

Plant Diversity Website

***Menispermum canadense* (L.)**

Common Names: Moonseed, Common Moonseed, Yellow Parilla

Etymology: From the Greek *mene*, for moon, and *sperma*, for seed (1), while *canadense* means “from Canada” (3).

Botanical synonyms: none found (6)

FAMILY: Menispermaceae (Moonseed family)

Quick Notable Features:

- Peltate leaves, with petiole attachment near the cordate leaf base
- Species generally bears six-parted flowers
- Long petiole with basal pulvinus
- curly short hairs abaxially on veins only

Plant Height: Climbs 2-4 m (1).

Subspecies/variety cited: *Menispermum canadense* var. *lobatum* Pursh (7).

Most Likely Confused with: Members of the Vitaceae, particularly *Vitis riparia* and *Parthenocissus tricuspidata*. Also potentially confused with *Hedera helix* and possibly *Echinocystis lobata*.

Habitat Preference: The species prefers moist, swampy habitats with soils ranging from clay loam to sandy, particularly woods and thickets. It is common along rivers (1, 5, 13).

Geographic Distribution in Michigan: Distributed in many of the counties in the lower third of the Lower Peninsula, and found more sporadically to the North. Found only in Menominee County in the Upper Peninsula (4, pers. obs. RJB).

Known Elevational Distribution: no elevational distribution found in published literature.

Complete Geographic Distribution: Native to North America, in particular the eastern two-thirds of the United States (from the west Texas border eastward), excluding Louisiana, Maine, and Rhode Island (4).

Vegetative Plant Description: The leaves are alternately arranged and peltate near the basal



margin, with petiole attachment very close to the leaf blade's cordate base. The base is slightly pubescent and shallowly (occasionally deeply) lobed (1, 4). The leaves are 10-15 cm long, 15-20 cm wide (ovate to suborbicular) and can be anywhere from entire to seven-lobed (most commonly three to five-lobed) (5, 14). The venation is palmate. It spreads asexually by vegetatively colonizing. Its bark is woody. It has no fall color, and though perennial, is not evergreen (6, 13).



Climbing Mechanism: Climbs dextrally (left to right) by twining with the stem apex (6).

Flower Description: The vine is dioecious with small, non-fragrant flowers in panicles. Flowers range from a creamy white to a brownish green (6, 13). Both male and female flowers have between four and eight sepals that are 0.4 - 1.8mm and four to twelve petals that are 0.6 - 2mm. Stamens of the male flowers are 4mm long; pistillate flowers have 2-4 carpels that are about 1.4mm long (7). The ovary is superior (6).



Flowering Time: May to July (in Illinois) (6).

Pollinator: no published reports found.

Fruit Type and Description: Blue to black drupe, 6-13mm long. They resemble glaucous wild grapes and ripen from September to November (1, 4, 6).

Seed Description: Shaped like a crescent moon, 6-10mm across (pers. obs.), light tan to brown to gray (4). The seedling has very long thin cotyledons, but a typically-shaped first true leaf (see last image).

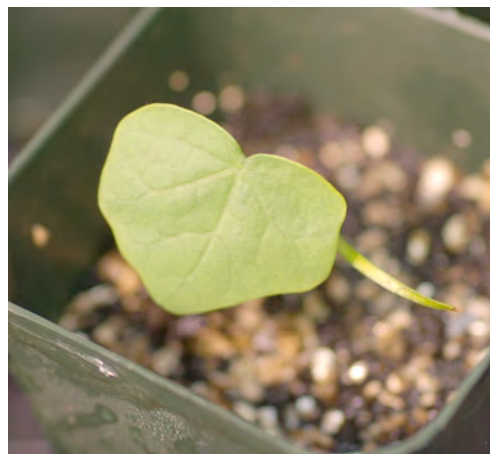
Dispersal Syndrome: The fleshy blue fruit with a single seed certainly suggests vertebrate dispersal, and one study in Illinois found that the fruits were eaten by hermit thrushes (15).

Distinguished by: Tiny crescent-shaped seeds and abrupt petiole-to-leaf attachment. The seed of *Menispermum* distinguishes it from all *Vitis* species; in addition to the axillary tendrils of *Vitis*, which are lacking in *M. canadense*. The lack of tendrils also separates *M. canadense* from *Parthenocissus tricuspidata*, a plant whose modified tendrils often bear adhesive pads. *M. canadense* is distinguished from *Hedera helix* (common ivy) because *Menispermum* climbs using apical branches while *Hedera* uses adventitious roots to climb. *Menispermum* is distinguished from the very herbaceous *Echinocystis lobata* by the presence of coiling axillary tendrils and serrate, deeply lobed leaves in *Echinocystis*.



Other members of the family in Michigan: No others. The only other species in the genus *Menispermum* is found throughout Asia (7,10). *Calycocarpum*, *Cissampelos*, and *Cocculus* are other Menispermaceae genera found in the United States (7). The family is largely tropical.

Ethnobotanical Uses: Curiously, although the drupes are “strongly suspected to be poisonous” (1), *Menispermum canadense* has many ethnobotanical uses, ranging from bowel treatments to “weakly females” (2). It was also used as a skin treatment (especially for sores), treatment for venereal diseases, and a laxative (2). Luckily, all uses cite only the use of the roots, and not the drupe. Other species in *Menispermum*, e.g., *M. dauricum*, are entirely poisonous and yet still used as a cancer treatment (9).



Phylogenetic Information: Within the Ranunculales, the Menispermaceae is most closely related to the Berberidaceae and the Ranunculaceae, both of which have well-known members such as barberry, marsh marigold, columbine, and wolfsbane. The closest relative to this branch of the Ranunculales is the Circaeasteraceae family, although the support for this relation is relatively weak. Circaeasteraceae is an geographically-restricted family, found only in Nepal and Southwestern China (and is also known as the Kingdoniaceae family). Interestingly, the similarities between the fruits of Lardizabalaceae and Menispermaceae (both have non-peltate carpels and fleshy fruits) demonstrate a strong relation there as well.

Interesting Quotation or Other Interesting Factoid not inserted above: The genus literally means “moon seed” in Greek; why it is named such should be quite obvious by now. The plant (which is highly toxic) is often confused in the wild for its edible look-alike, wild grape.

Literature and websites used:

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- 3) *Dictionary of Botanical Epithets* <http://www.winternet.com/~chuckg/dictionary.html>
- 4) Voss, E.G. 2001. *Michigan Flora*. Volume II, Cranbrook Institute: Ann Arbor, Michigan.
- 5) Gleason, H.A. and A. Cronquist 1991. *Manual of Vascular Plants of the Northeastern United States and Adjacent Canada*. New York Botanical Garden, Bronx, New York.
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- 8) USDA Natural Resources Conservation Service Plant Profile for *Menispermum canadense* <http://plants.usda.gov/java/profile?symbol=MECA3>
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- 10) Flora of Pakistan http://www.efloras.org/florataxon.aspx?flora_id=5&taxon_id=107477

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- 12) Endress, P.K. 1995. Floral structure and evolution in Ranunculanae. Pp. 47-61, in Jensen, U., & Kadereit, J. W. (eds.), *Systematics and Evolution of the Ranunculiflorae*. Springer, Vienna. [Plant Syst. Evol. Suppl. 9.]
- 13) Evergreen Native Plant Database <http://www.evergreen.ca/nativeplants/search/view-plant.php?ID=02691>
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<http://www.illinoiswildflowers.info/savanna/plants/moonseed.htm>
- 15) Malmborg, P.K. and M.F. Willson 1988. Foraging ecology of avian frugivores and some consequences for seed dispersal in an Illinois woodlot. *The Condor* 90(1):173-186.

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PRIMARY AUTHOR: ReBecca J. Sondag with advice and additions from Robyn J. Burnham

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For additional information on Michigan Plant Diversity web pages please contact Robyn J. Burnham via email: rburnham@umich.edu