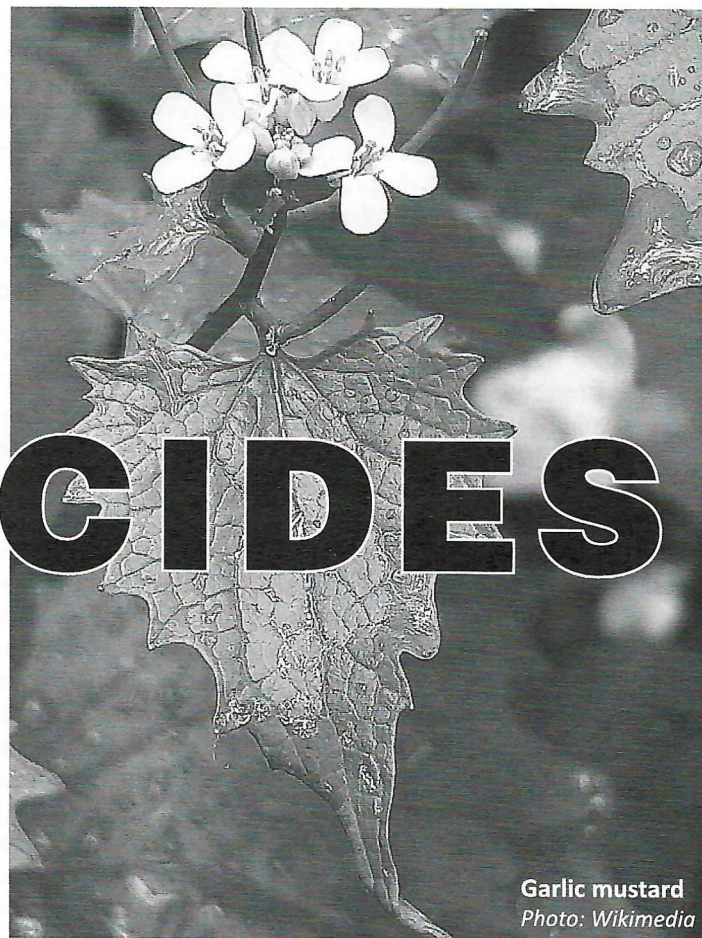


USING HERBICIDES TO CONTROL THE COMPETITION

Story by Bob Ball and Dave Boyt



Garlic mustard
Photo: Wikimedia

Autumn olive, bush and Japanese honeysuckle, multiflora rose, tree of heaven and garlic mustard, to name only a few, are unwelcome invaders of our forests and woodlands. These and other invasive plants compete with desirable native woodland flora for light, water and essential nutrients.

Vines strangle sapling and pole-size trees, while multiflora rose bushes choke out regeneration and make it difficult and unpleasant to walk through your woods for recreation and to carry out woodland management practices.

We can win the war against these invasive species with a variety of strategies and tools, including biological, mechanical and chemical controls.

Growing fine hardwood timber depends largely on controlling invasive grasses, shrubs, vines and trees that compete with crop trees. Herbicide application is, in many cases, the most practical and cost-effective means of dealing with unwanted vegetation. With dozens of chemicals available, each with its own use and application

method, it is a good idea to tap into the experience and expertise of professionals.

On a local level, county soil and water conservation districts (SWCDs) and county Extension educators are excellent sources of technical information. The WDNR forester can also get you pointed in the right direction and connect you with professional foresters who can help you integrate invasive vegetation control into your overall management plan. Chemical company field representatives can also provide you with technical information for specific needs and may be able to recommend a professional to apply the herbicide if you choose not to do it yourself.

A good place to start an invasive control program is to identify the unwanted species and develop a plan to control them. As with most things in life, any forest management problem has multiple solutions and approaches. Too often, landowners begin buying tools, equipment and even herbicides before planning. The decision to manage weed

problems requires thought to avoid building an inventory of hardware and chemicals you may rarely, if ever, use. Answering the following questions will get you on the right path:

- What is the nature and extent of your weed problems?
- How much time and money do you want to devote to controlling your weeds?
- What equipment, tools and herbicides do you have readily available that you are comfortable and knowledgeable using?
- Do you have health and safety concerns about using herbicides and having these products stored on your property? Do you know that most herbicides should not be allowed to freeze?
- Do you have access to herbicide dealers you can rely on to sell products at a fair price and provide you with technical advice about using their products?

BROADCAST SPRAYING

Effective for garlic mustard, barberry, multiflora rose and wild parsnip.

Equipment:

- Backpack sprayer (For small or rough areas)
- Tractor or ATV/UTV boom sprayer (For large open areas)

Time to apply

- Pre-emergent (early spring, before weeds sprout)
- Post-emergent (to kill weeds after they have sprouted)

Broadcast spraying is a relatively expensive treatment because it uses the greatest volume of herbicide, blanketing the entire area to be treated. A boom power sprayer mounted on a utility trailer or on the back of a UTV or tractor saves a great deal of time and effort when preparing large open areas for planting. Small areas, such as wildlife plots, can be treated with a backpack sprayer.

Often, you will need both, using the boom sprayer to cover large flat open areas where you can safely maneuver the equipment, then mopping up the edges and less-accessible areas with the backpack sprayer. The key point is to focus on the perimeter of the treatment area to avoid further spreading, similar to the strategy of containing a grass or forest fire. Broadcast herbicide application requires an investment in equipment, chemical storage and a knowledge of how to properly mix chemicals and calibrate the sprayer to get the recommended application. If this is more than you wish to tackle, consider hiring a professional to do part or all of the job.

Once you have completed spraying your target weeds, let the spray do its job. It may take a few weeks for the chemical to be totally effective. Herbicide dealers may suggest you not mow or bushhog sprayed fields for several months or possibly a year to allow the product to fully translocate into the plant's root system. This wait time varies based on many factors, but when in doubt, give the herbicide more time to fully do its job. The foliage may look dead, but are the roots dead?

FOLIAR SPRAY

Effective for low brush and vines, including multiflora rose, autumn olive, and Japanese honeysuckle

Equipment

- Low-pressure backpack sprayer
- High-pressure wand sprayer with pressurized tank mounted on an ATV/UTV or tractor PTO-driven units

Time to apply

- Anytime the plant has green leaves
- Eliminating invasive species is a one-by-one task in the woods. Again, the approach depends on the invader, and you will likely need a combination of strategies used at different times for the best effect. For low brush and vines, a foliar spray applied with a backpack sprayer is effective.

Hand pump and battery-powered sprayers with a wand let you get into tight areas, but a 30-pound tank on your back is physically demanding. Oddly, you probably won't notice the tank getting lighter as you use the contents, but you'll feel the full weight when you refill it and strap it back on! High-pressure units mounted on an ATV can be a real back saver, but you may still need the backpack unit to cover hard-to-reach vegetation. Try to cover all the leaves without runoff and watch the wind direction so the herbicide doesn't blow back on you or toward non-targeted vegetation.

Foliar spray allows you good control of multiflora rose without getting into the thorns. Japanese honeysuckle is relatively easy to control with foliar spray because it remains green well past the time most other vegetation has gone dormant, minimizing the risk of collateral damage.

Be sure to read the instructions for the proper application mix and timing. Some herbicides are to be used only when the plant is flowering, and others are not to be used in areas where it could run off into open water.

BASAL BARK SPRAYING

Effective for trees under 6 inches in diameter

Equipment

- Backpack sprayer

Time to apply

- Anytime the bark is dry

Basal bark spraying is a quick way to get rid of most types of woody vegetation less than 6 inches in diameter. The herbicide is typically mixed with an oil

carrier, such as diesel fuel, kerosene or crop oil and sprayed around the stem on the bottom 14 inches of the tree. Basal bark spraying can be done anytime of the year when the stems are dry.

Add a coloring agent to the mix to mark the treated stems so you don't miss any. This is an effective way to stop the spread of tree of heaven, autumn olive and red maple, or to control hardwood regeneration in pine plantations.

SYSTEMIC APPLICATION

Effective for trees over 6 inches in diameter, heavy vines such as grape and poison ivy

Equipment

- Machete or axe (hack and squirt) or chain saw (girdle or stump cut)
- Spray bottle or backpack sprayer

Time to apply

- Anytime other than early spring or fall when the sap is flowing

Systemic herbicide is applied to the cambium layer just under the bark so the tree's transport system moves it to the root system, killing the tree. The advantage is that the direct application uses an absolute minimum of herbicide, which, if properly applied, breaks down before it enters the environment. It targets specific trees without damaging nearby crop trees. The selection of application method depends on the equipment available and whether it is acceptable to leave standing dead trees in the managed area. Application can be done at any time the sap is not flowing, as the sap can push the chemical out of the cut. This is an ideal management practice for the dormant season when it is easier to walk through the woods and see the individual trees.

The three main systemic control methods are "hack and squirt," girdling, and stump cut.

Hack and squirt application

Hack and squirt application is quick, uses a minimal amount of herbicide, and requires only basic equipment. Use a sharp hatchet or machete to make frill cuts around the stem. Cuts must penetrate into the sapwood and produce a cupping effect to hold the herbicide. Either spray into the chop or spray onto

the blade tilted slightly outward while it is still in the cut. If you will be working over a large area, consider investing in a "hypo-axe." This special hatchet has a built-in injector that applies a measured volume of herbicide into the tree with each hack. Although somewhat costly, it is a big time-saver and injects enough herbicide to do the job without wasting any. Hard species like American beech or ironwood can cause the hatchet to glance away, so be careful. Also, be aware that hack and squirt results in standing dead trees that can pose a safety hazard along trails and in recreation areas.

Girdling

Girdling satisfies the primal urge to go out in the woods with a chain saw and make sawdust fly. Using a small to medium-size powered saw with a 14-inch to 16-inch bar, hold the saw in a horizontal position waist high and walk around the tree cutting about an inch into the cambium layer completely around the stem. Spraying herbicide into the wound kills the root system, while the girdle cuts off the flow of nutrients.

Some trees, including elm, are hard to kill, and it is worth the extra time to make a second girdle a few inches from the first one, or to make a spiraling cut that goes twice around the tree, and apply herbicide to the entire cut.

Safety is a major concern. With the chain saw running at full throttle just inches from your femoral artery, you should always clear the walking area around the tree and wear chain-saw-proof chaps or cutting pants, along with the usual head, ear-and-eye protection. Like the hack and squirt method, girdling leaves dead standing timber.

Stump cut

The stump cut method involves cutting the tree down, then spraying or painting an approved herbicide on the freshly cut surfaces of stumps. For the best effect, the herbicide should be applied within 5 minutes of cutting down the tree. Focus herbicide application on the cambium layer just inside the bark of the stump and spray or paint on enough to saturate this area, but not so much that the chemical runs onto the ground. To save your back, you can cut the tree off at any comfortable height

and the herbicide will translocate down into the roots. Since this puts the trees on the ground, there is no hazard from standing dead trees. If you are cutting undesirable trees for firewood, it makes sense to apply herbicide to the stumps as you cut them to keep them from sprouting back.

Safety

Herbicides are poison, and there are conflicting opinions on the health risks involved with skin exposure. To minimize the risk, avoid skin contact and wash up before eating and at the end of the day. Follow the manufacturer's directions on mixing, using and storing any herbicides, and only use them in the way intended by the manufacturer. Material Safety Data Sheets are available from the manufacturer and online. If there is any question, ask a forester or sales representative.



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