Managing Japanese Barberry in Natural Areas

BY CELESTINE DUNCAN

IDENTIFICATION AND SPREAD

Japanese barberry is a compact, deciduous, spiny shrub from two to eight feet tall. Branches have a single sharp spine at each node. Leaves are oval, bluish-green to reddish and are ½ to 1 ½ inches long. Pale yellow flowers about ¼ inch in diameter hang in clusters along the stem (Figure 2). Fruits are bright red berries about 1/3 inch long and mature from late summer to fall, persisting on stems through winter (Figure 3). Japanese barberry reproduces primarily by seed that is dispersed by birds and small mammals. Most seed germination occurs the growing season following seed maturity. Vegetative reproduction occurs when branches touching the ground root and form new plants.
Japanese barberry infestations are favorable habitat for blackleg ticks, providing a humid, buffered microclimate that increases tick survival. Ticks can transmit several diseases including Lyme disease, Borrelia burgdorferi, anaplasmosis, and human babesiosis. The shrub also provides nesting areas for white-footed mice and other rodents, which are primary sources for larval ticks’ first blood meal, and reservoirs for Lyme disease. The number of blackleg ticks averaged 120 per acre in barberry infested forests compared to 10 per acre in forests without barberry present. (Image from Ward et al. 2013b).

**SIDEBAR 1.**

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**IDENTIFICATION AND MANAGEMENT OF JAPANESE BARBERRY**
- Comparing Effectiveness and Impacts of Japanese Barberry Control Treatments and Herbivory on Plant Communities
- Japanese barberry control methods

**MANAGEMENT**

Barberries generally leaf-out earlier and retain their leaves longer than many native shrubs. This trait aids in early detection and management. The most effective landscape-level control for Japanese barberry is early detection and control of small, newly expanding populations.

**Herbicides**

**Foliar Spray Method:** Best suited to large Japanese barberry infestations. Applications should be made with a coarse spray to reduce drift and thoroughly wet all leaves.

Remedy® Ultra herbicide and Vastlan™ specialty herbicide are selective for broadleaf plants and can be applied to barberry in areas with a desirable grass understory. Field trials conducted from 2004 through 2006 showed that either Remedy at 0.5 to 1 percent solution or Vastlan at 1 gallon per acre (1 percent solution) plus 0.5 percent non-ionic surfactant, provided 100 percent control of Japanese barberry one year after application.

**Cut Stump Method:** Cut stump treatments selectively control individual Japanese barberry plants and can be used as long as the ground is not frozen. Cut barberry stems horizontally at or near ground level. Immediately apply a 25 percent solution of either Remedy® Ultra herbicide mixed with water to the cut stump.


**Manual/Mechanical Methods**

**Hand Pulling:** Japanese barberry is one of the first plants to leaf out in spring making it easy to distinguish from other shrubs. Hand digging with a shovel or weed wrench effectively removes individual Japanese barberry plants and can be done any time ground is not frozen. Wear heavy gloves to protect hands from spines. Remove as much of the root as possible since barberry can resprout. Barberry plants with fruits present should be bagged.

**TABLE 1. Rates for Percent Herbicide Solution**

<table>
<thead>
<tr>
<th>Water (gallons)</th>
<th>Fluid ounces of herbicide to add to water for the % solution required.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1%</td>
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<tr>
<td>1</td>
<td>1.3</td>
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<tr>
<td>2</td>
<td>2.6</td>
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<td>3</td>
<td>3.8</td>
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<td>4</td>
<td>5.1</td>
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<tr>
<td>5</td>
<td>6.4</td>
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<tr>
<td>10</td>
<td>12.8</td>
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<tr>
<td>25</td>
<td>32 (1 quart)</td>
</tr>
<tr>
<td>50</td>
<td>64 (2 quart)</td>
</tr>
<tr>
<td>100</td>
<td>128 (1 gallon)</td>
</tr>
</tbody>
</table>

Glyphosate (Accord® XRT II herbicide and other trade names) is a non-selective herbicide that may cause significant injury to desirable grasses and broadleaf vegetation. If damage to desirable non-target vegetation can be tolerated, apply a 2 percent solution of glyphosate in water (Table 1) plus a 0.5 percent non-ionic surfactant. [See Table 1. Rates for percent herbicide solution]
and removed from the site to prevent establishment from seed. Minimize soil disturbance during the removal process to reduce invasion of other undesirable plants.

**Mowing/Cutting:** Small barberry populations or those growing in sites where herbicides cannot be used can be mowed or cut to prevent seed production. Cutting at least one time per growing season will stop seed production; however, even repeated cutting may not kill established plants. Hand-cutting established populations is difficult and time consuming due to the long arching stems and prolific thorns.

**Directed flame/torch:** Field studies have shown that individual barberry plants can be controlled with direct intense heat from a propane torch or flame weeder. Basal buds on the plant crown must be killed to control the plant. A two-step process that combines fire or mowing to reduce above ground biomass followed by herbicides to control resprouts can be effective. Labor costs for follow-up treatments with the torch were at least four times higher than for herbicide applications, although both were equally effective at controlling barberry (Ward et al. 2013a).

**REFERENCES:**


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**Acknowledgments:**

State restrictions on the sale and use of Remedy Ultra and Accord CRT II apply. Consult the label before purchase or use for full details.

Always read and follow label directions.

Active ingredients for products mentioned in this article. Product (active ingredient): Accord XRT II (glyphosate); Remedy Ultra (triclopyr-ester); Vastlan specialty herbicide (triclopyr-amine).