



INVASIVE PLANT FACT SHEET

Multiflora Rose

(*Rosa multiflora*)

Photo credit: Skylure Templeton

Background

Multiflora rose (*Rosa multiflora*) was originally introduced into the United States from east Asia in 1866 as rootstock for ornamental roses. It was also planted as a living fence, for erosion control, and to provide food and cover for wildlife. It is listed as a “Class B” noxious weed by the State of Pennsylvania, a designation that restricts sale and acknowledges a widespread infestation. Like other shrubs with attractive flowers, multiflora rose persists in our landscape partly due to citizen unwillingness to remove plants perceived to have aesthetic value or value to pollinators and other wildlife. However, the dense, monocultural thickets created by multiflora rose degrade natural environments and reduce native plant and wildlife diversity.

Description

Size: While each individual stem, or cane, can grow up to 15 feet in length, they usually arc toward the ground and take root, a process called “layering,” creating dense thickets 6–10 feet tall. After establishment, individuals are capable of increasing their size by 1–2 feet a week during midsummer.

Leaves: Pinnately compound leaves have between five and nine leaflets and a uniquely fringed base, or stipule, where it connects to the stem. At 1–2 inches long, each leaflet is football shaped and noticeably toothed, or serrated, along the edges. Usually green, but new growth and the stipules can be spotted with pink or red.

Flowers: From May to June, many clusters of showy, fragrant blossoms emerge along the canes. Flowers have five petals, are white or pale pink, and have bright yellow pollen.

Stems: The canes are vibrant olive green year-round, making them easy to distinguish from native roses, raspberries, and blackberries. Each cane is round and bears the characteristic rose prickles, or thorns.

Fruit: Rose fruits, called hips, replace the flowers in midsummer and persist through winter, often into the next growing season. They are small, shiny, and initially a showy red but darken over time.

Look-alikes

While very similar in appearance to other roses, both native and exotic, multiflora rose is unique in having fringed stipules at the base of the leaf. Native black raspberry (*Rubus occidentalis*) and Allegheny blackberry (*Rubus allegheniensis*) have thorns, similar growth habits, and a tendency to form thickets, but they usually have red or purplish canes rather than the consistent olive green of multiflora rose. Another invasive cane-forming shrub that could be mistaken for rose is wineberry (*Rubus phoenicolasius*), but its canes are thickly covered in pink hairs rather than prickles.



- A. Flowers and flower buds
- B. Flower buds and last year's hips
- C. Leaf showing fringed stipule
- D. Hedge growing at forest edge
- E. Cane infected with rose rosette disease

Photos by Skylure Templeton and Dave Jackson

Dispersal

Multiflora rose spreads through seed, root sprouting, and layering. Layering occurs when a cane comes in contact with the soil, produces roots, and becomes functionally independent from the parent plant. The hips are available to birds almost continuously, as last year's fruits are commonly found alongside this year's flowers. Once deposited in a new location via

bird droppings, the seeds can persist and remain viable in the soil for up to 20 years, germinating when competing vegetation is disturbed. Though the first year or two of growth is usually quite slow, there is often an explosion of growth following this brief period of establishment, and the plant will reproduce aggressively as well as expand via layering.

Management Calendar

The management calendar for multiflora rose is quite flexible because the foliage emerges early and falls late. Stem treatments to intact and cut stems provide a year-round window of opportunity.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Leaf Out												
Flowering and Seed Ripening												
Foliar Herbicide Application												
Basal Bark and Cut Stem Treatments												

Treatment and Timing

Multiflora rose is easy to find year-round due to its vibrant green stems. Basal bark and cut stem treatments can be made anytime the weather permits. Product names reflect the current Pennsylvania state herbicide contract; additional brands with the same active ingredients are available.

Treatment	Timing	Herbicide	Product Rate	Comments
Foliar	Mid-May to onset of fall color	Aquaneat (glyphosate) plus Garlon 3A or Vastlan (triclopyr amine)	3 quarts/acre plus 2 quarts/acre or 1.5 quarts/acre	A combination of glyphosate plus triclopyr is effective against a broad spectrum of woody species. Additionally, this mixture reduces risk to nontargets because it has practically no soil activity and the herbicide products are safe for aquatic applications. Garlon 3A and Vastlan are both triclopyr amine formulations but have different active ingredient concentrations. 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.
Basal Bark	Year-round	Pathfinder II or Garlon 4 Ultra (triclopyr ester)	Ready-to-use or 20%, 1:4 in basal oil	Oil-based herbicides penetrate the plant's bark and travel systemically through the plant. Basal bark applications wet the entire circumference of the lower 12 to 18 inches of the stem. Aim for full coverage on stems without creating excessive runoff.
Cut Stem	Year-round	Pathfinder II or Garlon 4 Ultra (triclopyr ester)	Ready-to-use or 20%, 1:4 in basal oil	Cut stem treatments with oil-based triclopyr ester herbicides are applied to the cut surface as well as the bark of the stem and can be applied up to one month after the stems are cut. An oil-soluble dye should be added to improve tracking, avoid skips, and duplicate treatment.
		Aquaneat (glyphosate) or Garlon 3A or Vastlan (triclopyr amine)	50%, 1:1 mix with water	Unlike the oil-based herbicides, water-based treatments are only applied to the cut surface and must be made immediately after the stems are cut. A water-soluble colorant should be added to improve tracking, avoid skips, and duplicate treatment.

Site

This shrub thrives on poor growing sites. It prefers full sun to moderate shade and is often found in abandoned fields, hedgerows, forest edges, and roadsides. It can also survive in the shade of a mature forest. While it tolerates most sites regardless of light, moisture, salinity, or pH, it is not tolerant of extreme cold and will die below -28°F. Its leaves are also rarely consumed by native invertebrates and the leaf litter it creates can shift the chemical composition of the decomposing leaf

litter, further enhancing this shrub's dominance, particularly in riparian areas.

Control

Multiflora rose is very difficult to completely eradicate both individually and on a landscape-wide scale. They are prolific seeders and also aggressively expand through layering. Their seed bank can continue to produce new plants for up to 20

years, and fragments of the root system left behind can sprout. Like prescriptions to address other invasive plant invasions, plan to “save the best.” In other words, plan to work from the least to the most invaded areas, or in areas where there is desirable native vegetation. This will maximize uninvaded acres, which is not only of higher ecological value but also creates a much greater sense of accomplishment. Because its seeds are dispersed by birds, new invasions can and will occur, but spot removal of isolated individuals, before they multiply, is a part of any invasive plant maintenance program.

The efficacy of and methods for mechanically controlling multiflora rose depend on the intensity of invasion and age of the population. Small populations of young plants are not difficult to pull, taking care to use protection against the thorns. Be sure to pull the entire root system to prevent resprouting. Similarly, using a brush mower to cut larger infestations will temporarily set back the population and stress the plants, but it will not eliminate them and resprouting will result.

Using goats as a treatment will have similar results as a brush mower, leveling all nontree vegetation in the target area. The use of goats can be very expensive, and all costs (renting the animals, installing and removing fences) should be considered. All mechanical methods need to be either followed up with herbicide applications or repeated throughout the season as new growth emerges for multiple years until the stored energy within the root system is exhausted and the thicket dies. Even after the adult plants die, the seed bank will still need to be addressed, necessitating a long-term management plan.

Biocontrol agents do exist for multiflora rose, but they are generally difficult to apply in a targeted fashion and will often affect related nontarget vegetation of the same genera or family. Rose rosette disease, also called witches-broom, is a mite-vectored viral infection of the growing tips that results in stunted, nonfunctional growth that is often a vibrant red color. While the virus will eventually result in death of the plant, it can take years, making this method unreliable as a form of consistent

treatment. The disease also infects other native and exotic species of the rose family, including other roses, cherries, plums, apples, and pears. While two nonnative and naturalized insects, the rose stem girdler beetle (*Agrilus cuprescens*) and the rose seed chalcid wasp (*Megastigmus aculeatus*), do kill individual plants, their populations are not robust enough to produce a widespread population reduction. As such, the presence of these controls is more of a positive but chance event than a true treatment.

Herbicides are commonly used to control multiflora rose, especially in large infestations. Initially mowing or otherwise cutting large infestations is a good preparation step before herbicide applications; it stresses the plants, results in less overall plant area to treat, and makes the thicket much easier to navigate for a foliar application. After mowing, wait for knee-level regrowth before treating with herbicide. Formulations containing glyphosate, triclopyr, and metsulfuron methyl are all effective against rose and available under many brand names. While foliar sprays can be done anytime during the growing season, all of these chemicals will also harm nontarget herbaceous plants and trees if applied to their leaves, so care should be taken to avoid overspray.

Cut stem and basal bark treatments can be implemented throughout the year, giving you scheduling flexibility. Water-based solutions of glyphosate or triclopyr at a 1:1 ratio should be applied immediately after cutting the stems while the cut is still fresh and the plant's vascular system is still active. Oil-based products (e.g., triclopyr ester) can be applied anytime after cutting as long as you can find the cut stems, or as a basal bark treatment where the stems can be accessed. The herbicide solution is applied directly to the cut surface or stem using a low-pressure hand-held sprayer, though a backpack sprayer is preferred for large infestations. Conducting stem treatments during the dormant season will lessen the chances of killing nontarget vegetation.

Prepared by Skylure Templeton, Art Gover, Dave Jackson, and Sarah Wurzbacher. Reviewed by Norris Muth, Amy Jewitt, and Andrew Rohrbaugh.

extension.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

This publication is available in alternative media on request.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

Produced by Ag Communications and Marketing
© The Pennsylvania State University 2020
Code EE0343