

# 'Maleza'

## Mountain whitethorn

*Ceanothus cordulatus* Kellogg



*Maleza' mountain whitethorn plant. One year after transplanting at the Lockeford Plant Materials Center. ©Lockeford Plant Materials Center.*

'Maleza' Mountain whitethorn (*Ceanothus cordulatus* Kellogg) is a cultivar released in 1989 in cooperation with the California Agricultural Experiment Station.

### Description

'Maleza' mountain whitethorn is a native, much branched, semi-erect spinescent, evergreen shrub, 2 -5 feet high and may spread to 10 feet in diameter. Alternate leaves are gray-green ½ to 1 inch long by ¼ - ½ inch wide. Leaf shape is ovate to elliptic smooth above and grey on the undersurface. Flowers are white and carried in short dense clusters. The bloom period is May to July. Fruits are triangular capsules yielding olive-brown, round ovoid seeds.

### Source

'Maleza' mountain whitethorn seed was collected in 1972, from a native stand at South Lake Tahoe, El Dorado County, California. Original seed increases were accomplished at the Lockeford Plant Materials Center. Seedlings grown at the Lockeford PMC were tested at over 125 sites throughout the Tahoe Basin on various soils and exposures from 1971 to 1976. The conservation plantings were evaluated in 1988 and the plant survival ranged from 30% to 100%. 'Maleza' performed well in comparison with rubber rabbitbrush (*Ericameria nauseosa*), big sagebrush (*Artemisia tridentata*), 'Lassen' bitterbrush (*Purshia tridentata*), and snowbrush (*Ceanothus velutinus*) on dry critically eroding sites.

### Conservation Uses

'Maleza' mountain whitethorn was developed for use in critical area stabilization on dry, rocky slopes and droughty, well-drained soils in the Sierra Nevada Mountains.

**Soil stabilization:** Mountain whitethorn is an early successional species following fire, or other soil disturbance, producing excellent cover with a low horizontal branching habit. The plant has a symbiotic association with nitrogen-fixing bacteria making it one of the fastest growing shrubs on harsh sites once established. Mountain whitethorn has high nitrogen concentrations in its foliage and beneath the plant such that its presence may enhance nitrogen availability in the surrounding area. Since mountain whitethorn is one of the first plants to become established on denuded soils, it has immediate value for erosion prevention and may serve as a nurse plant for coniferous species at high elevations. If conifers become established, they grow through and over the mountain whitethorn and will shade them out. The brush field can significantly hinder conifer regeneration and slow the rate of forest succession. If there is repeated fire, mountain whitethorn brush fields can become semi-permanent communities.

**Forage:** 'Maleza' is considered as poor to fair browse species for livestock, such as domestic sheep and goats.

**Wildlife:** 'Maleza' is an important browse species for deer because of its high crude protein content and palatability. It does not provide sufficient nutrients for optimum growth and development in mule deer and is more valuable when consumed with other plant species. The plant also provides cover for wildlife as upland game habitat. During bloom floral resources are available for pollinators.

### Area of Adaptation and Use

'Maleza' mountain whitethorn is adapted to coarse textured well drained soils, where mean annual precipitation is 16 inches or higher. 'Maleza' originated in the Tahoe Basin but grows well in the Sierra Nevada Mountains at elevations down to 3,500 feet, as long as precipitation is adequate.

Mountain whitethorn is adapted to MLRAs 15, 20 and 22, Mountains of the Central Coast, Southern California and Sierra Nevada between elevations of 2,100 and 11,000 feet in elevation. It grows best in open situations, dry open flats, rocky ridges and washes that have well drained soils. It can also survive and thrive in pine forests, and coniferous timber in partial shade.

## **Establishment and Management for Conservation Plantings**

'Maleza' mountain whitethorn seed has a hard exterior coat. Germination is promoted by a combination of soaking in hot water and a seed stratification treatment. Initially seed is placed in water preheated to 180 degrees then allowed to cool and soak for 24 hours. Then the seed is mixed with moist sand or moist vermiculite (preferred), placed into containers or Ziploc storage bags and stored in the refrigerator. The bags are checked periodically for moisture and seed swelling, which indicated that they are close to germinating. Once the seeds have swollen, plant in propagation flats filled with potting soil and cover with ½ potting soil. When the seedlings have grown a third pair of leaves, they can be transplanted into individual nursery containers. The young plants will be ready for their permanent location in ½ to 2 years.

To transplant: dig a hole two to three times the diameter of the root ball and at least six inches deeper and backfill the hole with six inches of native soil. Make a few 1/8 inch deep vertical cuts in the root ball, or carefully "tease" roots away from the root ball to encourage roots to grow into the new soil. Set the plant into the hole with 8 feet spacing between each plant and fill in around roots, firm the soil until the hole is half full. Fill the hole with water and allow to drain to settle the silt and eliminate air pockets around the roots. Backfill with enough planting mix so the plant will set at the same level it was growing in the container. Water to allow soil to settle and add more soil if necessary. Build a berm of soil to form a watering basin around the outer edge of the hole. Break the basin down after two or three years. New plants should be watered occasionally until they are well established. Deep watering every 1½ to 2 months over the summer may be required for the first two years. Initial plantings should be protected from grazing or browsing by wildlife until well established.

## **Ecological Considerations**

'Maleza' mountain whitethorn is generally free from insect pests and disease, but is susceptible to crown and root rot problems related to agricultural soils and wet, poorly drained sites. This native plant will compete with invasive weeds once it is established.

## **Seed and Plant Production**

'Maleza' mountain whitethorn plantings produced seed after the plants were four-years-old. Mountain whitethorn reaches a maximum seed load of 4,500 seeds per plant by the age of twenty or twenty five. Seed production remains high until the plant is around 40 years old, then production declines.

## **Availability**

*For conservation use:* Limited amounts of seed may be available from specialized seed producers.

*For seed or plant increase:* Plantings of 'Maleza' are maintained by the USDA-NRCS Lockeford Plant Materials Center in Lockeford, CA. Cuttings in limited amounts can be provided upon request.

*For more information, contact:*  
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## **Citation**

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For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov/>>

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