

## POWDERPUFF

*Mimosa strigillosa*

Torr. and A. Gray

Plant Symbol = MIST2

Contributed by: USDA NRCS East Texas Plant Materials Center



*Powderpuff foliage and blooms.*  
Photo courtesy: USDA/NRCS East Texas Plant Materials Center

### Alternate Names

Powderpuff, herbaceous mimosa or sunshine mimosa

### Uses

**Livestock:** Cattle will graze the leaves (Everitt and Lonard, 1999).

**Wildlife:** Caterpillars of the little sulphur butterfly (*Pyrisitia lisa*) and white tailed deer feed on the foliage (Norcini and Aldrich, 2007) and (Everitt and Lonard, 1999). Honeybees also utilize powderpuff for pollen (Lieux, 1978). Staff at the East Texas Plant Materials Center has noticed large amounts of insects in production fields of herbaceous mimosa during the spring and summer. This combined with its low growth form create excellent potential as a bugging area for wild turkeys and poults. Seed may also be utilized by both game and non-game birds.

**Reclamation/Revegetation:** As powderpuff stems spread, they form an overlapping vegetative mat. The plant, once established, exhibits a low amount of evapotranspiration (Chang, 1997) and ability to recover from drought stress (Chang, 1995). These two characteristics along with its growth pattern

suggest powderpuff is a potential species for reclamation and revegetation projects (Chang, 1995).

**Landscape:** Besides being drought tolerant, powderpuff is able to withstand moderate foot traffic. Other attributes of this plant include low growing height and attractive pink blooms during late spring and summer.

### Status

Please 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:** Powderpuff is a native, warm season perennial, legume which grows to approximately eight inches in height. Powderpuff lacks the small thorns along its stems found on other mimosa species (Ajilvsgi, 2003). Powderpuff reproduces by seed and stolons which root to the ground along their length as they spread from the mother plant (Norcini and Aldrich, 2009). The leaves are alternately arranged along the stem and are bipinnate. The leaflets are sensitive to contact, folding up quickly after being disturbed (Ajilvsgi, 2003). The plant produces a showy pink bloom about one inch long during the spring and summer. The flowers develop into small, flattened, oblong seed pods which turn brown when mature.

**Distribution:** Powderpuff is found in the southeastern United States. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

**Habitat:** Powderpuff is adapted to a wide range of soils and soil textures, but favors sandy loams. Suitable habitat includes prairies, grasslands, meadows, forest openings (Ajilvsgi, 2003), and roadsides (Norcini and Aldrich, 2009).

### Adaptation

Powderpuff is adapted to well-drained sandy soils with a pH greater than 4.1. It grows best in full sun, but will tolerate some shade.

### Establishment

A soil analysis should be conducted prior to planting to determine if soil amendments of phosphorus and potassium are needed and that soil pH is 4.2 or greater. Avoid fertilization with nitrogen as it will promote weed competition, especially from warm

season, annual grasses. Powderpuff, if inoculated, will fix its own nitrogen, and requires no additional nitrogen inputs.

The optimum soil pH range for herbaceous mimosa is 6.2 to 7.1. The plant will grow on soils with a pH of 4.7. However, acidic soils with a pH of 4.1 or less are not suitable for the plant (Nuruddin and Chang, 1999).

Seedbed preparation should begin in advance of planting to help reduce weed competition. Planting can be completed in spring or early fall. Prepare a clean, weed free seedbed using tillage or herbicide application. Soil amendments may be added at this time to help incorporate them in the soil. Prior to planting, the soil should be firm, not fluffy or powdery.

Scarify and inoculate seed with strophostyles spec.1 before planting. Scarifying (nicking or roughing the seed coat) seed greatly improves germination, and establishment time after planting. Walker (2005) found that mechanically scarified seed ranged in germination from 74 to 85 percent. Pitman (2009) used sandpaper to scarify powderpuff seed and had similar results. The average percent germination of unscarified seed was 14 while the scarified was 96. In both experiments, physically roughing the seed coat resulted in better seed germination than unscarified, chemical or heat treatments. If scarified seed is unavailable, plant in the fall, and allow seed to over winter in the soil.

For best results, use a drill type planter to ensure good seed to soil contact and to control planting depth. Broadcast seeding may be used, however additional cultipacking or light dragging should be done to cover the seed. Seed should be planted approximately ¼" deep. Crockett germplasm herbaceous mimosa contains approximately 30,000 seeds per bulk pound. A seeding rate of seven pounds of pure live seed (PLS) per acre is recommended. For seed mixtures, reduce the seeding rate according to the percent desired within the mix.

### **Management**

Powderpuff is not an overly aggressive plant and other plants will eventually come into the stand. Unwanted plants can be controlled by mowing or use of an herbicide wick. Glyphosate can be applied to treat cool season weeds after powderpuff goes dormant in the fall; however, care should be taken as powderpuff may not become dormant in the most southern portions of its range.

### **Pests and Potential Problems**

The caterpillar of the little sulphur butterfly (*Pyristia lisa*) feeds on powderpuff foliage. Due to the low growth form of this species, fire ant mounds are a problem for commercial harvest and result in large quantities of ants in the seed hopper of the combine. To avoid this problem, the East Texas Plant Material Center treats production fields to control fire ants and damage to the combine header from hitting mounds.

### **Seed and Plant Production**

Seed production fields should be drilled for establishment. However, trying to keep the plants in rows is impractical due to its spreading growth habit. Eventually the plants create a uniform ground cover which helps control weeds and soil moisture loss. To reduce weed competition, fields should not be fertilized during their first year. Established fields may be fertilized with phosphorus and potassium as needed. Always use soil tests to determine the optimum rates.

The East Texas Plant Material Center has used ammonium salts of imazapic to control weeds. It should be noted that high application rates of this herbicide can delay seed production and create significant crop damage. Application rates as high as 6 oz/acre have been used, but effects on the crop were noted the following growing season. Application rates of 2 oz/acre seemed to give adequate control of most weeds with the least amount of damage to the crop. Weeds may also be controlled via mowing or the use of herbicide wicks. Mowing while in bloom may result in the loss of the first seed set. Crockett germplasm herbaceous mimosa is quick to produce a secondary crop of seed after being mowed in mid summer. The East Texas Plant Materials Center purposely mows the first crop down and focuses on the second seed set. The second seed set produces less vegetative growth, and greatly reduces the amount of vegetative material in the harvest. Large amounts of green material in the combine hopper can create a heat and damage the seed quickly in the summer. It is also has a tendency to pack the auger tubes in the combine and is very difficult to clear.

When combine harvesting seed, set the concave distance to approximately ¼ inch at its narrowest point, and use a moderately low fan speed. Due to the height of the combine header, a slow pace must be used to avoid scraping the ground. Once harvested, scalp as much green material as possible from the seed, and spread seed out on a barn floor, or place in a forced air dryer. Seed remaining in seed pods can be separated using a hammer mill once they dry. Seed can be further cleaned using air screen seed cleaners.

Seedlot purity of Crockett herbaceous mimosa harvested at the East Texas Plant Materials Center has ranged from 96-99% and the average germination percent of scarified seed is 70%. There may be a decline in seed germination of seedlots that are five years or older.



Above is a photo of powderpuff beginning regrowth after winter dormancy. Notice the runners which have formed a mat on the ground. Photo courtesy: USDA/NRCS East Texas Plant Materials Center

#### **Cultivars, Improved, and Selected Materials (and area of origin)**

Crockett germplasm herbaceous mimosa was released in 2006 by the USDA/NRCS East Texas Plant Materials Center. Crockett germplasm herbaceous mimosa was collected from Houston County, Texas.

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**Prepared By:** *Melinda Brakie, Soil Conservationist  
USDA-NRCS East Texas Plant Materials Center,  
Nacogdoches, Texas*

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