



PennState Extension

INVASIVE PLANT FACT SHEET

Mile-a-Minute

(*Persicaria perfoliata*)

Photo credit: Dave Jackson

Background

Mile-a-minute (*Persicaria perfoliata*) is a trailing vine with barbed stems and triangular leaves. In contrast to other invasive vines, mile-a-minute is an herbaceous annual, meaning it dies each fall and new plants grow from germinating seeds in the spring. Originally from India and East Asia, this species was first reported in York County, Pennsylvania, in the 1930s in contaminated nursery soil. Mile-a-minute is listed as a “Class B” noxious weed by the State of Pennsylvania, a designation that restricts sale and acknowledges a widespread infestation that cannot feasibly be eradicated. The dense foliage of this invasive weed blankets and slowly suffocates native vegetation, making it extremely destructive and persistent despite being an annual plant.

Description

Size: Each vine can grow 20 to 30 feet long, forming a dense, tangled blanket of intertwined vines. In the peak growing season, mile-a-minute can put on up to 6 inches of growth a day.

Leaves: Its leaves are distinctly triangular or arrowhead shaped, 1 to 3 inches wide, vibrant green, and bear many hooked barbs along the underside of the central vein and leaf stem, or petiole. Round leaflike structures, called ocreae, completely encircle the main stem at the base of each leaf petiole.

Fruit: While the pale green flowers are not noticeable, this vine produces metallic blue or purple berrylike fruit in late summer, each ¼ inch across. The fruit appear in an elongated cluster at the vine’s tips. The clusters have a round, cuplike leaf structure directly below them.

Stems: Stems are thin, flexible, and covered in tiny hooked barbs. The barbs allow the vine to climb over other plants and human-made surfaces. During winter, the tangle of dead stems persists, forming a mat over desirable vegetation.

Dispersal

The seeds are small and often distributed by accidental movement. They can be dispersed easily by moving contaminated soil or through water in riparian or wetland areas. The fruit is buoyant for up to nine days and can be deposited far downstream from parent colonies. Seeds can also be transported in contaminated soil found on heavy machinery and logging equipment. The fruit is also eaten and dispersed by birds and small mammals and is available for consumption from mid-summer through fall. Mile-a-minute seed can remain viable for at least six years, making eradication difficult.



- A. Triangular leaves and round leaflike structures, called ocreae.
- B. Unripe (green) and ripe (blue) fruit; also showing cuplike leaf structure.
- C. Barbed stem and petioles.
- D. Matted vines in severe infestation overtopping other vegetation.

All photos by Dave Jackson

Site

Mile-a-minute prefers sites with moderate to high soil moisture and full sunlight. As such, it is a rapid colonizer of forest edges, wetlands, roadsides, and streambanks. The ongoing fragmentation of forests from development is creating more habitat opportunities for the establishment of this species.

Control

Limited infestations of mile-a-minute can be pulled easily; take care to protect yourself from the sharp barbs by wearing a long-sleeved shirt and leather gloves. Before June, when the seed begins to mature, mile-a-minute can be pulled and left on site to dry. After seed emergence, pulled plants bearing fruit should be bagged and destroyed, as the fruit may continue to

Management Calendar

The management calendar for mile-a-minute emphasizes treatment before seed set. Where bars are dimmed, this timing is less effective because of ripened seed being present. When seed is present, it should be bagged and destroyed. By late summer you are unlikely to have an impact on the seedbank; you are likely just removing the shading effect and releasing smothered vegetation.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Preemergence Herbicide		■	■	■								
Emergence				■								
Postemergence Herbicide					■	■	■	■	■			
Pulling					■	■	■	■	■	■	■	
Flowering and Seed Ripening						■	■	■	■	■		

Treatment and Timing

Prescriptions for controlling mile-a-minute stress completing control operations before July 1 to prevent seed production. Trade names are provided to give specific information. Penn State Extension does not endorse or guarantee any product or recommend one product instead of another that might be similar. When products with the recommended active ingredients are available on Pennsylvania state contract, those trade names are provided below. Other formulations with identical efficacy may be available.

Treatment	Timing	Herbicide	Product Rate	Comments
Preemergence	Up to mid-March	Proclipse* (proflaminate) or Pendulum Aquacap* (pendimethalin)	16–36 ounces/acre or 64–128 ounces/acre	Selective preemergence applications of proflaminate or pendimethalin prevent mile-a-minute establishment and have little effect on plants that are already present. These herbicides have only preemergence activity and must be applied 2 to 3 weeks prior to germination to get moved into the soil by rainfall. Use preemergence herbicides where infestations are dense, then follow up in May with postemergence herbicides to treat missed areas.
Late Preemergence	March to April	Preemergence herbicide plus Plateau* (imazapic) or Oust XP (sulfometuron)	Preemergence herbicide plus 1 ounce/acre or 0.25–0.50 ounce/acre	Adding a very low rate of imazapic or sulfometuron to a preemergence treatment allows you to apply closer to or even after germination with minimal injury to desirable vegetation. Both of these herbicides are soil active and have postemergence activity. Seedling vines will be controlled and there will be a short window of residual activity to allow the less-soluble proflaminate or pendimethalin to move into the soil to prevent subsequent germination. Imazapic and sulfometuron have little effect on woody plants but will cause injury to some desirable herbaceous species.
Pre- and Postemergence	Early March through May	Plateau* (imazapic) or Oust XP (sulfometuron)	4–12 ounces/acre or 1–4 ounces/acre	Imazapic and sulfometuron have pre- and postemergence activity against mile-a-minute. Preemergence applications will cause less damage to nontarget species than postemergence applications. Sulfometuron has significant activity on a broad spectrum of herbaceous species and is best used where woody plant growth and forest regeneration is the objective. Imazapic can be used in specific herbaceous plantings, as some native warm-season grasses and forbs are tolerant.
Postemergence	May to June	Garlon 3A (triclopyr) or Aquaneat (glyphosate) plus Garlon 3A (triclopyr)	2 quarts/acre or 3 quarts/acre plus 2 quarts/acre	Use postemergence herbicides as the primary tool where infestations are not dense and as a follow-up to preemergence applications. Water-based triclopyr formulations will not injure grasses and other grasslike plants. Use the combination of glyphosate plus triclopyr for spot treatments. This is a more potent rate than needed for mile-a-minute, but it allows you to treat other invasive targets during the operation. A surfactant (e.g., Alligare 90) needs to be added. If using a different glyphosate product, be sure to check the product label to see if a surfactant is needed (some come premixed).

*Product contains non-crop-site label and is not approved for application on forested sites. Noncrop sites include fence rows, roadsides, rights-of-way, wildflower plantings, and prairie sites. Be sure to check the product label to ensure the site to which you are applying is listed.

ripen. Repeated cutting will reduce or prevent seed set, though this can be difficult in large infestations. Ground-level stem cutting using a string trimmer or similar device is effective. If some stem nodes remain after cutting, the vine will likely regrow.

A biological control agent that feeds solely on mile-a-minute exists, the mile-a-minute weevil (*Rhynoncomimus latipes*). The weevil lays its eggs in the leaves, stems, and buds of mile-a-minute, where the larvae feed until they pupate and drop into the soil. The insect's life cycle spans about one month, with several generations taking place over one growing season. Weevil infestation does not eradicate mile-a-minute. However, it does severely stunt the plant's growth. While sale of the weevil is regulated by USDA APHIS, it is legal to distribute infected plant material to new sites within the same state.

Preemergence herbicides prevent seeds from germinating, and several are effective against mile-a-minute. Proflaminate or the similar active ingredient pendimethalin can be used for selective preemergence suppression of mile-a-minute. These herbicides only affect germinating seedlings and do not injure established vegetation. To be effective, preemergence herbicides must already be present in the soil at the time of germination and therefore should be applied at least two to three weeks prior to expected germination. Application timing is a challenge, as germination is based on soil temperature, which varies from year to year. A general guideline is to apply preemergence herbicides by mid-March (or late February in the event of an early spring).

To make this application more flexible, add a low rate of imazapic or sulfometuron to the mixture. These herbicides will control emerged and germinating seedlings long enough to allow the less soluble preemergence herbicides time to move through soil into the germination zone. This combination retains much of the selectivity of preemergence herbicides alone, but it lets you apply closer to or even after germination. Addi-

tionally, these combinations are also effective against Japanese stiltgrass (*Microstegium vimineum*), which commonly occurs on the same sites as mile-a-minute.

Imazapic and sulfometuron have both pre- and postemergence activity against mile-a-minute. Both products control grasses as well as herbaceous broadleaf vegetation. Sulfometuron poses little risk to hardwood and conifer seedlings and can be applied directly over the top of existing woody vegetation except during periods of active new growth in the spring. Many native warm-season grasses, wildflowers, legumes, and woody plants are tolerant of imazapic. Be sure to check the herbicide label for specific species efficacy and rates.

Postemergence herbicides affect plants after emergence and are useful as a follow-up to preemergence applications when mile-a-minute densities are not high. Where mile-a-minute is growing among desirable grasses, it can be selectively controlled using water-based formulations of triclopyr. Triclopyr controls broadleaved plants, leaving grasses and grasslike plants largely intact. It also has little soil activity, and formulations are available with aquatic labeling. Where mile-a-minute is growing in mixed vegetation and a selective mixture is not an advantage, a solution of glyphosate plus triclopyr can be applied with a backpack sprayer as a spot treatment. The advantage of this mix is that you can treat any invasive targets you encounter during your operation.

Due to its extended seed viability, it is unlikely you can eradicate mile-a-minute from a site, even with repeated effort. An alternate approach is investing effort in suppressing mile-a-minute long enough to release desired native vegetation to shade out mile-a-minute, with trees being the best option for a long-term shading approach. Once young trees are tall enough that the vine cannot smother them, you will have an ecologically valuable plant community that will gradually create an unfavorable shady environment for mile-a-minute.

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