Herbicide Advice for Homeowners

by Ken Langeland

A number of plant species that are invasive in natural areas of public lands also occur on private property. These may have been planted intentionally or introduced as seeds from other areas or they may have spread vegetatively across lot lines. Because invasive plants on private property can serve as a source of infestation to natural areas, property owners are encouraged to remove invasive plant species (county ordinances sometimes require their removal).

Control methods that can be used by homeowners are similar to those used in natural areas by professional land managers. However, the scale can be very different, ranging from the removal of a single tree to several acres of woody or herbaceous species. Homeowners with several acres of invasive plants may use similar methods and herbicides as professional land managers, while those with small areas or a small number of trees can use simpler methods. The principle difference in herbicides used by professional land managers is packaging, where they can be purchased, and sometimes, concentration. This article discusses methods and herbicides that can be readily used by homeowners for removal of invasive plants, and is intended for general information. **Directions for use on the manufacturer's label of specific herbicides must be followed.** Also note that many cities and counties require permits for removing trees. Always check with your local government to determine if a permit is required before removing unwanted trees.

Fig. 1 KAL

Fig. 2 KAL

Fig. 3 F. Laroche

Herbicides

Herbicide products contain an active ingredient, a diluent (to dilute the product), and sometimes other additives that enhance the performance of the herbicide (such as surfactants). The active ingredient may be either oil soluble (diluted in oil) or water soluble (diluted in water). Active ingredients contained in the majority of herbicide products used by professional land managers are triclopyr amine (water soluble), triclopyr ester (oil soluble), glyphosate (water soluble), and imazapyr (water and oil soluble) (Table 1). Herbicide products that contain imazapyr are not recommended for use in home landscapes because of the potential for imazapyr to be taken up by the roots of desirable plants that could be injured or killed.

Triclopyr amine - Commonly used herbicide products that contain triclopyr amine are Garlon 3A, Brush-B-Gon, and Brush Killer (Table 1). Garlon 3A is a concentrated product (3 lb triclopyr per gal), packaged only in large volume (2.5 gal or larger), and available only at farm supply stores. Brush-B-Gon and Brush Killer are more dilute than Garlon 3A, are packaged in small quantities (quart containers), and can be purchased at retail garden supplies. They are readily available and convenient for the small property owner to use.

Triclopyr ester - Commonly used herbicide products that contain triclopyr ester are Garlon 4 and Pathfinder II. Garlon 4 is a concentrated product that is diluted in water or oil before use. Pathfinder II is pre-diluted in oil and ready to use. Both Garlon 4 and Pathfinder II are packaged in no smaller than 2.5 gal containers and available from farm supply stores. Vine-x is a new product that contains triclopyr ester ready-mixed in oil and sold in small applicator containers. It can be ordered on the Internet at *www.vine-x.com.*

Glyphosate - Roundup Super Concentrate is similar to the glyphosate-containing products used by professional land managers. Roundup Super Concentrate can be purchased in small containers from retail garden supply stores. Products that are more dilute than Roundup Super Concentrate also are available (not discussed in this article).

Methods for Removing Invasive Plants

Hand-pulling - Herbaceous plants, such as tuberous sword fern, can be hand-pulled, but use of some foliar applied herbicide can make the job easier for large numbers of plants. Newly emerged seedlings of woody plants, such as Chinese tallow and carrotwood, frequently appear in home landscapes. Homeowners should be vigilant for these; when discovered early enough, they can be removed by hand pulling.

Stump grinding - When trees are cut down, the stumps are often ground below the soil surface with a stump-grinding machine. This serves to remove the stump from view for aesthetic purposes but adds additional cost to the tree removal. Sprouting of various invasive tree species following stump grinding has not been tested, and certain species may regrow from the ground stump. If root sprouts occur, they can be controlled using one of the herbicide application methods listed below.

Foliar herbicide applications - Foliar application refers to applying herbicide to the leaves (foliage) of unwanted plants. Seedling trees and shrubs and herbaceous plants can be controlled in this way with Brush-B-Gon, Brush Killer, or Roundup Super Concentrate. All are diluted in water before application. **The herbicide solution should be applied so that it contacts only the unwanted plants because it will kill most plants that it comes in contact with.**

Cut stump herbicide application - Stumps of invasive woody plants will resprout after cutting if not treated with a herbicide. Resprouts can be continually cut off as they appear, but applying herbicide to the stump will kill it and prevent resprouting. Stumps should be cut as close to the ground and as level as possible so that applied herbicide does not run off (Fig. 1). On large stumps, the herbicide should be concentrated just inside the bark (Fig. 2). This is where the living tissue of the trunk is that will carry herbicide into the roots. Products that contain triclopyr amine, triclopyr ester, or glyphosate are effective for controlling regrowth of stumps of many invasive plant species. Homeowners with only one or a few stumps to treat can use Brush-B-Gon, Brush Killer, or Roundup Super Concentrate. All three products can be applied undiluted.

Sawdust, which can absorb herbicide and prevent it from moving into the stump, should be removed. Apply the herbicide to the stump as quickly as possible after cutting.

Basal bark herbicide application - Woody plants can be killed without cutting the tree down by applying oil soluble herbicides to the bark. This is only recommended for trees or shrubs with stem diameters of six inches or less. This method is faster than cutting vegetation down and treating the stumps. It is useful for homeowners with larger numbers of woody plants to kill where it is acceptable to leave dying and dead vegetation standing. An oil soluble herbicide must be used for basal bark applications to facilitate movement of the herbicide through waxy substances in the bark. Garlon 4 must be diluted in a penetrating oil that can be recommended where the herbicide is purchased. Pathfinder II is pre-diluted in oil and ready to use. Vine-x can be used for application to small stems (up to 3/4 inch in diameter).

Frill or girdle herbicide application – Basal bark application will not be effective on trees with bark that is too thick for herbicide to penetrate. In this case, some bark must be removed before application of herbicide. A sharp implement such as a machete or hatchet is used to make cuts through the bark and herbicide is applied into these cuts (Fig. 3). Cuts 3-4 inches apart (frill) are sufficient for some species, while a continuous cut completely around the trunk (girdle) is necessary for hard to control species such as melaleuca. Either water soluble or oil soluble herbicide may be used.

Licenses and Training

Anyone who performs pest control on Florida lawns and ornamentals as a business, or anyone who applies pesticides to their own business property or employees who apply pesticides to their employer's business property, or any government employee who applies pesticides to lawns and ornamental plants, must be licensed according to provisions in Chapter 482 of the Florida Statutes. Additional information on pesticide licensing can be obtained from Cooperative Extension offices or from the IFAS public information web site at *www.edis.ifas.ufl.edu* (keyword: pesticide license).

A license is not required to purchase or apply on your own (non-business) property any of the herbicides discussed in this article. A yard maintenance person who applies a pesticide to the lawn or ornamental plants of an individual residential property is exempted from licensing and certification requirements if the pesticides are owned and supplied by the individual property owner. Unlicensed yard maintenance people cannot advertise for, or solicit, pest control business and can not represent themselves to the public as being engaged in pest control. Unlicensed yard maintenance people cannot supply their own pesticide application equipment, use pesticide application power equipment or use any equipment other than a handheld container when applying pesticide.

It is essential and required by law for anyone using a herbicide (or any pesticide) to follow the "Directions for Use" on the manufacturer's label. Training in pesticide application is recommended for anyone who applies their own pesticides and is provided at Cooperative Extension offices in each county. Training manuals for self study of pesticide application are available through the IFAS Extension Book Store (352/392-1764 or http://ifasbooks.ufl.edu.)

Control of Specific Invasive Plants

The manufacturer will recommend on the herbicide label those species for which it has sufficient control data. Herbicide products with the active ingredients triclopyr and glyphosate are effective for controlling invasive plant species that are not always listed on the labels, using the methods described in this article. It is legal to apply a herbicide to control a plant species that is not listed on the manufacturer's label as long as the herbicide is applied to a site approved on the label. Although the herbicides that are more readily available to homeowners, such as Brush-B-Gon, Brush Killer, and Roundup Super Concentrate, have not been tested on all invasive species in Florida, products with the same active ingredients have been tested and used by professional land managers in Florida. These methods can be found in IFAS publication SP242, "Control of Non-native Plants in Natural Areas of Florida," available from the IFAS public information web site ($2.00). Brush-B-Gon, Brush Killer, and Roundup Super Concentrate have been found effective for controlling Brazilian pepper, carrotwood, Chinese tallow, and melaleuca (results may vary in response to various factors). Additional information specific to these and other invasive plant species can be obtained from the IFAS public information web site or by calling the Cooperative Extension office in your county.

Table 1. Herbicides used for control of invasive plant species.

Active Ingredient[1]	Products	Availability
Glyphosate 3 lb/gal	Roundup Pro, Glyphos, Glypro Plus, Touchdown Pro	Farm supply stores. Containers 2-1/2 gal and up.
Glyphosate 3.7 lb/gal	Roundup Super Concentrate	Retail garden supply stores.Containers small as 1-qt.
Triclopyr amine 3 lb/gal	Garlon 3A	Farm supply stores. Containers 2-1/2 gal and up.
Triclopyr amine 0.59 lb/gal	Brush Killer	Retail garden supply stores. Containers small as 1-qt.
Triclopyr amine 0.54 lb/gal	Brush-B-Gon	Retail garden supply stores. Containers small as 1-qt.
Triclopyr ester	Garlon 4	Farm supply stores. Containers 2-1/2 gal and up.
Triclopyr ester 0.75 lb/gal	Pathfinder II	Farm supply stores. Containers 2-1/2 gal and up.
Triclopyr ester 0.75 lb/gal	Vine-x	Internet. Pint and 12 oz containers.

[1]Active ingredient is reported as acid equivalent.

Summary

Homeowners can play an important role in the fight against invasive species by removing them from their private properties. Appropriate use of herbicide products that are readily available in small quantities at garden supply stores can facilitate removal and prevent regrowth. Professional land managers should encourage the removal of invasives by homeowners and assist by providing information on methods and herbicide availability.

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