

# Plant Diversity Website

## ***Lathyrus sylvestris* L.**

**Common Names:** Flat-Pea, Flat Peavine, Narrow-leaf Everlasting-Pea, Perennial Pea (2,3,7,8).

**Etymology:** *Lathyrus* is derived from the Greek word “lathyros”, which means legume, or bean (10). “Sylvestris” means “of woods or forest” (11).

**Botanical synonyms:** *Lathyrus variegatus* Gilib (7).

**FAMILY:** Fabaceae (the Pea family)

**Quick Notable Features:**

- leaves bear just two linear-lanceolate leaflets (5)
- fruits are long, flat pods, tapered at both ends (6)
- climbs using branched tendrils borne at the tip of the leaves
- flower petals are pinkish purple (6)

**Plant Height:** *L. sylvestris* can grow to be 1.5 to 2.15 m with support, and 46 to 76 cm without a support (1).

**Subspecies/varieties recognized** (20, 21):

*Lathyrus sylvestris* v. *cirrhosus* (Ser.) P. Fourn.

*L. sylvestris* v. *intermedius* Kožuharov

*L. sylvestris* subsp. *latifolius* (L.) Ponert

*L. sylvestris* subsp. *heterophyllus* (L.) Bonnier & Layens

*Lathyrus sylvestris* subsp. *pyrenaicus* (Jordan) O. Bolòs & Vigo



**Most Likely Confused with:** In flower it might be confused with species in the genera *Securigera*, *Vicia*, and *Viola*, as well as other species of *Lathyrus*, especially *L. latifolius* (everlasting pea)(5).

**Habitat Preference:** The species is found in fields, areas of human activity such as roadsides, and sometimes in wooded areas (2).

**Geographic Distribution in Michigan:** The species is scattered throughout Michigan, but is more abundant in the northern region. It is found in the northern counties of the Lower Peninsula, but also in Isabella, Huron, Ingham, and Monroe counties in the south. It is also in Keweenaw, Gogebic, and Alger counties of the Upper Peninsula (2).

**Known Elevational Distribution:** *Lathyrus sylvestris* is found up to 2120m in Utah (13).

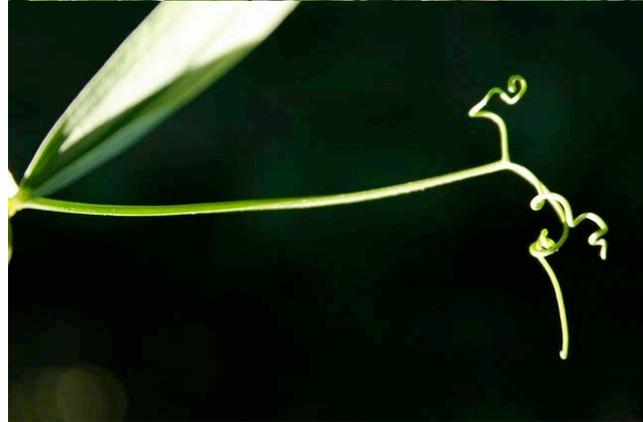
**Complete Geographic Distribution:** Indigenous to and widely distributed in Europe (southwestern France), Asia, and northern Africa (7). Introduced throughout the United States, it is found in the northwest, northeast, and southeast regions. *L. sylvestris* also can be spotted in southern areas of Canada: British Columbia, Ontario, New Brunswick, and Quebec (4).

**Vegetative Plant Description:** *L. sylvestris* is a perennial vine with woody roots. Each alternate leaf is pinnately compound with a single pair of leaflets (5-15cm long in native range of Russia, although reported as shorter from North America: 1-7.6cm) and characteristic longitudinal veins. The coriaceous stipules are semi-sagittate, pointed at the tip, and about half as wide as the winged stem ( $\leq$  2cm long). Stipule lobes are half as wide as the stem or narrower. The leaflets are narrowly lanceolate, coriaceous, with conspicuous veins. The petiole is winged. The seedlings first develop taproots, but later develop rhizomes (1,2,4,6,15).



**Climbing Mechanism:** The species climbs using branched tendrils borne at tip of leaf rachis (6).

**Flower Description:** The inflorescence of *L. sylvestris* is a raceme (an unbranched inflorescence where flowering is from base to apex) with 3-10 flowers per inflorescence. The calyx is bell-shaped and each sepal is triangular-lanceolate shaped. The teeth of the calyx taper toward the apex (6). The non-fragrant flowers are 1-2 cm long, in which the uppermost petal is the shortest, plus two lateral wings, and a pair of fused petals forming the keel. The flower petals are purple or pink. *Lathyrus* has ten stamens: nine of which bear fused filaments, forming a tube-like structure while the tenth stamen is separate. The tube of stamens surrounds the glabrous ovary. The fruit (ovary) bears the seeds (fertilized ovules), and develops into a classic legume bearing a finely toothed dorsal suture (1,2,18).



**Flowering Time:** In the United States, *L. sylvestris* flowers in early summer and fruits throughout the summer (3). In Russia the flowers appear from June to August, and the fruits follow from August until September (6).

**Pollinator:** Bumblebees, carpenter bees, and bruchid beetles have been cited as pollinators. Most pollen transfer is within a local range (4).

**Fruit Type and Description:** The mature fruits of *L. sylvestris* are yellowish legumes. They are long and laterally narrow (flat) (about 6cm long and 1cm wide). Both ends of the pod are tapered (6). Both ovaries and fruits are glabrous (without hairs) (2).



**Seed Description:** The seeds are globose (6).

**Dispersal Syndrome:** Fruits mature in the fall as dehiscent pods and the seeds are dispersed ballistically as the fruits dehisce violently, spilling the seeds onto the ground. Dispersal thus occurs over a short range (4). The seeds can then roll away to establish themselves nearby (4, 15, 16, 17).

**Distinguished by:** *L. sylvestris* has smaller flowers, stipules, and fruits, with longer and wider leaves than *L. latifolius* (Everlasting Pea) (5). *Lathyrus* is different from *Vicia* because *Vicia* always has more than two leaflets, whereas some species of *Lathyrus* have only two, like *L. sylvestris*. A more technical character is that *Vicia* has a longer strip of hairs at the top of the style, right below the stigma (2). *Viola* has 2 upper petals and unfused petals whereas *Lathyrus* only has one upper petal and two fused lower petals (2). The leaves of *Viola* are normally not lanceolate, and the stems are not winged (19). *Coronilla* spp. bear 10-12 leaflets per leaf while *Lathyrus sylvestris* only bears two, although species of both genera can bear pink flowers.

**Other members of the family in Michigan (number species):** *Amorpha* (2), *Amphicarpea* (1), *Anthyllis* (1), *Apios* (1), *Astragalus* (3), *Baptisia* (4), *Caragana* (1), *Cercis* (1), *Chamaecrista* (2), *Cladrasis* (1), *Colutea* (1), *Crotalaria* (1), *Cytisus* (1), *Dalea* (1), *Desmodium* (12), *Genista* (1), *Gleditsia* (1), *Glycine* (1), *Gymnocladus* (1), *Hedysarum* (1), *Kummerowia* (1), *Lathyrus* (9), *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* (8), *Vigna* (1), *Wisteria* (1), (2,14)

**Ethnobotanical Uses:** *L. sylvestris* produces chemicals that are toxic to humans and to animals. It is the most lethal species in the genus *Lathyrus*, and causes damage to the central nervous system. The toxin is primarily in the seeds of the plant, but the foliage also produces symptoms. Farm animals such as sheep and horses sometimes eat the plants and become very ill. The disease is called “Lathyrism” (8).

**Phylogenetic Information:** The Fabaceae belongs to the order Fabales, which is closely related to Fagales, Cucurbitales, and Rosales within the angiosperm Eurosids I. Within Fabaceae, *L. sylvestris* belongs to the subfamily, Faboideae (also known as Papilionoideae). Members of this subfamily are characterized by the papilionaceous flowers. *L. sylvestris* is included in the tribe Fabeae (7,12).

**Interesting Quotation or Other Interesting Factoid not inserted above:** Members of the Fabaceae family often have root nodules that allow for nitrogen fixing bacteria, and this family is “the third largest family of angiosperms” (12). This may be no coincidence!  
“Clones consist of a series of ramets connected by an extensive system of rhizomes. Strong subterranean stems initiated by primary ramets produce either secondary ramets or tufts of shoots without roots” (9). Thus, it seems that what may appear to be many different individuals is just one large genetically identical clone.

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