# Plant Diversity Website

# Vicia caroliniana Walter

**Common Names**: Carolina vetch (3), Pale vetch, wood vetch (2)

**Etymology**: *Vicia* is the latin for "Vetch" while "caroliniana" means "from the Carolinas" (5).

**Botanical synonyms**: Vicia hugeri Small (3); Cracca caroliniana (Walter) Alefeld; Vicia parviflora Michaux (14).

FAMILY: Fabaceae (the pea or legume family)

### **Quick Notable Features:**

- ¬ generally sprawling, occasionally climbing stems with tendrillate leaf tips
- $\neg$  pale purple or white corolla with bright yellow or orange anthers
- ¬ racemes loose with scattered flowers

**Plant Height:** The stems grow to a length of 1.5m (6). No information was found on how high these stems climb.

## Subspecies/varieties recognized: none (3)

Most Likely Confused with: Other species of Vicia and Lathyrus.

**Habitat Preference:** Prefers woods and forest edges in the Carolinas (6). Voss (2) notes that it is usually found in dry open ground, often in clearings or at the edges of oak and oak-hickory forests. Hardin (16) reports it as only occurring within the prairie of ecosystems sampled in southern Ohio.

**Geographic Distribution in Michigan:** *V. caroliniana* is found in the majority of counties in the southern half of the Lower Peninsula (2).

**Known Elevational Distribution:** Radford et al. (6) noted that this species is found in South Carolina primarily on mountains and piedmont, but no specific elevation information was recorded.





**Complete Geographic Distribution:** Native to the United States, *V. caroliniana* is now found throughout the eastern half of the country, from Texas east to Florida and north to New York and Minnesota. It is also found in Ontario, Canada (1).

Vegetative Plant Description: A perennial, herbaceous vine. The sparsely pubescent to



glabrous stems climb or sprawl to a length of 1.5m. The alternate, finely pubescent compound leaves usually have 5-9 pairs of elliptic-oblong or oblong-lanceolate leaflets per leaf. The leaflets are approximately 0.8-2cm long, rounded and mucronate, with approximately 5-7 lateral veins on each side. The apical-most petiolule is modified at its tip as a simple or branched tendril. Lanceolate or lanceolate-sagittate stipules are present and entire (6,7,9,11). The leaves of *Vicia caroliniana* are reported to remain green through the winter in central and southern Ohio (17). *Vicia caroliniana* is a root-nodule forming legume (nitrogen fixing) that is part of a large group of legumes that are capable of cross-inoculating when grown together (15).

Climbing Mechanism: Tendrils at the leaf tip (6).

**Flower Description:** The racemes are axillary, have 7-20 flowers each, and are often shorter than the subtending leaves. The flowers are often borne on one side of the peduncle. The regular or almost regular calyx is villous, with a tube 1.8-2.5mm long and nearly equal triangular

calyx lobes 0.5-1mm long. The corolla is pale purple or white, the tip of the keel petal blue, with the banner petal 8-12mm long. The styles are pubescent or villous at the apex, and the 10 stamens are diadelphous (in a group of 9 plus a single 10<sup>th</sup> stamen) and "terminate obliquely" (7). The anthers are yellow-orange (2,6,7,9,11).

Flowering Time: April – July (6).

**Pollinator:** Nothing was found about pollination of the species, however the specialized papilionaceous corolla typical of the subfamily suggests insect or specifically bee pollination (13). The Appalachian Grizzled Skipper, an endangered lepidopteran in New Jersey, has been reported to feed on the nectar of *V. caroliniana (18)*.

Fruit Type and Description: A narrow stipitate legume, 1.5-3cm long, with 5-8 seeds/fruit (6).



**Seed Description:** The compressed or subglobose seed is 3-4mm in diameter. The attachment scar, found at the margin of the seed, extends "three-fourths around the circumference" (9). Based on descriptions, we believe that the scale bar in the seed image here is in error.

**Dispersal Syndrome:** Nothing was found for the species other than a reference to dispersal by animals (19) that we question, given that all other species in the genus are reported to be abiotically dispersed.

**Distinguished by**: *V. caroliniana* can be most effectively distinguished from members of the genus *Lathyrus* by its styles and stamen-tubes. The styles of *Vicia* are pubescent or villous at the apex; those of *Lathyrus* are pubescent or villous along the entire upper side of the style. Additionally, the stamen tubes of all *Vicia* members "terminate obliquely" (7) whereas those of *Lathyrus* are truncate. A final character that may possibly distinguish *Vicia* from *Lathyrus* is the stems – *Lathyrus* members often have winged stems, unlike *V. caroliniana* (6,7,9).

*V. caroliniana* can be distinguished from *V. sativa* and *V. sepium* by its peduncle. The latter two have peduncles that are much shorter than the leaves, whereas the peduncle of *V. caroliniana* is as long as or almost as long as the leaf.

The small legume of *V. hirsuta* is 6-10mm long and tapers to a beak, unlike the rounded, 1.5-3cm long fruit of *V. caroliniana*. Additionally, the flowers of *V. hirsuta* are a third as long as those of *V. caroliniana*.

*V. cracca* and *V. villosa* have dense racemes with overlapping blue or violet flowers, and can be distinguished because *V. caroliniana* has loose racemes of white or pale purple flowers (6,7,9).

**Other members of the family in Michigan:** 97 species in 34 genera. Genera *Amorpha* (2), *Amphicarpaea* (1), *Anthyllis* (1), *Apios* (1), *Astragalus* (3), *Baptisia* (3), *Caragana* (1), *Cassia* (4), *Cercis* (1), *Coronilla* (1), *Crotolaria* (1), *Cytisus* (1), *Dalea* (2), *Desmodium* (12), *Gleditsia* (1), *Glycine* (1), *Gymnocladus* (1), *Hedysarum* (1), *Lathyrus* (10), *Lespedeza* (8), *Lotus* (1), *Lupinus* (3), *Medicago* (3), *Melilotus* (3), *Pisum* (1), *Phaseolus* (2), *Psoralea* (1), *Robinia* (3), *Schrankia* (1), *Storophostyles* (1), *Tephrosia* (1), *Trifolium* (10), *Vicia* (9), and *Wisteria* (2) [1].

**Ethnobotanical Uses:** *V. caroliniana* was used by the Cherokee as a treatment to treat aches. Scratches were made on the skin over the location of the aching muscle or joint, and an infusion of the plant was rubbed in. It was also used internally to treat rheumatism, respiration problems, and dyspepsia (4).

**Phylogenetic Information**: Within the genus *Vicia*, *V. caroliniana* falls into the subgenus *Vicilla*, section *Cracca*. The genus is a member of the subfamily Faboideae (Papilionoideae) within the family Fabaceae. Fabaceae, along with the Polygalaceae, Quillajaceae, and Surianaceae form the Fabales order. The Fabales, Rosales, Cucurbitales, and Fagales form a monophyletic clade within the Eurosids I within the larger Rosid group of the Eudicot angiosperms (8,10).

**Interesting Quotation or Other Interesting Factoid not inserted above:** Larvae of two subspecies of the silvery blue butterfly *Glaucopsyche lygdamus*, ssp. *Lygdamus* and *Couperi*, have been noted to feed on closely related, *V. sepium*. These observations were made in upstate New York, which is the northern limit for the subspecies *Lygdamus* (12).

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