

LOWER HUDSON PARTNERSHIP FOR REGIONAL INVASIVE SPECIES MANAGEMENT

BEST MANAGEMENT PRACTICES

Mile-a-Minute

Prohibited Invasive Species (6 NYCRR § 575.3(d)(2)(lii))

Mile-a-Minute (Asiatic Tearthumb, Devil's Tail)

Persicaria perfoliata (*Polygonum perfoliatum*)

REGIONAL STATUS

Mile-a-Minute is Established in the Lower Hudson PRISM Region.

State law prohibits transporting, buying, selling or offering invasive Mile-a-Minute for sale or distributing plants, plant parts or seeds.

Lower Hudson PRISM recommends a focus on early detection and spread prevention in areas where the species has not yet established (refer to iMapInvasives or The Mile-a-Minute Project of the Hudson Valley for known locations)

INVASIVENESS

New York State has assessed this species' invasiveness as VH-Very High.

IMPACTS OF THIS SPECIES

Mile-a-minute vine can grow very rapidly, up to 15 cm/day, and can out-compete native species by blocking available light. This can be a particular threat to forest regeneration, plant diversity and wildlife habitat. Dense thickets of these thorny plants are also a problem for recreationists and homeowners. This vine will grow over anything in its path, including trees.

BACKGROUND INFORMATION

History of Introduction

Native to eastern Asia. It was introduced accidentally, with a shipment of Rhododendrons, to a plant nursery in York County, Pennsylvania in the 1930s and has spread to New York State from this location. Mile-a-minute vine is listed as a Noxious Weed in Pennsylvania.

Description

- Mile-a-Minute (*Polygonum perfoliatum* L.) is a vine in the Buckwheat family (Polygonaceae).
- An herbaceous annual vine with recurved barbs on stems and leaf petioles. Light green color of the leaves contrast well with surrounding plants during the growing season. Stems redden with age and persist into the winter with an orange/red color.
- Leaves:
 - Leaves are alternate, smooth, waxy, light green and shaped as an equilateral triangle 1-3" on a side with entire margins. Recurved barbs on petiole. Round ocrea at stem nodes.

- **Flowers:**

- Flowers begin to bloom in summer and are white, small and inconspicuous.

Reproduction and Spread

- Reproduction is by seed. Fruit are deep blue and arranged in clusters. Immature green fruit may contain mature seeds.
- Seeds may be transported by mammals and birds. Fruit floats and may be transported downstream.
- Frequently mile-a-minute has been reported to be transported in ornamental/landscaping potting soil.

Habitat

- Mile-a-minute exhibits the most vigorous growth in upland sunny locations. However it has been observed growing in shaded lowland locations, floodplain, edge, open meadow and roadside locations.

Habitat in which Species is found within the Lower Hudson PRISM

Mile-a-minute has been found throughout the LH PRISM in a variety of habitats.

CONTROL INFORMATION

Biological Control

Rhinoncomimus latipes – A stem boring weevil is available as a biocontrol for Mile-a-Minute. The weevil lays eggs in stem nodes and adults feed on the leaf tissue. It is effective at patch suppression and is reported to have eliminated patches in New Jersey. The weevil is likely to be found at mile-a-minute infestations throughout the LHPRISM.

Manual or Mechanical Control

Pulling / Digging Up

As an annual, the shallow root systems are very easy to pull. Pulling is easiest earlier in the year before the spines have hardened. If pulling when fruit is present, care should be taken as the fruit drops readily.

Mowing

Mowing alone does not fully control the plant. Even late in the season, after mowing it is capable of bolting and producing seed.

Girdling

Not applicable

Prescribed Fire

No information available

Prescribed Grazing

No information available

Soil Tilling

No information available

Mulching

No information available

Solarization

No information available

Hot Foam Spray

No information available

Chemical Control

Foliar Spray

Low concentrations of glyphosate, 0.5%, are effective in killing mile-a-minute. The waxy leaf cuticle makes it hard to get the herbicide to stick to the leaf. Surfactants should be added to spray mixture. Low pressure and small droplet size nozzles are recommended, 14 psi with 0.2gpm nozzle (yellow).

Cut Stump

Not applicable

Basal Bark

Not applicable

Hack-And-Squirt

Not applicable

Stem Injection

Not applicable

Pre-Emergent Spray

Most pre-emergent herbicides for broadleaf weeds are effective.

Other

Experimental Projects

SUMMARY OF BEST MANAGEMENT PRACTICES

For small infestations hand pulling is the most effective method. For larger infestations, hand pulling is effective but requires significant labor output making the option less feasible. Herbicides applied at low rates are very effective and typically the most feasible method for large patch control.

It is likely that the biocontrol weevil is already present at most locations within the LHPRISM. Before conducting control of large patches check for weevil presence. The widespread nature of the plant in our region suggests that in some instances (ie large populations in close proximity to other populations) it may be best to rely on the biocontrol for suppression before implementing control efforts.

Disposal Methods

- Plant material will not reproduce if piled. Seed bearing material should be bagged and disposed of in appropriate landfill.

REFERENCES

(Adapted from NYSDEC 2^{ee} Recommendation Request for Mile a Minute)

Controlling Mile-a-minute Weed with Pre-and Postemergent Herbicides (Hartwig, Kuhns & McCormick).

Hartwig, Kuhns & McCormick conducted a series of tests within regenerating forests, roadsides and right-of-ways in 1992, 1993, and 1994 in which pre-and postemergent herbicides were evaluated for control of mile-a-minute. Relevant to the 2^(ee) Recommendation requested, they found:

- Glyphosate provided very good to total postemergence control.
- Oxyflourfen provided almost total control when applied preemergence, and excellent control when applied postemergence.
- Triclopyr provided good to total postemergence control.

Plant Conservation Alliance Alien Plant Working Group

<http://www.nps.gov/plants/alien/fact/pope1.htm>

Glyphosate (e.g., Roundup® for upland areas and Rodeo® for wetland applications), applied at a low rate will probably be effective in killing mile-a-minute weed. However, because this plant is not currently listed on the product labels for Roundup® or Rodeo®, treatments with these products is permissible only with prior approval of the State Department of Agriculture where the application will take place [FIFRA 1997, Section 2(z)(ee)].

From: **Exotic Pests of Eastern Forests, Conference Proceedings** - April 8-10, 1997, Nashville, TN.
Edited by: Kerry O. Britton, USDA Forest Service & TN Exotic Pest Plant Council

<http://www.invasive.org/symposium/mccormic.html>

Larry H. McCormick and C. Fagan Johnson, Jr. - Professors of Forest Resources, Pennsylvania State University, University Park, PA 16802.

Control of Mile-A-Minute Weed

While it is unlikely mile-a-minute weed can ever be eradicated, control measures are needed to limit its further spread and interference with desired plants. Until recently, little information existed on the control of mile-a-minute weed. Mechanical control, i.e., mowing, hand-pulling, and cultivating, appears feasible for small infestations; however, chemical control is generally needed for large scale control.

Preliminary studies by Mountain (1989) indicated that several herbicides were effective in controlling mile-a-minute weed. These herbicides included Attrex 4L (atrazine), Velar L (hexazinone), Roundup (glyphosate), Oust 75W (sulfometuron methyl), and Pursuit (imazethapyr).

Similarly, McCormick and Hartwig (1995) showed that a number of herbicides commonly used in forestry were effective in controlling mile-a-minute weed. Pre-emergence treatments of Arsenal (imazapyr), AAtrex Nine-O, Velpar L., and Oust 75W, were very effective in controlling mile-a-minute weed as were post-emergence treatments of Roundup and Arsenal.

Studies conducted by Hartwig (1997) and Kuhns and Harpster (1997) found that AAtrex 4L, Goal 1.6E (oxyfluorfen), Oust 75W, Princep 4L (simazine), and Ronstar 50W (oxadiazon), applied as a pre-emergence treatment, provided effective control of mile-a-minute weed, and that post-emergence applications of AATrex 4L, Finale 1S (glufosinate), Garlon 3A (triclopyr), Goal 1.6E, Oust 75W, Ronstar 50W, and Roundup, were effective.

Of the herbicides found to be effective in controlling mile-a-minute, only Goal 1.6E has been specifically labeled for mile-a-minute weed control in Pennsylvania. Currently, there are no known effective biological controls for mile-a-minute weed.

USDA Forest Service Mile-a-Minute Pest Alert

http://www.na.fs.fed.us/spfo/pubs/pest_al/mm/pa_mam.pdf

Control & Management (Herbicides): Glyphosate applied at a low rate will probably be effective in killing mile-a-minute weed.

Virginia Department of Conservation and Recreation, Division of Natural Heritage

<http://www.dcr.state.va.us/dnh/fspope.pdf>

Control

Herbicides may be used as an alternative in heavily infested areas. Spot applications of biodegradable glyphosate herbicides are recommended before mile-a-minute goes to seed in early August. As glyphosate is a nonselective herbicide which affects all green vegetation, it should be used sparingly to avoid contact with desirable vegetation which may be growing near the mile-a-minute.

Global Invasive Species Database

<http://www.issg.org/database/species/ecology.asp?si=582&fr=1&sts=>

Compiled by: National Biological Information Infrastructure (NBII) and Invasive Species Specialist Group (ISSG)

Chemical: Studies have shown that pre-emergence applications of herbicide are most effective in controlling mile-a-minute weed, with the herbicides Oust, Velpar L, Arsenal, Aatrex, Pursuit and Pursuit Plus being the most effective. Roundup and Arsenal are best for post-emergence control (McCormick and Hartwig, 1995). Herbicidal soap, helps burn back foliage of *P. perfoliatum*. Because these products do not have the systemic (i.e., travels to the roots) ability of herbicides like glyphosate, they must be reapplied all season long to any regrowth. Glyphosate (e.g., Roundup for upland areas and Rodeo for wetland applications), applied at a low rate will probably be effective in killing the weed.

Green Industry News <http://www.agnr.umd.edu/users/cmrec/art3.htm>

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Chemical control

Mile-a-Minute leaves do not wet easily, so a surfactant may need to be added to an herbicide. Two broad spectrum, non-selective herbicides are glyphosate (Round-up and other brand names) and Finale. The seed from this weed germinates in late spring. Applying a pre-emergence that is effect against broad leaf weeds in late spring will prevent the annual germinating seeds from emerging.