

Plant Diversity Website

***Amphicarpaea bracteata* (L.) Fernald**

Common Names: hog peanut, American hog-peanut, wild peanut

Etymology: *Amphicarpaea* is Greek for "two-seeded," referring to the two types of seeds: above and below ground. *Bracteata* is Latin for "bearing bracts" (1, 3).

Botanical synonyms: *Glycine bracteata* Linnaeus (2), *Amphicarpaea monoica* (L.) Ell., *Falcata comosa* (L.) Kuntze (4), *Amphicarpaea chamaecaulis* Boivin & Raimond, *Amphicarpaea ciliata* Raf., *Amphicarpaea comosa* (L.) G. Don ex Loudon, *Amphicarpaea cuspidata* Raf., *Amphicarpaea deltifolia* Raf., *Amphicarpaea elliottii* Raf., *Amphicarpaea heterophylla* Raf., *Amphicarpaea villosa* Raf., *Amphicarpaea pitcheri* Torr. & A. Gray, *Amphicarpaea sarmentosa* Elliot ex Nutt, *Falcata bracteata* (L.) Farw., *Falcata caroliniana* J.F. Gmel., *Falcata pitcheri* (Torr. & A. Gray) Kuntze, *Glycine comosa* L., *Glycine monoica* L., *Glycine sarmentosa* Roth, *Lobomon acutifolium* Raf., *Lobomon montanum* Raf., *Lobomon obtusifolium* Raf., *Lobomon sarmentosum* (Elliot ex Nutt) Raf., *Savia volubilis* (L.) Raf., *Tetrodea comosa* (L.) Raf., *Tetrodea monoica* (L.) Raf. (14).

FAMILY: Fabaceae (the bean and pea family)

Quick Notable Features:

- ¬trifoliate vine without tendrils
- ¬narrow, pointed, pale purple or white papilionaceous flowers
- ¬flowers produced also at ground level to produce underground "peanut"

Plant Height: up to 150cm in length (1)

Subspecies/varieties recognized (12):

- A. bracteata* (L.) Fernald var. *comosa* Fernald
- A. bracteata* (L.) Fernald var. *pitcheri* Fassett
- A. bracteata* (L.) Fernald var. *typica* B. Boivin & Raymond

Most Likely Confused with: Other trifoliate legumes such as *Apios americana*, *Desmodium rotundifolium*, *Lespedeza procumbens*, *Pueraria lobata*, and *Strophostyles helvola*, as well as other trifoliate non-legumes such as *Toxicodendron radicans*.

Habitat Preference: reported from dry to moderate and even moist areas such as woods, forests, meadows, roadsides, and prairies (1, 5).

Geographic Distribution in Michigan: The hog peanut has been documented throughout the southern portion of the lower peninsula of Michigan but is not reported from many of the northern counties. It is, however, reported from at least five counties in the Upper Peninsula and may be frequently overlooked (5).



Known Elevational Distribution: The species was found in Haywood, NC at 760 meters above sea level (14).

Complete Geographic Distribution: Native to Canada and the United States: Manitoba east to Nova Scotia, south to Florida, west to Texas, and north to North Dakota and Montana (3).

Vegetative Plant Description: *A. bracteata* is an annual or perennial plant that grows from a taproot (3,5,13). The coiling stem fixes the plant to its support without the use of modified tendrils. The plant can be either glabrous or can bear appressed pubescence. The grooved stipules are approximately 0.4cm long, and oblong to ovate (15). The alternate leaves that bear a long petiole (2-10cm) are trifoliate. Each of the three leaflets are broadly oval (slightly longer than broad), acute, with the lateral leaflets inequilateral and terminal leaflet bearing a longer petiolule than the other two (5,15). The leaflets bear stipelets and the leaflet size is 2-6cm long (13).



Climbing Mechanism: *A. bracteata* twines using the apical portion of the stem, twining in a dextral orientation (left to right) (pers. obs. R.J. Burnham, see image).

Flower Description: The four fused sepals, glabrous or appressed pubescent, are slightly asymmetric and appear to number four through fusion forming a calyx tube 4-5mm long. The five petals are white to lavender, zygomorphic, 12-18mm long. Each flower has a short pedicel and is subtended by small, ovate bracts (2-2.5mm long) that equal or are slightly shorter than the pedicels. The wings are wider at the tip than the base. The upper inflorescences (in which this flower type is borne) form a loose unbranched, nodding raceme in the leaf axils bearing 2-15 flowers. Stamens are 10 in two groups: one of 9 fused by their filaments and the second group of one. The simple, single pistil has a superior ovary and filiform style 1-3mm long (1,3,5,8,9,13,15). There is, however, a second type of flower produced. They are borne solitary on the lower or creeping branches, near the soil level and are relatively inconspicuous flowers that lack petals (3). Flowers produced near the ground produce a pod that buries itself just below soil level (4).

Flowering Time: Aug.-Sept in our area (1,3).

Pollinator: The lower flowers do not open and are believed to be cleistogamous (5, 7). It is reported that selfing flowers are sometimes borne from the upper inflorescences as well (6,7).

Fruit Type and Description: The 3-seeded aerial



fruits are 1.5-4cm long, flat, smooth to strigose, wider at the tip, and pointed at both ends (persistent style) (1,9). Fruits produced at or below the ground level are only 6-12mm, strigose, and contain a single seed (3,4,9,13).

Seed Description: The underground single-seeded pods produce hard seeds up to 15mm in diameter. Birds feed on the seeds of both kinds of fruit. Hogs eat the seeds of the fruit below ground, thus the common name (3). Seedlings bear simple leaves as the first leaves to show above ground but are rapidly replaced by typical trifoliate leaves (see image).



Dispersal Syndrome: Trapp (6) found that the seeds of both types of fruits are ballistically dispersed, with the aerial fruits dispersing seeds furthest because of the height advantage. He also reports that both chasmogamous and cleistogamous flowers are produced above ground. He described the subterranean fruits as being single seeded and 16 times heavier than those produced above ground.

Distinguished by: *A. bracteata* is clearly distinguished from *Pueraria lobata* by the leaflet size: *Amphicarpaea bracteata* leaflets are about 1.5 to 4 cm long, whereas *P. lobata* leaflets are 10-20cm. *Strophostyles helvola* bears a minute point at the tip of the leaflets and has umbellate inflorescences. *Desmodium rotundifolium* fruits easily break between seeds whereas those of *A. bracteata* do not segment. In addition, the leaflets of *Desmodium* are much more rounded than seen in the hog peanut. *Apios americana* is clearly 5-7 foliate, not trifoliate. *Toxicodendron radicans* has irregularly rounded lobes or large broad teeth on the leaflets, which are generally much larger than those of *A. bracteata*.

Other members of the family in Michigan (number species): *Wisteria* (1), *Amorpha* (2), *Amphicarpaea* (1), *Anthyllis* (1), *Apios* (1), *Astragalus* (3), *Baptisia* (4), *Caragana* (1), *Cercis* (1), *Chamaecrista* (2), *Cladrastis* (1), *Colutea* (1), *Crotalaria* (1), *Cytisus* (1), *Dalea* (1), *Desmodium* (12), *Genista* (1), *Gleditsia* (1), *Glycine* (1), *Gymnocladus* (1), *Hedysarum* (1), *Kummerowia* (1), *Lathyrus* (10), *Lespedeza* (13), *Lotus* (1), *Lupinus* (2), *Melilotus* (2), *Mimosa* (1), *Orbexilum* (1), *Phaseolus* (2), *Pisum* (1), *Pueraria* (1), *Robinia* (3), *Securigera* (1), *Senna* (1), *Strophostyles* (1), *Tephrosia* (1), *Trifolium* (9), *Vicia* (7), *Vigna* (1) [10].



Ethnobotanical Uses: The seeds can be used as a peanut substitute. Some authors report the seeds of the upper fruit are inedible, but that those from the underground fruit as edible when boiled (3). Other reports indicate that the underground seeds can be harvested throughout the winter and can be eaten raw or cooked (4), whereas flowers higher up on the plant produce seeds that are much smaller and are usually cooked before being eaten. The seeds can be used in all the same ways as lentils and are a good source of protein (4).

The hog peanut was used by native Americans such as the Pawnee, Chippewa, and Cherokee for a variety of uses such as tea for snakebite (root) and diarrhea (root infusion), swellings (poultice of leaves) as well as a food source (4, 5).

Phylogenetic Information: *Amphicarpaea bracteata* is a member of the Fabaceae, subfamily Faboideae. Families Fabaceae, Polygalaceae, Quillajaceae, and Surianaceae form the Fabales order. The Fabales, Rosales, Cucurbitales, and Fagales form a monophyletic group within the Eurosids I within the larger Rosid group. All are eudicots are angiosperms (11).

Interesting Quotation or Other Interesting Factoid not inserted above:

Trapp's (6) description of the subterranean fruits indicated that they were single seeded and are 16 times heavier than those produced above ground. Runners (ground level stems) are produced that search out dark crevices in the soil. If these are found, the plant produces an underground flower (6)

Literature and websites used:

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- 5) USDA, NRCS. 2008. The PLANTS Database, Version 3.1, National Plant Data Center, Baton Rouge, LA 70874-4490 USA. <http://plants.usda.gov/> Accessed July 31, 2008
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