

Cut Your Grapevines!!!!

Wild grapevines (*Vitis* spp.) are a major problem for forest landowners in many parts of Pennsylvania. A few years after a timbering operation, it is not unusual to find large numbers of grapevines growing in young stands of regeneration on good hardwood sites where the faster-growing, more valuable timber exists. Often the reproduction in hardwood stands is excellent, but the presence of grapevine can convert portions of these excellent stands to a complete mass of grapevine.

Grapevines damage timber by breaking tops and limbs, twisting and bending the tree bole, shading the hardwood leaves, and adding unsupported crown mass that makes the tree susceptible to wind, ice, and uprooting damage. They will eventually kill a tree. Once grapevines get into tree crowns, especially in young stands, the potential for future production of quality timber is severely reduced.

Growth and Characteristics

Grapevines are similar to other woody plants in that each year a growth ring is added to the ring-porous stem. If vines are wounded just before or during the growing season, they characteristically bleed sap. Their growing season lasts from early spring to late summer.

Grapevines are intolerant of shade. Prolonged shade reduces growth and will kill the vines. Grape will sprout prolifically when cut, the stems produce epicormic side branches when exposed to sunlight, and the vines root or layer easily.

Grapevines are supported by tendrils that enable the vines to climb and advance on vegetation. Shoot growth begins later in the growing season than that for other woody plants. Shoot elongation starts slowly for several weeks, followed by periods of rapid growth. While shoot growth is rapid, stump sprouts can grow 15 feet a year, diameter growth is slow. A 50-year-old vine may have a diameter at ground line of only 1.5 inches.

Control

Grapevine control must be consistent with forest management objectives. If the objective is to grow high quality timber, then elimination of all grapevines is usually recommended.

Most grapevine problems exist on the better timber sites. Grapevines become a problem when timber-harvesting practices permit a lot of sunlight to reach the forest floor. The keys to grapevine control are:

1. **Mechanical (cutting)**
2. **Chemical (herbicides)**
3. **Canopy shade**

A combination of these three methods will result in eliminating the grapevine from most forest stands.

1. Mechanical

Lopping shears, brush axes, machetes, or handsaws are used to sever the vine in two places. First, cut the vine once at head to shoulder height (4-5 feet). This aids in visually locating previously cut vines. Second, follow the vine back to the spot of rooting, and cut again just above the ground line. **Care should be taken that every vine, no matter how small, be severed.** Just one uncut vine can quickly spread into surrounding trees and start the problem anew.

Safety is concern #1 when working on a vine control project. Do not use chainsaws to cut vines, as the vines do not offer a solid, steady target. Vines tend to bounce and tangle with chainsaws. A much safer and extremely effective tool for cutting vines is found in the new "razor tooth" type hand pruning saw. A preferred model is the 13" saw with a wooden handle. Most vines can be quickly cut with two or three pull strokes with this saw. Personal protection in the form of leather gloves, safety eye wear, and a hard-hat are highly recommended.

2. Chemical treatment

Several of the herbicide and treatment techniques that have been used for grapevine control include¹:

Weedone 170 (2,4-D)

Mixed with fuel oil following the label instructions and applies as a basal spray to the base and lower 12-18 inches of uncut stems in mid-April, mid-August, mid-September, or early March. Both vine ends of layered grapevine should be treated.

Mixed herbicide with fuel oil applied to cut grapevine stumps in early March or mid-September (when the stumps are not bleeding sap).

Tordon 101R applies undiluted as a basal spray to cut surfaces of grapevine stumps in early March or mid-September (stumps not bleeding sap).

Roundup (Glyphosphate) mixed as a 20% solution of chemical and water applied as a basal spray to cut grapevine stumps in early March or mid-September (stumps not bleeding sap).

Other Ground mist blowing of grapevine foliage with 2,4-D and Tordon 10K is effective, but limited to contact with foliage. Tordon 10K pellets when broadcast kill grapevines, but also kill all other vegetation, including trees.

IMPORTANT: Any herbicide use must be in strict compliance with the manufacturer's instructions. Read and understand the label before attempting to use any chemical. Follow directions carefully.

¹The use of trade, firm, or corporation names in this publication is for the information and convenience of the reader. Such use does not constitute an official endorsement of approval by the Pennsylvania Bureau of Forestry of any product or service to the exclusion of others that may be suitable.

3. Canopy Shade

Since grapevines are intolerant of shade, maintaining a full forest canopy will control grapevine by eliminating the sunlight necessary for their growth. This control method is especially effective when combined with mechanical cutting or herbicide use. The vines will sprout after being cut, but if shaded, these sprouts will die off within a few years. New grapevine sprouts are also susceptible to browse by numerous woodland animals. If a timber harvest is planned for a woodlot with grapevine, the vines should be killed 4-5 years beforehand.

Stand Treatment

Any of the control methods employed must be applied systematically in order to be effective. The area to be treated should be laid out into a grid or path line system so that the entire area is covered. Plastic flagging may be helpful in sectioning off treatment areas when natural boundaries do not exist. When finishing for the day, mark or flag the area so that treatment may resume from the same spot on the next day.

Treated areas should be inspected several years afterward to ensure elimination is complete. Partial re-treatment may be necessary. Especially where sunlight is still reaching the ground.

Wildlife

Grapevines produce food and cover for many species of wildlife. The U.S. Fish and Wildlife Service reports that at least 80 species of birds, and a large number of animals eat grape berries and/or use the vines for nesting and escape cover.

Thus, because of the importance of grapevine to wildlife and because of the damage they cause in trees, the control of grapevine growing in a forest stand is controversial. The landowner must decide what his woodland objectives are.

Grapevine Arbors

An alternative to the total elimination of grapevine, either because of wildlife values or because complete elimination is not practical, is the allowance of certain "grapevine arbors" within a woodland.

An arbor is an open area within the tree canopy where grapevines have developed into a thick, matted entanglement. Eliminating an arbor is usually impractical. However, grapevines in the trees bordering the opening can be cut to prevent the arbor from enlarging. If the grapevine arbor is small, the crown canopy from the overstory border trees may eventually close, thus shading out the vines. In large arbors, sufficient crown closure will not occur. In established arbors it is not possible to grow quality hardwood for many years.

When the forest management objective is to maintain some grapevine for wildlife, arbors are the logical place to grow vines while the rest of the stand is subject to grapevine control treatments. However, even after designating specific arbors, additional ones may be present.

For more information on controlling grapevines and other forestry practices for your woodlot contact your local PA Bureau of Forestry Service Forester.