OHIO STATE UNIVERSITY EXTENSION

AGRICULTURE AND NATURAL RESOURCES FACT SHEET F-103-14

Controlling Non-Native Invasive Plants in Ohio Forests: Privet (*Ligustrum* spp.)

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Non-native privets compete aggressively with native plant species, and they degrade wildlife habitat. After privets become well-established, control requires substantial investment of manpower and resources; therefore, early detection and rapid response are the most effective means of keeping this species under control. Early establishment of privets often occurs along roadsides, stream corridors and trails. Subsequently, privets invade adjacent forests and fields. It is essential to regularly scout for and control these species, especially prior to and shortly after a harvest or other disturbance activity.

Figure 1. Multi-stemmed privet

Privets are deciduous to semi-evergreen, multi-stemmed shrubs with spreading branches that project outward at near right angles (Figure 1). They were first introduced to the U.S. in the mid 1800s from China, Europe and North Africa for use in landscaping. Since privets thrive in full sunlight and tolerate heavy shade, they are aggressive invaders of a variety of sites including bottom land forests, fencerows, fields and rights-of-way. Dense thickets of privet can form and crowd out desirable native woodland species. Exotic privets leaf out early in the spring and retain their leaves through early winter, giving them a competitive advantage over native plants. Privets aggressively spread by seeds that are primarily transported by birds.

Chinese (*L. sinense*) and European (*L. vulgare*) privets are considered a group in this fact sheet since they are difficult to distinguish from each other, grow in similar environments and respond similarly to control techniques.

Identification

Privets are multi-stemmed shrubs reaching heights of up to 16 feet, with stems that can grow as large as 10 inches in diameter. To identify Chinese and European privet, look for a shrub with the following characteristics:

- **Leaves:** Small (0.8 to 1.6 inches) with smooth margins (without teeth), opposite and at near right angles to the stem (Figure 2). Shiny green above and pale green beneath. Chinese privet has a hairy mid-vein on the underside of the leaf while the leaves of European privet are hairless.

Figure 2. Opposite leaves and branching pattern of privet in flower.

- **Stems:** Arrangement is opposite. Bark is brownish-gray to gray and slightly rough with light dots (lenticels). Spurs or sharp pointed branches are often present (Figure 3). Twigs are gray green in color and slightly hairy.
- **Flowers:** Abundant small, fragrant white flowers appear May to June. Arranged in clusters at or near the tips of branches. Stamens extend above the petals on Chinese privet and are shorter than the petals on European privet.

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Figure 3. Spurs or sharp pointed branches on privet.

- **Fruits:** Form in late summer as clusters of pale green ovoid drupes at or near the branch tips. Ripened fruit is dark purple to nearly black in late fall and persist into winter (Figure 4). Fruit is mildly toxic to humans and should not be eaten by humans.

Figure 4. Prolific fruit production on privet.

Control Methods

When trying to control privet, there are several methods that may be considered. The method applied depends on the size of the plants, the size of the infestation and a landowner's comfort level with the control method. For a more detailed description of the control methods recommended in this fact sheet refer to the OSU Extension fact sheet titled, "Controlling Undesirable Trees, Shrubs, and Vines in Your Woodland, F-45-97."

Mechanical Control

Infestations of small plants can be pulled, dug or cut. Pulling or digging of small plants is ineffective if all roots are not removed. These treatments are most effective when the soil is moist. Cutting is most effective when initiated in early summer when underground food reserves are at their lowest. Plants should be cut as close to the ground as possible. Since food reserves must be eliminated, cutting must be repeated multiple times over several years to achieve control.

Mechanical control alone is usually not a completely effective method of controlling medium to large privet shrubs. Simply cutting the shrub off at the base will cause prolific sprouting and increase the number of stems. An effective strategy for controlling large privet shrubs will target both the shrub and the root system which eliminates the potential for sprouting. This can be achieved using herbicides.

Foliar Spraying

Leaves of the targeted plant should be covered uniformly with a dilute herbicide, but not to the point of runoff (Table 1). Over-application of herbicides can result in unacceptable damage to non-targeted plants.

Privets stay green into early winter when most native plants have gone dormant. Foliar applications of non-residual herbicides (e.g., glyphosate products) can be used at this time with little to no impact to non-target species especially after the first hard frost.

Foliar application of herbicides to tall shrubs should be avoided as it can increase the risk of the applicator's exposure to herbicides and increase damage to non-target species from herbicide over-spray. To avoid this, large privet shrubs can be controlled by cutting them at the base and allowing the shrub to re-sprout. Time applications when plants have grown new foliar tissue that is knee to waist high.

When treating privets in streamside areas or other wet habitats it is necessary to use an herbicide that is labeled for aquatic use, such as Rodeo or Accord.

Basal Spraying With Herbicide

Another control option for treating large privet shrubs is to apply an herbicide and oil mixture to the base of uncut privet stems (Table 2). For a basal herbicide application to be effective, the lower 10–18 inches of all stems in the clump must be completely covered, ensuring that the stems are wet but not to the point of runoff. However, due to the dense nature of privet shrubs it is often difficult to achieve complete coverage. Basal bark treatments should only be applied when the areas to be treated are dry and not frozen. To avoid injury to non-target plants, care should be taken to avoid over-spray.

Cut Stump Herbicide Treatment

Another effective method for controlling large, undesirable woody shrubs is the cut stump treatment. This method involves cutting the shrub off close to the ground and applying an herbicide to the cut surfaces (and sometimes the bark) with a spray bottle or paintbrush.

Both water-carried and oil-carried herbicides can be used for cut stump applications (Table 3). Herbicides

carried in water should be applied to the outer 1/3 of the top of the stump within minutes of making the cut.

Oil-soluble herbicides are not as time-sensitive if they are applied before resprouting. These mixtures are applied to the entire top and sides of the cut stems but not to the point of runoff. Applications can be made at any time of the year as long as the stumps are dry and not frozen. Control is usually most effective when applications are made late in the growing season. Dormant season applications have also proven to be effective.

Environmental Note: Many of the herbicides recommended for basal or cut stump applications are labeled to be mixed with a penetrating basal oil, diesel fuel, fuel oil (No. 1 or No. 2) or kerosene as their carrier agent. The choice to utilize non-petroleum basal oil (particularly methylated seed oil) instead of petroleum-based oils will result in a more environmentally friendly practice which also does not expose the applicator to offensive petroleum fumes.

Summary and Disclaimer

To protect yourself, minimize harmful effects to the environment and maximize the potential for successful control, read and closely follow all herbicide label instructions including personal protective equipment (PPE), mixing, application equipment and maximum per-acre rates allowed. Remember, "the label is the law," and any use of an herbicide that is inconsistent with the labeling is prohibited.

Follow-up treatments are often necessary to achieve satisfactory control of privets. Monitor treated sites at least two years to determine if control is achieved. Often, shrubs resprout and new seedlings germinate which will necessitate follow-up treatments.

Herbicides, like all pesticides, are approved (labeled) for specific uses by the Environmental Protection Agency. Approved uses and application methods are listed and described in the pesticide labeling. The herbicides listed in this fact sheet were appropriately labeled at the time of publication. Because pesticide labeling may

Table 1. Herbicides recommended for foliar treatment of privet. Apply solution of herbicide in water as directed on label. Apply when leaves are green and actively growing.

Herbicide Common	Example Brand Names	Comments
Glyphosate	For upland, non-aquatic sites: Roundup Pro, Razor, Glyphomax Plus, Roundup-Original or other glyphosate products with 41–54% active ingredient.	Use 2–3% (vol/vol) or 2.6–3.8 fl oz in enough water to make one gallon of spray mixture
	For stream sides or other sites near water: Accord, Rodeo, Aqua Neat or other glyphosate products with 41–54% active ingredient that is labeled for use in or around aquatic sites.	Use 2–3% (vol/vol) or 2.6–4 fl oz in enough water to make one gallon of spray mixture. Add a **nonionic** surfactant at rates recommended on label.
Triclopyr	Garlon 3A*	Use 2–4% (vol/vol) or 2.6–5.3 fl oz in enough water to make 1 gallon of spray mixture. Add nonionic surfactant.
Imazapyr**	Arsenal AC	Use 0.5–1% (vol/vol) or 0.7–1.3 oz in enough water to make one gallon of spray mixture. Add nonionic surfactant.
*Wear proper eye protection during application, as Garlon 3A may cause irreversible eye damage.		
**Imazapyr products have soil activity and can cause injury to non-target plants.		

Table 2. Herbicides recommended for basal spraying of privet.

Herbicide Common	Example Brand Names	Comments
Triclopyr	Garlon 4, Garlon 4 Ultra	Use 20–30% (vol/vol) or 26–to 38 fl oz in enough oil carrier to make one gallon of spray mixture.
Imazapyr**	Stalker, Chopper	Use 6–8% (vol/vol) or 8–10 fl oz in enough oil carrier to make one gallon of spray mixture.
**Imazapyr products have soil activity and can cause injury to non-target plants.		

Table 3. Herbicides recommended for cut stump treatment of privet.		
Herbicide Common	**Example Brand Names**	**Comments**
Glyphosate	For upland, non-aquatic sites: Roundup Pro, Razor, Glyphomax Plus, Roundup-Original or other glyphosate products with 41–54% active ingredient.	Use 20–50% (vol/vol) or 26–64 fl oz in enough water to make one gallon of spray mixture. Apply immediately after cutting. Delays in application may result in reduced performance.
	For stream sides or other sites near water: Accord, Rodeo, Aqua Neat or other glyphosate products with 41–54% active ingredient that is labeled for use in or around aquatic sites.	Use 20–50% (vol/vol) or 26–64 fl oz in enough water to make one gallon of spray mixture. Apply immediately after cutting. Delays in application may result in reduced performance.
2,4-D + Picloram	Pathway, Tordon RTU	This is a ready-to-use product. Apply undiluted immediately after cutting. Delays in application may result in reduced performance.
Triclopyr	Garlon 3A*	Apply undiluted immediately after cutting. Delays in application may result in reduced performance.
	Garlon 4 Ultra	Use 20–30% (vol/vol) or 26–38 fl oz in enough oil carrier to make one gallon of spray mixture.
Imazapyr**	Chopper, Stalker	Use 6–8% (vol/vol) or 8–10 fl oz in enough oil carrier to make one gallon of spray mixture.
*Wear proper eye protection during application, as Garlon 3A may cause irreversible eye damage.		
**Imazapyr products have soil activity and can cause injury to non-target plants.		

change at any time, you should verify that a particular herbicide is still labeled for your intended use. At the time of this writing, copies of most herbicide labels and MSDS could be obtained online at the Crop Data Management System web site (**cdms.net**). Others are available through the individual manufacturer's web sites. OSU Extension, the Ohio Division of Forestry, the Appalachian Ohio Weed Control Partnership and the authors do not endorse any of the products mentioned and assume no liability resulting from the implementation of these recommendations.

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