

## PANICLEDLEAF TICKTREFOIL

*Desmodium paniculatum* (L.) DC.

Plant Symbol = DEPA6

Contributed by: USDA, NRCS, Rose Lake Plant Materials Center and Norman Berg National Plant Materials Center.



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### Alternate Names

Panicled ticktrefoil

### Uses

Panicledleaf ticktrefoil attracts birds and is a grazing and browsing plant for livestock and mammalian wildlife (USDA, 2013). Panicleleaf ticktrefoil enriches the soil through nitrogen fixation (Shockley et al., 2011). Long-tongued bumblebees (*Bombus impatiens* and *Bombus pensylvanica*) collect pollen from the flowers. Other long-tongued bee pollinators include leaf-cutting bees (*Megachile brevis brevis*, *Megachile mendica*, and *Megachile petulans*), and digger bees (*Melissodes bimaculata bimaculata*). Short-tongued bee pollinators include: sweat bees (*Nomia nortoni nortoni*) and Campus bees (*Calliopsis andreniformis*) (Hilty, 2013a). The caterpillars of several skippers feed on the leaves: Hoary Edge (*Achalarus lyciades*), Silver-Spotted Skipper (*Epargyreus clarus*), Southern Cloudywing (*Thorybes bathyllus*), and Northern Cloudywing (*Thorybes pylades*). The caterpillars of the butterfly Eastern Tailed Blue (*Everes comyntas*) also feed on the foliage, while the caterpillars of the butterfly Gray Hairstreak (*Strymon melinus*) eat the flowers and developing seedpods. Other insect feeders include many kinds of beetles, and some

species of thrips, aphids, moth caterpillars, and stinkbugs. The seeds are eaten by some upland game birds (Bobwhite Quail, Wild Turkey) and small rodents (White-Footed Mouse, Deer Mouse), while the foliage is readily eaten by White-Tailed Deer and other hoofed mammalian herbivores. The Cottontail Rabbit also consumes the foliage (Hilty, 2013b).

### Panicledleaf ticktrefoil 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

Panicledleaf ticktrefoil is a native, perennial, wildflower that grows up to 4 feet tall (USDA, 2013). The genus *Desmodium*: originates from Greek meaning "long branch or chain," probably from the shape and attachment of the seedpods. The taxonomy of this species is quite variable with several varieties based on leaflet size and shape (Voss, 1985). The stems are light green and usually hairless. Alternate compound leaves occur at intervals along the stems; they are trifoliate and their leaflets are extended horizontally in relation to the ground. Individual leaflets are up to 3½ inches long and ¾ inch wide. The petioles of the compound leaves are up to 2 inches long. The upper stems terminate in either racemes or narrow panicles of flowers. Individual flowers are ¼ inch long and have a typical pea-like structure. The petals are pink to purple. The blooming period occurs from mid-summer to early fall and lasts about 1 – 1½ months. Seeds form in seed pods (flat loments) that are about ½ - 1½ inches long. Each seed pod consists of 2 – 6 rounded segments with a single seed in each segment. This wildflower is a pioneer species that prefers some disturbance from wildfires, selective logging, and others causes (Hilty, 2013b). The sticky seedpods cling to the fur of animals and the clothing of humans and are carried to new locations (USDA, 1961).

### Ethnobotany

The Houma Indians of Louisiana used an infusion of the roots in whiskey to treat weakness and cramps (Moerman, 1988; Speck, 1941).

### Distribution:

Its range is from New England to Minnesota and from Florida to Texas. It is common throughout the Midwest States (USDA, 2013).

For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

### **Adaptation**

This ticktrefoil prefers partial sun and dry to slightly dry conditions. It usually grows in soil that contains loam, clay-loam, or some kinds of rocky material. Its habitats include savannas, rocky upland forest, edges of wooded areas, thickets, and limestone glades (Hilty, 2013b).

### **Establishment**

A clean, firm seedbed is essential for establishing panicledleaf ticktrefoil. A good seedbed can be prepared by disking and harrowing, following by cultipacking. Planting into no-till conditions can be effective provided weeds are controlled and residue is managed prior to planting. Good seed-to-soil contact is important for germination and establishment (USDA, 2008). Seed is variable in size and large seeds have a higher germination percentage than do small seeds (Wulff, 1986).

The seedbed should be firm enough to allow the seed to be planted 1/8 to 1/4 inch deep (USDA, 2008). Cultipacker seeders and band seeders followed by press wheels or a cultipacker help ensure shallow seed placement and good seed-to-soil contact. Apply phosphorus and potassium fertilizer only as recommended by a soil test (USDA, 2008). Nitrogen fertilizer is not recommended since panicledleaf ticktrefoil fixes nitrogen from the atmosphere.

Inoculating seeds with *Rhizobium* before planting is recommended (Shockley et al., 2011). Consult inoculant supplier for recommendations on specific *Rhizobium* strains for panicledleaf ticktrefoil.

Seeding of panicledleaf ticktrefoil should be as part of a wildflower, legume, and grass mix developed to meet the objective of the planting. Seed can be planted in the spring or early fall. Early Fall seeding may be preferable for longer establishment period prior to potentially hot and dry summer conditions. If fall planting is not possible due to weather, store seed dry at 34 – 36° F and plant in the spring.

### **Management**

Reduce weed competition by mowing at a height that will not affect the ticktrefoil seedlings. For grassy weed control use a grass herbicide and follow label recommendation, as weed control will encourage a good stand. Note: Some herbicide products may not be registered on this legume species in your state.

### **Pests and Potential Problems**

Japanese beetle adults feed on flowers and leaves. White mold has been observed on some *Desmodium* species (Observations at the Rose Lake Plant Materials Center, East Lansing, Michigan).

### **Environmental Concerns**

No concerns at this time.

### **Control**

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method.

### **Seeds and Plant Production**

Panicledleaf ticktrefoil produces seed annually. Protection from deer browse may be needed to ensure seed production. Seed pods stay attached to the stem late into the fall, so shattering loss not a big concern. Harvest seeds by hand or with a combine harvester when seed pods and stems are brown and dry. A plant desiccant may be used to aid plant dry down. Seed may or may not separate from the seed pod during harvest. Seeds can be separated from the pod using a brush separator, hammer mill, or similar equipment. Seed can be further cleaned using a fanning mill (Observations at the Rose Lake Plant Materials Center, East Lansing, MI).

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

Grant Germplasm panicledleaf ticktrefoil is a tested class release from the Rose Lake Plant Materials Center in East Lansing, Michigan. It was collected from native stands in Grant County, Wisconsin and released in 2006.

### **References**

- Hilty, J. Editor. 2013a. Insect Visitors of Illinois Wildflowers. World Wide Web electronic publication. Illinoiswildflowers.info, version (01/2013) Verified 2/13/2013.
- Hilty, J. Editor. 2013b. Panicled Tick Trefoil (*Desmodium paniculatum*). World Wide Web electronic publication. Illinois wildflowers.info/savanna/plants/pn\_tktrefoil.htm. Verified 2/13/2013.
- Moerman, D.E., 1988. Native American Ethnobotany. Timber Press Inc., Portland, OR. 927 pp.
- Shockley, F. W. R. L. McGraw, and H. E. Garret. 2011. Growth and Nutrient Concentrations of two Native Forage Legume with Rhizobium and Mycorrhiza in Missouri, USA. *Agroforestry Systems* 60: 137 – 142.
- Speck, F.G., 1941. A list of Curatives Obtained from the Houma Indians of Louisiana. *Primitive Man* 14: 49-75.
- USDA. 1961. Seeds. The Yearbook of Agriculture. U.S. Printing Office. Washington, DC. 591 pp.
- USDA-NRCS. 2008. Conservation Practice Standard 327 – Conservation Cover. NRCS-MI Field Operations Technical Guide.
- USDA 2013. PLANTS Database. www.plants.usda.gov. Verified 2/13/2013.
- Voss, E. G. 1985. Michigan Flora. Part II Dicots. University of Michigan, Ann Arbor, MI. 724 pp.
- Wulff, R.D. 1986. Seed size variation in *Desmodium paniculatum*, II. Effects on seedling growth and physiological performance. *J. Ecol.* 74, 99-114.

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