

Asteraceae

Species: *Rudbeckia hirta* L.

Common Name: Blackeyed susan

Species Code: RUHI2

Ecotype:

Outplanting Site: Natchez Trace Parkway 3X section and others.

Outplanting Date: 3X section planted in 1994, other sections of the Natchez Trace Parkway were planted in 1996.

#### TARGET SEEDLING INFORMATION

Stock Type:

Height:

Caliper:

Root System:

#### SEED PROPAGATION

Propagation Environment: Field

Seed Propagation Method: Direct sown.

Source of Seeds: Near mile marker 118 and 123 on the Natchez Trace Parkway.

Collector/Date: PMC personnel/July 1992

Seeds/Kg: 3,750,000

% Germination: 1992 – 87, 1993 – 90, 1994 – 22

% Purity: 1992 – 57, 1993 – 89, 1994 – 82

Seed Processing: Direct combined and cleaned using an air screen cleaner.

Seed Storage: Normal cool, dry storage. PMC cooler is maintained at 12.7 °C (55 °F) and 45% relative humidity.

Seed Dormancy: Seeds have no prolonged dormancy (Phillips, 1985).

Seed Treatments: None required. Seeds germinated in both light and darkness (Andersen, 1968)

Container Type and Volume: Seedlings can be grown in the greenhouse, however, this was not normal practice at the PMC. Small seedlings do not transplant well, so direct sowing in cell packs or possibly larger pots is recommended.

Growing Media: Normal greenhouse growing media can be used, however, the mix must be well drained. Seedlings are very susceptible to damping off or physical rot if overwatered (Phillips, 1985).

Total Time To Harvest: In ideal situations, seeds germinate in the fall and harvest will be approximately 11 months after planting. However, if for some reason seeds do not germinate until the following spring, the phenology of the plants will not be normal. The plants will flower later and will not produce a flush of flowers, so seed harvesting capabilities are limited. When this happens, seeds are left to mature on the plants and the field is mowed to improve stands. Seeds are then harvested in subsequent years.

Sowing Date: August to October

% Emergence and Date: Seeds normally germinate in September or October (see Total Time To Harvest above).

Sowing/Planting Technique: Fields were either closely mowed or burned, disked and cultipacked prior to planting. Observations of seed germination in a burned field that was not disked prior to planting showed that germination was delayed compared to a field planted at the same time that was disked. Apparently the ash residue on the surface of the soil inhibited germination. Seeds did not germinate well in a fluffy, clean tilled field. Direct sowing was done with a no-till drill using the legume box. Rice hulls were tested for use as a filler, however, the rice hull mixture did not meter through the seed box openings. The meter openings on the box were set between 3 to 5 mm (1/8 and 3/16 inch). Seed was drilled 6 mm (1/4 inch) deep with the furrows left open. Two broadcast seeding methods were also used. Blackeyed susan seeds were mixed with sand as a filler and broadcast with a field fertilizer spreader. Subsequent plantings at the PMC were done using a smaller fertilizer spreader on an all-terrain vehicle and the sand filler was not required. Planting rates used in production fields were 3.35 to 4.48 kilograms PLS per hectare (3 to 4 pounds per acre).

Establishment Phase: Seeds germinate in the fall and plants overwinter as a rosette.

Rapid Growth Phase: Plants begin growth in late February to March. Flowering shoots begin to rapidly elongate in April to May.

Hardening Phase:

Harvest Date: Mid-July

Storage Conditions:

Storage Duration: Seeds would be classified as having medium longevity (Hartmann and Kester, 1975). Seeds were stored for 3 to 5 years before planting on the Natchez Trace Parkway.

### VEGETATIVE PROPAGATION

Vegetative Propagation Method:

Propagator:

Comments: Yields of 84 to 112 kg per hectare (75 to 100 lbs per acre) can be expected from good stands. During NPS production the major forms of weed control used were properly timed mowing and applications of Poast (sethoxydim) to control grassy weeds. Cultivation was unsatisfactory because plants did not tolerate soil deposition around the plant crown. Since that time, a new herbicide Plateau (imazapic) has increased weed control options for this species.

Distribution: *Rudbeckia hirta* has a fairly wide distribution from Nova Scotia to Florida, west to Manitoba, Colorado and Texas and is commonly found throughout the state of Mississippi. This species prefers a well-drained soil.

References:

Andersen, R. N. 1968. Germination and establishment of weeds for experimental purposes. Weed Science Society of America, W. F. Humphrey Press, Inc., Geneva, NY. 236 p.

Hartmann, H.T. and Kester, D.E. 1975. Plant propagation principles and practices. Prentice-Hall, Inc., Engelwood Cliffs, NJ. 662 p.

Phillips, H.R. 1985. Growing and propagating wildflowers. Univ. of North Carolina Press, Chapel Hill, NC. 330 p.