1998 New England Guide To Chemical Control of Problem Weeds and Brush Around Homes and on Non-Cropland

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NOTICE: It is unlawful to use any pesticide for other than the registered use. **READ AND FOLLOW THE DIRECTIONS ON THE PRODUCT LABEL.** The user assumes all responsibilities for use inconsistent with the label on the product container. Persons using a “Restricted Use” pesticide must be certified in conformity with standards set forth by state and federal regulations.

WARNING: Herbicides and other pesticides may be poisonous. Read and follow all directions and safety precautions on labels. Wear the specified protective equipment. Handle carefully and store in original labeled containers out of reach of children, pets and livestock. Dispose empty containers immediately, in a safe manner and place. Do not contaminate forage, streams and ponds. Follow requirements for restricted entry intervals and notification of pesticide application. Trade names are used for identification. All herbicides listed in this bulletin are registered and cleared for suggested uses according to Federal registration and State laws and regulations in effect on January 1, 1998.

WEEDS - PLANTS GROWING WHERE THEY ARE NOT WANTED

Homeowners frequently find unwanted vegetation that we call "weeds" growing on their premises. Weeds can be classified by their life cycles as annuals, biennials, perennials and woody plants. Annuals germinate, grow vegetatively, produce flowers and seeds, and die all in one year. A sub-group, called winter annuals, germinates in late summer or fall and flowers the following spring. Biennials germinate and grow one season then, following a winter dormancy, flower, produce seed and die the next. Perennials live from year to year, reproducing not only by seeds but by storage organs such as rootstocks, rhizomes, stolons and tubers. Unwanted woody plants, also known as "brush," are perennial in nature.

WEED CONTROL ALTERNATIVES

Annual weeds are shallow-rooted and can be controlled by cultural or mechanical methods such as hand pulling, hoeing, clipping or cultivating. Perennial weeds and brush are often difficult to control by these methods because they regenerate

from deeper underground storage organs. It is often impossible to remove all of these underground structures mechanically to prevent resprouting.

Alternative methods of chemical control for some troublesome perennial weeds and brush are considered below. These alternatives are available to homeowners or small farmers who are not licensed (certified) applicators and who usually wish to purchase only small amounts of herbicides (chemicals that control weeds).

USE OF HERBICIDES

Herbicides, as well as other pesticides designed for use on home grounds, are registered for such use by the U.S. Environmental Protection Agency (EPA) and state regulatory agencies. Registered herbicides have been judged to be safe for humans and the environment when handled and used as directed on the herbicide label. Therefore, it is incumbent on the user to carefully read and follow label directions for herbicide use. Care and common sense make the difference between success and failure in controlling weeds without injuring adjacent desirable vegetation.

Most of the herbicide alternatives listed here are for use only on non-cropland. Unless otherwise specified on the product label, treated areas are not to be planted to food crops for the remainder of the year in which herbicide is applied.

HERBICIDE APPLICATION METHODS

Details on the methods of application will be found on the labels of commercial products. Tablespoon and cup measuring devices reserved only for herbicides can be used to measure out small amounts of liquid products:

2 tablespoons equal 1 fluid ounce
16 tablespoons equal 1 cup
1 cup equals 8 fluid ounces
2 cups equal 1 pint
4 cups equal 1 quart

Spray solutions are best applied in portable compressed air sprayers but aerosols and spray bottles are available for some products. Three rinses are needed to remove residues from "empty" product containers. These rinses should be added to the spray tank before application. Thorough rinsing of spray tanks after application is also essential to remove herbicides and to prevent corrosion in metal sprayers.

It is best to reserve a sprayer for herbicide use only and not use it for other pesticides. Even minute residues in the tank can sometimes injure foliage of desirable plants. In particular, phenoxy herbicides such as 2,4-D are very difficult to completely remove from spray tanks.

Herbicides containing glyphosate (ROUNDUP products, ORTHO KLEERAWAY, GLYFOS, etc.) should not be stored or applied in galvanized steel or unlined steel containers or spray tanks (except stainless steel). Use in such containers could result in the formation of an explosive hydrogen gas mixture which could flash or explode if ignited by open flames or any ignition source.

Drift of spray particles and vapors can damage trees, shrubs, flowers and vegetable plants. To avoid drift to non-target areas, spray only on calm days and maintain large spray droplets by minimizing pressure. Avoid spraying when temperatures are above 85°F. High temperatures can cause some herbicides to form vapors.

Do not apply products containing prometon such as ORTHO TRIOX (original version no longer sold in New England) or PRAMITOL, in the root zones of desirable plants. Root zones of established trees may extend many feet beyond the spread of branches. Avoid walking through treated areas until it is dry. Herbicide picked up on footgear can cause tracking injury on adjacent turf.

CHARACTERISTICS OF HERBICIDES

The active ingredients underlined below are often found in a number of commercial products. Examples of commonly available products are given. Rates of application vary with the percentage of active ingredient in the commercial products and the weeds to be controlled. Rates of application are given on each of the product labels.

Some herbicides are classified as selective in that they kill certain types of plants and not others. The selective herbicides 2,4-D, 2,4-DP, dicamba and triclopyr control many broadleaf weeds and brush, but not grasses. The herbicides fluazifop and sethoxydim display just the opposite selectivity - they control emerged grasses only. Herbicides such as glyphosate and glufosinate that kill or injure nearly all green plants are classified as non-selective.
Glyphosate is a non-selective foliar-applied herbicide that is rapidly inactivated and biodegraded after contact with mineral soils. However, phytotoxicity persists in organic matter so glyphosate should not

be used to control weeds on piles of potting mix containing peat. The herbicide moves systemically from foliage to roots where it kills plants slowly. One to three weeks may be required for herbaceous annuals and perennials to die. Woody plants sprayed in late season may show few symptoms until the following spring when they often fail to refoliate. Rainfall within 6 hours after application can reduce glyphosate efficacy.

Glyphosate is the active ingredient in several different products and is available in a wide range of concentrations. ROUNDUP is the original and best known glyphosate-based product. ROUNDUP PRO and ROUNDUP ULTRA are new glyphosate products that contain a different surfactant which improves the absorption of glyphosate into the treated leaf, and thus its herbicidal activity. Examples of available products include the following ('glyphosate' refers to the isopropylamine salt of glyphosate):

ROUNDUP Ready-to-Use: 0.96% glyphosate
- Weed & Grass Killer
- Fence & Yard Edger
- Sure Shot Foam

ORTHO YARD BASICS
Weed & Grass Killer
SHOOT OUT Ready-to-Use

SHOOT OUT Concentrate 5% glyphosate

ORTHO KLEERAWAY 7.5% glyphosate
Systemic Grass & Weed Killer

ROUNDUP Concentrate: 18% glyphosate
- Weed & Grass Killer
- Tough Weed Formula

ROUNDUP Super Concentrate
Weed & Grass Killer: 41% glyphosate
ROUNDUP PRO
ROUNDUP ULTRA
ACCORD
GLYFOS

ROUNDUP DRYPAK 94% glyphosate
Powder (monoammonium salt)

TOUCHDOWN 57.6% sulfosate
(trimethyl sulfonium salt of glyphosate)

ORTHO KLEERAWAY 0.5% glyphosate +
Grass & Weed Killer 0.12% acifluorfen

ORTHO GROUNDCLEAR SUPEREDGER
Grass & Weed Control 0.25% glyphosate +
0.25% oxyfluorfen

In the last two formulations, acifluorfen increases the speed of weed kill and oxyfluorfen provides residual control of weeds that emerge from seed.

Since uses of these glyphosate products differ, it is wise to carefully read the product labels before purchase. Only the Roundup 18% and 41% (b and d) concentrations are registered for preplant control of perennial weeds in certain food crops.

Several non-selective herbicides are available that have considerably less systemic activity than glyphosate. These herbicides range from completely non-systemic (contact) to those that have only limited systemic movement within plants. All of these herbicides kill treated vegetation more rapidly than does glyphosate. However, because a non-systemic herbicide does not move into the underground portions of the weed, most perennial weeds and brush can regrow. Examples of non-selective herbicides include the following:

Non-systemic:
SAFER Superfast Weed & Grass Killer
(potassium salts of fatty acids)
SCYTHE (pelargonic acid)
REWARD (diquat dibromide)

Moderately systemic:
FINALE (glufosinate-ammonium)

Phenoxy herbicides such as 2,4-D, 2,4-DP, and MCPA are plant growth regulators that are found in several commercial products for home and farm use. They control many broadleaf weeds and brush but have little effect on grasses and sedges. They are absorbed by foliage and stems and are moved to roots. Symptoms of injury include downward bending or twisting of stems, leaf cupping, and strap-shaped new growth. Perennial weeds slowly die and woody plants may defoliate within 2 to 3 weeks.

Triclopyr is the active ingredient in ORTHO BRUSH-B-GON and GARLON 3A. It is combined with 2,4-D in CROSSBOW. Like the phenoxy herbicides, triclopyr is absorbed by foliage and stems, is systemic, and has little effect on grasses and sedges. Treated woody plants usually become brown and defoliate within 2 to 4 weeks.

ORTHO GRASS-B-GON Grass Killer is a ready-to-use formulation of fluazifop-butyl, which is also available in the concentrated products FUSILADE II,

ORNAMEC 170, and TAKE-AWAY. Fluazifop-butyl is a selective systemic herbicide that kills only emerged annual and perennial grasses. It has little or no effect on broadleaf weeds, sedges and most broadleaf ornamental plants. One to four weeks may be necessary for treated grasses to die, and some perennial grasses may require a second application. Other similar selective herbicides for grasses include VANTAGE (sethoxydim) and ENVOY (clethodim).

Refer to the product label for recommendations on the addition of spray adjuvants or surfactants to improve activity of the herbicide. To maximize efficacy with foliar absorbed herbicides, spray on dry foliage at times when rain is not expected for several hours.

WEEDS TO BE CONTROLLED	HERBICIDE TRADE NAME(S)[1]	RATES OF PRODUCT[2]	COMMENTS
1a) Perennial weeds and grasses in non-crop areas or on sites to be planted to lawns or gardens. Special weeds are mentioned below.	ROUNDUP Super Conc. ROUNDUP PRO / ULTRA (41% glyphosate)	$1^1/_2$ to $2^1/_2$ fluid ounces per gallon of water	Spray grasses when 6 to 8 inches tall and broadleaf weeds that are actively growing. Retreat regrowth if needed. Delay tillage or mowing 4 to 7 days. Some weeds such as bindweed and horsenettle require more than one treatment the season before planting for best results.
	ROUNDUP Concentrate (18% glyphosate)	3 to 6 fl. oz. per gallon water	
b) Phragmites (common reedgrass).	See 1a	See 1a	Treat in late summer or early fall when plants are actively growing and reaching full bloom.
c) Japanese knotweed, also called Japanese fleece-flower or Mexican bamboo.	See 1a	See 1a	Treat in June or later, after flowering. Thoroughly wet foliage. Growth ceases and leaves will discolor. Do not cut down for at least 2 weeks after treatment. Spot spray regrowth.
d) Perennial grasses (i.e. quackgrass, ryegrass, tall fescue) in ground covers, flowers, around shrubs and trees.	ORTHO GRASS-B-GON GRASS KILLER (fluazifop-butyl)	Undiluted	Spray immature grasses when actively growing. Thoroughly wet grass blades. Retreat quackgrass in 7 to 10 days. Broadleaf weeds will not be controlled. Keep spray off turfgrasses.
e) General weed control in non-crop areas and around trees, shrubs, and fences.	See 1a	See 1a	Spray weeds during active growth. Avoid spraying turfgrasses and foliage of desirable trees, shrubs, or flowers. Avoid walking through sprayed areas until sprays dry or tracking injury will occur on adjacent turf.
	ROUNDUP Ready-To-Use (0.96% glyphosate)	Undiluted	
	ROUNDUP DRYPAK (94% glyphosate)	One 1-oz. packet per gallon water	
	ORTHO KLEERAWAY Grass & Weed Killer (0.5% glyphosate + 0.12% acifluorfen)	Undiluted	
	FINALE (glufosinate-ammonium)	$1^1/_2$ to 4 fl. oz. per gallon water	
	REWARD (diquat dibromide)	$^3/_4$ fl. oz. per gallon water	
	SCYTHE (pelargonic acid)	$6^1/_2$ to 13 fl. oz. per gallon water	
	SAFER SUPERFAST Weed & Grass Killer (fatty acid solution)	Undiluted	

[1] Trade names (in capital letters) are used for identification. No product endorsement is implied nor is discrimination intended against similar materials. See previous pages for additional product names.

[2] Active ingredients are given in parentheses.
1 fluid ounce (fl. oz.) = 2 tablespoons (Tbsp.); 8 fl. oz. = 16 Tbsp. = 1 cup

WEEDS TO BE CONTROLLED	HERBICIDE TRADE NAME(S)[1]	RATES OF PRODUCT[2]	COMMENTS
–	–	Undiluted	–
2) General brush control including wild blackberry and raspberry, sumac, poplar, sassafras, multiflora rose, etc. see 3, for additional Poison ivy control.	ORTHO BRUSH-B-GON Poison Ivy, Poison Oak & Brush Killer$_2$ *or* Poison Ivy, Poison Oak & Brush Killer$_3$ (0.7% triclopyr)	4 fl. oz. per gallon water	Spray all leaves to wet thoroughly. Products containing triclopyr or 2,4-D plus 2,4-DP are most effective after target brush is in full leaf and actively growing. Products containing glyphosate are most effective from mid-summer to fall, before frost, when soil moisture is adequate and rainfall is not expected for 6 or more hours after application. Triclopyr and 2,4-D plus 2,4-DP products are the better choices if one does not want to kill grasses in the understory.
a) Foliage sprays during growing season.	ORTHO BRUSH-B-GON Poison Ivy, Poison Oak & Brush Killer$_1$ (8% triclopyr)	1 to 1^1/$_2$ fl. oz. per gallon water	
	GARLON 3A (44.4% triclopyr)	1^1/$_2$ to 2 fl. oz. per gallon water	
	CROSSBOW (2,4-D + triclopyr)	1^1/$_2$ fl. oz. per gallon water	
	WEEDONE 170 (2,4-D + 2,4-DP)	See 1a	
	ROUNDUP products and other glyphosate-based products (See 1a)		
b) Basal bark sprays during dormant season.	WEEDONE 170 (2,4-D + 2,4-DP)	5 fl. oz. per gallon of fuel oil, diesel oil or kerosene	Thoroughly spray lower 18 inches of dormant stems to run down around root collar. These treatments are most effective on brush and trees smaller than 3 to 4 inches in diameter, and also to prevent resprouting of freshly cut stumps of any size. The herbicides are diluted in oil to facilitate entry through bark.
	CROSSBOW (2,4-D + triclopyr)	5 fl. oz. per gallon of fuel oil, diesel oil or kerosene	
c) Stump treatments to control resprouting of unwanted trees and shrubs.	ORTHO BRUSH-B-GON Poison Ivy, Poison Oak & Brush Killer$_1$ (8% triclopyr)	Undiluted	Spray or paint top of freshly cut stumps with one of these products. Treat at any time except if snow or water is around stumps. Stump treatments may not stop sprouting from root suckering species such as sumac, aspen (poplars) and sassafras.
	GARLON 3A (44.4% triclopyr)	Undiluted	
	ROUNDUP ROUNDUP PRO / ULTRA (41% glyphosate)	Diluted 1 to 1 in water	
	WEEDONE 170 (2,4-D + 2,4-DP)	Undiluted	

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3) Poison Ivy	See products containing glyphosate, triclopyr, 2,4-D and 2,4-DP (1a, 2a)	See rates for products in 1a, 2a	Spray leaves to wet thoroughly. Poison ivy vines growing on trees may be treated provided only the mature bark and not the foliage of the tree is sprayed. Do not spray the bark of desirable trees with products containing oil. For vines growing in shrubs, cut off at base and treat stumps as in 2c.
4) Oriental bittersweet	Products containing triclopyr as in 2a.	See 2a	Triclopyr products provide excellent control when sprayed on foliage. Spray foliage to wet in August or Sept. before frost. For large vines growing into tree, cut off at base and treat stumps as in 2c. Small seedlings can be controlled by rooting out by hand.
	ROUNDUP Super Conc. ROUNDUP PRO / ULTRA (41% glyphosate)	3 fl. oz. per gallon water	
	ROUNDUP Concentrate (18% glyphosate)	7 fl. oz. per gallon water	
5) Total vegetation control and residual weed control for driveways and walkways	PRAMITOL 5PS (chlorate-borate + prometon + simazine)	0.5 to 2 lb granules per 100 square feet	Products containing prometon should not be used in the root zone of trees or shrubs or in areas where heavy rains could wash them into turf or gardens.
	ORTHO GROUNDCLEAR TRIOX Total Vegetation Killer$_A$ (oxyfluorfen + imazapyr)	1 gallon of product diluted in water to treat 300 sq. ft.	
	ORTHO GROUNDCLEAR SUPER EDGER (glyphosate + oxyfluorfen)	1 gallon of product diluted in water to treat 300 sq. ft.	Can be used in walkways or patios next to trees, shrubs or turf areas. Spray when weeds are emerged. Repeat only after weeds reappear.
	Use one of the following products in addition to a herbicide listed in 1e:	See rates for products in 1e.	The herbicides listed in 1e provide control of emerged weeds only. In contrast, the products listed here have no activity on emerged weeds, but prevent the emergence of many weeds for up to several months. These herbicides inhibit root development of germinating grasses and many broadleaf weeds. They can be used safely around many woody and herbaceous plants in landscapes.
	PREEN or TREFLAN 5G (trifluralin)	Refer to product labels for application rates of these herbicides.	
	SURFLAN AS (oryzalin)		
	PENDULUM or PRE-M (pendimethalin)		
	BARRICADE or FACTOR (prodiamine)		

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