

Mile-a-minute (*Polygonum perfoliatum* L.) Update- Distribution, Biology, and Control Suggestions

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Little is known about the biology and control of mile-a-minute. This is true even in Japan and Korea, where it is native and plant scientists indicate that mile-a-minute is a weed of minor significance with little or no agricultural impact. The purpose of this article is to give some information (of what is known at this writing) on the biology and control of this weed.

Mile-a-minute, an annual prickly vine native to Asia and introduced into southern York County, probably in the early 1940s, continues to extend its range in Pennsylvania. To date, the presence of this legislated noxious weed has been documented in 11 counties - York, Lancaster, Adams, Cumberland, Dauphin, Perry, Chester, Delaware, Berks and, most recently, Westmoreland and Bedford. Maryland and West Virginia are the only other states reporting this plant.

Typical habitats are roadsides (especially in crownvetch), edges of woods and thickets, nurseries, reforestation clear-cuts, utility right-of-ways, and damp areas such as low meadows and stream banks. In general, mile-a-minute grows in areas that have an abundance of plant litter such as leaves, duff, or brush on the soil surface. This material seems to provide a mulching effect, keeping the seeds moist, and along with winter cold, cause spring germination.

Mile-a-minute may reach 20 ft. (6m) long (Fig. 1). The leaf shape is unique, appearing as a perfect triangle from 1-3 in. (2.5 - 7.5 cm) across.

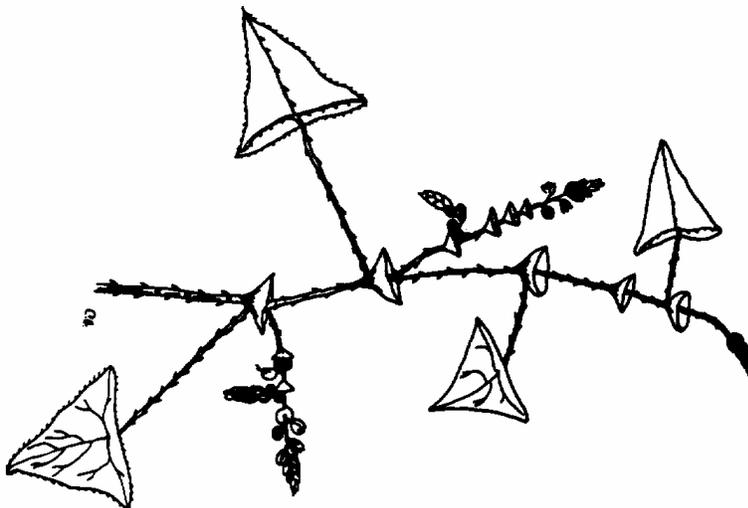


Fig. 1. Line drawing of branch apex of *P. perfoliatum*. From Hickman and Hickman (1976-77); courtesy of Bartonina and the authors.

Sheaths at the nodes are saucer-shaped, completely encircling the stem (hence the name *perfoliatum*). Numerous sharp backward-curving spines are present on the stem, petiole, and main leaf veins (hence the name "tearthumb"). The outside of the fruit is fleshy, spherical, about 3/16 in (5 mm) in diameter and iridescent blue when mature. Each "berrylike" fruit contains a single black, shiny "seedlike" achene about 1/8 in (3 mm) in diameter. A population of mile-a-minute climbing over other plants and fences will appear light green compared to surrounding vegetation. In winter, the dead vines appear reddish brown.

Mile-a-minute prefers sunny locations but will survive in light shade. Mature blue "berries" appear from about August 1 till frost, and plants under stress appear to produce more seeds than vigorous, unstressed plants. Seed germination in southcentral Pennsylvania begins about April 1. In greenhouse trials, seeds would germinate only after receiving a cold/moist treatment (stratification). Germination was completed in 2-3 weeks.

Birds and rodents have been implicated in feeding on and helping disperse the seeds. Seeds also are carried downstream in rivers and streams, especially during flooding.

Control Suggestions

The following controls are largely based on mile-a-minute biology and research conducted at the Pennsylvania Department of Agriculture.

Mechanical control - *Mowing* it in a grassy area or *cutting* with a scythe or weed whacker. This must be done before excessive vining and seed set.

Hand pulling (wear gloves) is practical if a few plants are invading gardens and ornamentals. Plants are poorly rooted and easy to pull. A garden rake has been used to pull and uproot vines from an embankment.

Cultivating/hoeing when in the seedling stage is effective as with other annuals.

Clear areas of heavy deposits of dead and decaying plant material that tend to provide a "mulching effect" for the seeds. Brush piles and old wood piles are ideal habitats.

Chemical control - *Glyphosphate* (Roundup, Ranger) will control mile-a-minute but is nonselective to other plants.

In a reforestation clear-cut situation, *sylfometuron methyl* (Oust) applied preemergence, controlled mile-a-minute. Also, a late postemergence application (July) of *imazapyr* (Arsenal) killed the vines.

Atrazine (AAtrex 4L) @ 2 qts/acre was applied in the perimeter between a wooded area and a corn field in mid-August, with excellent results.

Mile-a-minute leaves do not wet easily, so a surfactant may need to be added to some spray materials.

Table 1. Mile-a-minute spray trials in crownvetch

Product	Quantity/ Acre	Timing	% Mile-a-minute in plot canopy
AAtrex 8Ow (atrazine)	1-1/4 lb 1 lb ai*	postemergence	10
AAtrex 8Ow (atrazine)	2-1/2 lb 2 lb al	postemergence	0
Velpar (hexazinone)	2 qts 1 lb ai	preemergence postemergence	0 0
Pursuit (imazethapyr)	.4 pt .1 lb ai	preemergence postemergence	0 0
Control			60

*ai active ingredient

The above spray trials (Table 1) were conducted as research. *Use pesticides only in accordance with labeled instructions.*

When considering controls, the following points concerning timing and stages of mile-a-minute are important:

Seed germination - Because mile-a-minute is an annual, it is *propagated only from seeds each spring*. Preemergence sprays must be applied before germination, which starts around April 1.

Vining - From June throughout the summer, cutting or mowing is easier before extensive vining. Also, postemergence herbicides are more easily applied, although some late postemergence sprays have produced excellent results.

Fruit/seed set - Commences around August 1 in southcentral Pennsylvania and continues until frost. To eliminate a seed reservoir for the next season, controls must be implemented before seed set.

Future Needs

The animal species involved in seed dissemination and the period of seed viability in or on the soil surface need to be determined. Mile-a-minute is a good example of an introduced pest with a lack of important natural enemies. Surveys by the Department's entomology division have shown that although numerous insect species feed on this plant, they have little effect on its growth or spread. This weed should continue to be monitored for the presence of potential biocontrol agents.

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