze, France that specializes in drought-tolerant Mediterranean plants. Additionally, 33 species and genera were collected as cuttings from the Cistus and Phlomis National Plant Collections in Leeds and Mortehoe, England, respectively.

Additional underutilized or industry standard plants were obtained from Oregon and California nurseries.

Cuttings from both locations were stuck immediately after receipt in community trays using bottom heat and overhead mist in a greenhouse at NWREC. After establishment, the plants were upshifted to 4-inch pots, then into a quart container before planting into a ½-acre field at NWREC.

The initial plants collected from Meze, France, plus the industry standard groundcovers, were planted in September 2019. The plants collected in 2018 from England were planted into added rows adjacent the field in November 2021. Each of the accessions in the trial were replicated five times and planted into an open field within a 3-foot strip of weed mat to inhibit weeds.

Other than spot spraying for weeds, the evaluation received no pesticide applications, nor were fertilizers used other than in the containers prior to planting. Irrigation was applied only immediately after planting until fall rains began. No pruning was done. The lack of inputs allows for the evaluation of plant form and quality as well as pest susceptibility in a low-input system. Funding from an Oregon Department of Agriculture / Oregon Association of Nurseries nursery research grant assisted with the propagation and field establishment of the groundcovers planted in 2019.

Data collected in this and the other Northwest plant evaluation trials include: plant size, flowering, cold injury, pest



One standout in the trial was *Phlomis x margaritae*, a hybrid between *P. composita* and *P. purpurea* from southern Spain. PHOTO COURTESY OF OREGON STATE UNIVERSITY



Grevillea australis 'Poorinda Leane' is a cross between *G. juniperina* and *G. victoriae* made by the renowned self-taught hybridist Leo Hodge of Australia. PHOTO COURTESY OF OREGON STATE UNIVERSITY

or disease issues, as well as a subjective assessment of the overall landscape appearance of the individual plants. Symptoms of cold injury included minor leaf injury, to major dieback/stem injury, to plant death in some circumstances.

The first portion of the trial, planted in 2019, was completed in 2023 and removed thereafter. The second portion of the trial, planted in 2021, remains in the field, and data is still being collected.

The challenges to the plants in this trial include the periodic winter cold but also summer drought. In addition, some of the Mediterranean species seemed to be poorly adapted to the silty clay loam soil that is characteristic of NWREC. Many died from what appeared to be root disease issues.

Winter temperatures during the first portion of the trial, from 2019–2023, were relatively mild for the region with the >>

Collected and underutilized shrubs

- Arctostaphylos spp.*
- Artemesia spp.*
- Baccharis pilulatus*
- Pseudodictamnus spp.*
- Brachyglottis greyi*
- Ceanothus spp.*
- Cistus spp.*
- Grevillea spp.*
- Halimium lasianthum*
- Helichrysum spp.*
- Hypericum spp.*
- Lavandula spp.*
- Phlomis spp.*
- Salvia rosmarinus*
- Santolina spp.*
- Teucrium spp.*

Industry standard shrubs

- Buxus sinica* ‘Tide Hill’
- Calluna vulgaris*
- Cotoneaster spp.*
- Erica spp.*
- Euonymus fortunei* ‘Emerald ‘n Gold’
- Helianthemum nummularium*
- Ilex crenata* ‘Helleri’
- Prunus laurocerasus* ‘Mt. Vernon’
- Rubus calycinoides*
- Vinca minor* ‘Bowles’ and ‘Merlot’

Table 1. Selection of groundcover plants represented in the evaluation, both “industry standard” landscape shrubs, and underutilized and collected shrubs.

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The groundcover trail plot at the North Willamette Research Extension Center. PHOTO COURTESY OREGON STATE UNIVERSITY

coldest temperatures each winter being in the low to mid 20s. These temperatures seemed to do little or no observable damage to the plants. The plants in the first trial from France were removed prior to the 15 F cold spell in January of 2024. Most of the plants in the second trial, including the *Phlomis*, had surprisingly minimal cold damage during this extended cold event, and did not exhibit observable dieback or discoloration in spring 2024.

Most of the casualties in these evaluations seemed to be due more to drought stress or poor adaptation to clay soil. Sunburn and drought stress were readily evident on *Trachelospermum* and *Vinca* selections, both of which are clearly better suited to shadier conditions, as well as *Ilex crenata* 'Helleri'. Some of the introductions from France seemed to resent the soil conditions in the evaluation, presumably prolonged winter wet soil, and died at random times as the evaluation progressed. This included *Hypericum tomentosum*, *Lavandula dentata* and *L. lanata*, as well as *Satureja thymbra*.

Plants that stood out in the trial due to attractive form and foliage, good cold and drought tolerance, reliable bloom and lack of pest or disease issues included: *Baccharis pilularis* 'Pistol Pancake',

Pseudodictamnus hirsutus (syn. *Ballota hirsuta*), *Cotoneaster glaucophyllus*, and *Phlomis x margaritae*. Additional plants that performed well included some low-growing manzanitas: *Arctostaphylos uva-ursi* 'Green Supreme' (a selection from Tilden Botanical Garden in California), and *Arctostaphylos nummularia* 'Select Form'. *Grevillea australis* was a strong performer in the *Grevillea* trial from 2011–2014 and in this evaluation, and *G. 'Poorinda Leane'* was a strong newcomer to our evaluations.

Promising plants

Some highlights of the best performing plants:

Baccharis pilularis (coyote brush) is a native to the Oregon Coast and ranges south to California. The cultivar 'Pistol Pancake' is an introduction from northern Curry County, Oregon by Cistus Nursery (Portland, Oregon) and grew to a size of 3 feet tall by 6.7 feet wide. This shrub blooms during fall from September through October. It is in the daisy family and has small inconspicuous disc-shaped flowers that are cream to yellow colored and pleasantly scented.

Pseudodictamnus hirsutus (hairy sage) is a native of the western Mediterranean.

This mint-family member is a sub-shrub which develops a rounded, spreading canopy of upright stems with woolly foliage, topped by whorls of small purple-white blooms. Bumblebees love this plant and were plentiful throughout the bloom period. This subshrub grew to 2.75 feet tall by 5.5 feet wide.

Cotoneaster glaucophyllus (greyleaf cotoneaster) is native to southern China and is distinctive due to the blue-grey colored foliage from white hairs present on the small leaves. In the spring, the plant blooms with white flowers, followed by red berries. In our trials the plants reached an average of 2.3 feet tall by 3.3 feet wide. Also included in this trial was *Cotoneaster Emerald Beauty*[™], a selection by Ryan Contreras at OSU. This selection performed well in the trial, flowering freely and featuring an attractive plant form.

Grevillea are native to Australia, and most species are not cold-hardy in landscapes in the Pacific Northwest. The two which stood out in our trials, experiencing little to no cold injury, were *Grevillea australis* (southern grevillea) and *Grevillea 'Poorinda Leane'*.

Grevillea australis has small green leaves which are needle-like. In late winter to early spring the plant erupts in white, fra-

grant blooms. The plant has a rounded, tidy habit and is 3.3 feet tall by 6.3 feet wide.

'Poorinda Leane' is a cross between *G. juniperina* and *G. victoriae* made by the renowned self-taught hybridist Leo Hodge of East Gippland, Australia. This shrub has small, narrow leaves with large, spidery orange blooms over a long period from April through August. Hummingbirds as well as honeybees and bumblebees love this plant! This shrub is sizeable at 4.3 feet tall and 9 feet wide.

Manzanita selections planted in this trial were native groundcovers from multiple species. Two which stood out were *Arctostaphylos uva-ursi* 'Green Supreme' and *Arctostaphylos nummularia* 'Select Form'. 'Green Supreme' is a good alternative to the landscape staple 'Massachusetts' which does not perform well without summer irrigation. Like 'Massachusetts', this shrub forms a dense, ground-covering mat, but is considerably more vigorous, reaching 10 inches tall by 6 feet wide. 'Select Form' is somewhat taller, producing a dense mound of rounded, glossy leaves about 18 inches tall and 4 feet across. The new growth has hints of red, and it has white flowers in spring which attract bees.

The *Phlomis* in our trial included 19 accessions, which overall have performed well, even through 15 F. One standout is *Phlomis x margaritae*, a hybrid between *P. composita* and *P. purpurea* from southern Spain. The selection in the evaluation is about 4 feet tall and wide and features silver-white foliage setting off the pale yellow flowers, which are borne in whorls on upright stems in May–June. The combination is striking and unusual for the genus. ☺

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