USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Plant Guide

GOOSEBERRYLEAF GLOBEMALLOW

Sphaeralcea grossulariifolia (Hook. & Arn.) Rydb.

Plant Symbol = SPGR2

Contributed by: NRCS Plant Materials Center, Aberdeen, ID

Gooseberryleaf globemallow. Photo by Clint Shock. Malheur Experiment Station, Oregon State University.

Alternate Names
Currant-leaf globemallow

Uses
Forage: Globemallow species are grazed opportunistically by pronghorn antelope, deer, elk, and bighorn sheep (Beale and Smith, 1970; Rumbaugh and others, 1993). The leaves, fruits and seeds are eaten by rodents, rabbits and birds (Pendery and Rumbaugh, 1986). Palatability of globemallow species has been rated desirable to preferred in spring and summer for sheep and antelope and desirable in spring, summer and fall for cattle, horses, deer and elk (Ogle and Brazee, 2009). Globemallow is preferred over grass but not alfalfa during the spring, but is less desirable than grass and alfalfa during the fall (Rumbaugh and others 1993).

Pollinator habitat: Globemallow species flower in the spring and are known to attract numerous species of native bees including *Diadasia*, *Agapostemon*, *Halictus*, *Melissodes* and *Calliopsis* (Pendery and Rumbaugh, 1986). Some bee species are specialists which only forage pollen and nectar from *Sphaeralcea* and related taxa of the mallow family (Tepedino, 2011).

Range revegetation: Gooseberryleaf globemallow is well adapted to arid to semi-arid environments in the western United States. It establishes from seed and also by transplanting and has been shown to be competitive against cheatgrass and other winter annuals (Stevens and Monsen, 2004).

Ethnobotanical: Hopi Indians used boiled or chewed roots for bowel problems and for broken bones (Colton, 1974).

Status
Consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Description
General: Mallow family (Malvaceae). Gooseberryleaf globemallow is a native perennial forb to subshrub with few to many stems arising from a deep, branched woody caudex. Mature plants range from 35 to 75 cm (14 to 30 in) in height. This species is morphologically diverse. Stems and leaves can be white to gray with dense stellate hairs, or green and sparsely hairy. The leaves are typically 3 to 5 lobed with the lobes distinct to the base, the blades 1.2 to 5 cm (0.5 to 2.0 in) long. Flowers are orange or rarely rose pink with 5 petals ranging from 8 to 18 mm (0.3 to 0.7 in) in length. The fruit is a schizocarp with 8 to 20 carpels (Welsh and others, 2003).

Distribution: Gooseberryleaf globemallow is native to western North America from Idaho south to New Mexico and west to arid regions of Washington, Oregon and California. For current distribution, consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Gooseberryleaf globemallow occurs in cool and warm desert shrub communities in western North America. It is commonly found in salt desert shrub

shadscale and saltbush plant communities. It is also found in the drier portions of sagebrush and pinyon-juniper plant communities (Holmgren and others, 2005; Welsh and others, 2003).

Adaptation
Plants can be found in open deserts, playas, hillsides and canyons from 800 to 2,300 m (2,600 to 7,500 ft) elevation in areas receiving 15 to 30 cm (6 to 12 inches) of annual precipitation. Gooseberryleaf globemallow is often found as an early to late seral species in open or disturbed sites. The species is adapted to clay to gravel soils, and is moderately alkali (saline to sodic) tolerant (Pendery and Rumbaugh, 1986).

Establishment
Gooseberryleaf globemallow should be planted with a drill or broadcast into a weed-free seed bed at a rate of 2.2 kg pure live seed (PLS) per ha (2 lbs PLS per acre) and at a depth of 3 to 6 mm (0.12 to 0.25 in) (Ogle and others 2011; Rawlins and others 2007). When planted in a mix, the seeding rate should be adjusted according to the proportion of this species in the mix. The seed has an impermeable seed coat and should be scarified using boiling water or other treatment prior to planting if a high initial germination rate is desired.

Management
Gooseberryleaf globemallow should be used as a minor component of restoration seed mixtures. Management strategies should be based on the key species in the established plant community. Grazing should be deferred on seeded lands for at least two growing seasons to allow for full stand establishment.

Pests and Potential Problems
Rust (*Puccinia sherardiana*) and powdery mildew (*Leveillula taurica*) have been observed on gooseberryleaf globemallow (Briere and Franc, 1998; Sampangi and others., 2010).

Environmental Concerns
There are no known environmental concerns associated with this species.

Seed and Plant Production
Harvested seed can be cleaned by processing with a brush machine or hammer mill and air screening equipment. There are approximately 1,100,000 seeds per kilogram (500,000 seeds per pound) (USDA NRCS, 2011).

Gooseberryleaf globemallow, like other members of the *Sphaeralcea* genus, has an impermeable seed coat which functions as a physical dormancy mechanism and prevents water uptake (Kildisheva, 2011). Little improvement in germination has been obtained with cold-moist stratification alone. Smith and Kratsch (2009) report significant germination improvements for globemallow seed following a combination of scarification (nicking the seed coat) and a 6 week cold stratification. Smith and Kratsch (2009) suggest that *Sphaeralcea* may exhibit a double dormancy with physical and physiological mechanisms.

Germination of Munro's globemallow (*S. munroana*), thought by some to be the same species or a sub-species of gooseberryleaf globemallow, was significantly improved with scarification (87 %), a combined scarification and 24 hr soak in distilled water (93 %), and scarification plus a 24 hr soak in 100 ppm gibberellic acid (GA_3) (88%) compared to a non-treated control and treatments of soaking in GA_3 without scarification (<20 %) (Kildisheva, 2011).

Mechanical scarification treatments can damage globemallow embryos. Page and others (1966) and Roth and others (1987) suggest Munro's globemallow seeds lost viability during mechanical scarification in a sandpaper-lined rotating drum, regardless of treatment duration.

Chemical scarification treatments have been shown to be effective for some globemallow species (Page and others., 1966; Sabo and others., 1979; Roth and others., 1987; Smith and Kratsch, 2009). Submergence in 18 M sulfuric acid (H2SO4) for 10 min significantly increased germination of two accessions of gooseberryleaf globemallow (69 % and 62 %) compared to 14 and 32% for the control. Jones and Whittaker (2011) found immersing globemallow seed in boiling water improved germination, and stratification did not provide a further increase in germination. Kildisheva (2011) compared the effects of a10 second submergence in boiling water, tumbling with aluminum oxide, burning, heat application at 80° C for 1 hr, and the combination of burning and heating. Seeds subject to the boiling water treatment reached the highest cumulative germination (49%); while germination of seeds subject to the other treatments did not exceed 20%.

Globemallow fruit ripen indeterminately. Pendery and Rumbaugh (1993) recommend harvesting seed when the lowest globes start to split and the majority of fruit is just ready to open.

Cultivars, Improved, and Selected Materials (and area of origin)
Common wildland collected seed is available through commercial sources. There are currently no commercial releases of gooseberryleaf globemallow.

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Citation

Tilley, D., St. John, L., Ogle, D., and N. Shaw. 2011. Plant guide for Gooseberryleaf globemallow (*Sphaeralcea grossulariifolia*). USDA Natural Resources Conservation Service. Aberdeen, ID.

Published January 2012

Edited: 21Dec2011djt; 8Nov2011dgo; 8Nov2011ls; 21Dec2011ns; 22Dec2011jab

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