



United States Department of Agriculture  
Natural Resources Conservation Service  
Plant Materials Program

# Blythe Germplasm desert saltbush

*Atriplex polycarpa*

A Conservation Plant Release by USDA NRCS Tucson Plant Materials Center, Tucson, Arizona



Figure 1: Blythe Germplasm desert saltbush is a selected class release of desert saltbush (*Atriplex polycarpa*) released in 2002.

## Description

Desert saltbush is a perennial intricately branched shrub 3 to 6 feet tall. The branches are gray to yellowish-brown with bark that sheds in long strips. Desert saltbush has inconspicuous flowers from May to August that produce seed that is pale brown and 0.04 to 0.05 inches long in October to December.

Desert saltbush is found on alkaline plains and occasionally rocky or gravelly slopes in grasslands or desert at elevations of 400 to 3000 feet. It is found in the deserts of California, southern Nevada, and southwestern Utah and Arizona. Desert saltbush is successful on saline soils unsuitable for most other species and is usually absent from less saline soils due to competition from more aggressive species. It is less cold tolerant and more drought hardy than fourwing saltbush (*Atriplex canescens*).

## Source

Blythe Germplasm originates from a collection of seed taken from a stand of desert saltbush located 10 miles north of Blythe, California along Highway 95, at an elevation of 870 feet. The collection was evaluated for seed production, vigor and cover against other collections of desert saltbush in two initial evaluation plantings at the Tucson Plant Materials Center. In both initial evaluation plantings, Blythe Germplasm consistently rated higher than the other collections in all categories evaluated.

## Conservation Uses

Blythe Germplasm desert saltbush is used as an erosion control plant on shrub dominated rangeland and critical

areas such as abandoned/retired cropland and road cuts. Desert saltbush may also provide cover for wildlife such as Gambel's quail and dove, as well as high value browse for wildlife such as mule deer and rabbits.

Desert saltbush is often found in association with highly unpalatable species and may be the only shrub in areas that are too arid or saline for other species to grow. Its greatest value as a browse is in the fall, when grassland species provide minimal nutritional contributions. Its nutritional value in crude protein, total digestible nutrients and fats is comparable to that of alfalfa. Late in the year it is a good source of calcium, phosphorous, and carotenoids. Under cultivation, desert saltbush has provided total biomass yields of 11,500 lbs/acre.

## Area of Adaptation and Use

The identified range of adaptation of Blythe Germplasm is Major Land Resource Areas 30, 31 and 40, which includes parts of the Mojave and Sonoran Deserts at elevations between 300-3000 feet. Blythe Germplasm grows on a range of soils including sandy loam, loam and clay loam, as well as moderately saline soils.

## Establishment and Management for Conservation Plantings

Desert saltbush can be direct seeded or transplanted from container stock. When seeding, desert saltbush establishes easily if there is adequate moisture present in the soil. Although extremely tolerant of salt in the environment, its germination is reduced with higher salt concentrations. Desert saltbush has approximately 490,000 seeds per pound.

Seed may be drilled, broadcast or hydroseeded into a firm, weed free soil at a depth of a ¼ to ½ inch. Heavier textured soils may require a shallower planting depth. When broadcasting seed, dragging or harrowing helps to obtain the appropriate soil cover. Desert saltbush is usually planted as 5-10% of a seed mix. Young plants should be protected from livestock until they are well established.

Transplants appear to be more successful than spot seeding under western Mojave Desert conditions. Leaching seed with water before planting into a well-drained shallow soil mix has been shown to increase germination. Additionally, covering the seed with as little soil as possible can improve emergence. Seedlings are subject to damping off and should be monitored closely.

A satisfactory management system would allow only limited use during the summer and fall months.

### **Ecological Considerations**

Blythe Germplasm desert saltbush does not differ significantly in rate or spread, seed production and vigor from naturally occurring desert saltbush. Desert saltbush is a native shrub and may spread into adjoining areas via seed distribution. However, spread is not alarming even under optimal conditions. No poisonous properties have been noted in the literature reviewed.

### **Seed and Plant Production**

Seed production fields can be successfully established from container stock. Seedlings can be germinated in a well-drained soil mix and outplanted to fields when sufficient growth is achieved (4-6" tall). Fields may be pre-irrigated and pre-treated for weed control before establishment. Fields rows should be planted approximately ten feet apart. To prevent crowding at full maturity, within row spacing should be approximately five feet. Desert saltbush is dioecious, a production field consisting of one male to every five female plants, to insure adequate pollen dispersal was established in Tucson and has provided yields of 75-80 pounds bulk seed per acre.

Irrigation is recommended for plant establishment but is generally unnecessary after establishment except in times of extreme drought. Rabbit damage on young plants may be severe if plants are not protected. Seed harvests can be expected one year after establishment and are generally done by hand stripping mature seed.

### **Availability**

*For conservation use:* Desert saltbush has limited commercial availability but may be available from specialized seed producers/collectors on request.

*For seed or plant increase:* Seed production of Blythe Germplasm desert saltbush will be maintained by the USDA NRCS Tucson Plant Materials Center. Limited quantities of seed are available to seed producers for increase and to other interested parties, as available.

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

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Figure 2: Leaves and seed of desert saltbush

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