

REVIEW OF WEED MANAGEMENT PRACTICES FALL 2006

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Fall is an excellent time to control a lot of the herbaceous perennial and woody weeds that cannot easily be controlled during the growing season or have escaped earlier weed management applications. In fact, growers who forgo fall treatments sooner or later pay a higher price. For example, woody species that invade from seed or rootstocks are short and easy to control the first season but may be 4 to 6-feet tall a year later, presenting a much greater control challenge.

Two herbicide tools that fill the niche for fall use in Christmas trees are glyphosate products (Roundup Original and equivalents) and triclopyr amine (Garlon 3A). Both injure conifers during the growing season but are tolerated by spring applications in selected conifers before bud break and fall applications in September or later; at specified rates and methods of application.

Glyphosate controls most perennial weeds and grasses and most woody plants with healthy leaves in the fall when these plants have reduced top growth and are transporting their sugars from leaves to roots. Glyphosate moves with the sugars. In early season, woody plants either do not have sufficient leaves or are not moving sugars to roots so that glyphosate may kill the tops but not the root systems. Furthermore, in the spring certain perennials such as wirestem mulch and horsetail have not “greened up” and, therefore, escape glyphosate applications. The net result is that early fall is the best overall timing for broad spectrum weed control with glyphosate. Some perennials such as brambles and perennial grasses are susceptible to glyphosate even in October and November, after killing frost, but woody plants, ferns and bindweed must be treated before leaf senescence (yellowing) or drop.

Triclopyr controls only broadleaf and woody plants, with little effect on most grasses and sedges. It has an advantage over glyphosate in that it can be applied in row middles to control weeds and brush without eliminating the grasses. Most growers prefer grasses for a stable ground cover; between tree rows. Triclopyr also is more effective than glyphosate in controlling certain woody species such as maple and bittersweet. However, Garlon 3A is a restricted use herbicide in some states (not in Connecticut), which means that a pesticide applicator’s license may be required to purchase it, and it costs more per acre than glyphosate. Timing of application and dormant conifer species tolerance for glyphosate and triclopyr are about the same; white pines and Douglas-fir are more susceptible to injury from both than spruces and true firs. However, for spot directed spray treatment of woody plants such as poison ivy and Virginia creeper and multiflora rose in early season (late May or June) triclopyr is apt to be more effective for root kill than glyphosate. Sprays of both need to be kept off the conifer foliage during active conifer growth.

Combinations of glyphosate and triclopyr are often justified for fall application to improve control of maple, ash, perennial vetch and wild parsnip. A common rate would be 1 quart of each per acre or 1 fluid ounce of each per gallon for non-calibrated spot sprays where contact with conifer foliage is minimized.

We have thoroughly covered the subject of different glyphosate formulations in recent issues of The Real Tree Line. Suffice to say Roundup “Original” has been phased out and some formulations of glyphosate may have surfactants that increase its injury potential on conifers.

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There are many generic forms of glyphosate and the few that we have verified to be about equivalent to Roundup "Original" include "Glyfos", "Credit", "Glyphosate 4" and "Roundup Original Max". However, the latter contains a more concentrate amount of glyphosate so that only 0.7 times as much is used. There are other brands of glyphosate that are suitable so my advice is to rely on your pesticide suppliers to provide a product that is registered for Christmas trees and is equivalent in crop safety to "Roundup Original". Remember, too, that any formulation of glyphosate is safe in conifers if sprays are fully directed (or preplant) to avoid conifer foliage, because glyphosate is rapidly inactivated in contact with soil.

Because glyphosate leaves no residue in soil to inhibit weed germination, sprays, especially in early fall, allow later germination of winter annual and some perennial weeds that may not be easily killed with spring herbicides. Horseweed (marestail), pepperweeds and mustards are examples. To avoid this, low rates of the preemergence herbicides simazine (Princep, Sim-Trol, etc.) or SureGuard (flumioxazin) can be added to the full sprays of glyphosate. My preference, from the cost standpoint is simazine at 2 lbs. (active ingredient) per acre, but if triazine-resistant horseweed is a problem it may be necessary to add 1 ½ pints of "Roundup Original" or equivalent to the herbicide sprays in the spring. For example, Roundup Original or equivalent at 43 fluid ounces per acre plus simazine 2 lbs. active per acre in the fall could be followed by SureGuard at 10 to 12 ounces (by weight) plus Roundup Original at 24 fluid ounces in the spring before bud break. Do not add any additional surfactant to these glyphosate sprays.

We know that semi-directed basal sprays are usually best with glyphosate or triclopyr using off-center nozzles. However, it is important to set the nozzles high enough so that the weed foliage is covered by an overlapping pattern; otherwise a strip of unkilld weeds is left in the tree row.

When is it desirable to spray over-the-top with glyphosate and triclopyr, and how?
If brush, vines, goldenrod, asters, or other perennials are too tall an over-the-top spray may be called for, but almost never, in my opinion, in Douglas-fir or white pine because of potential conifer injury.

Dormant spruces and true fir tolerate up to 2 quarts of 41% glyphosate provided the spray nozzles are held 20 inches or more above the tallest conifers. Flat fan nozzles (such as Teejet 8002, 8003 or 8004) are best for uniform coverage in over-the-top spraying. A broadcast over-the-top spray in the fall can then be followed by band sprays of preemergence herbicide in the spring.

Fall applications of glyphosate or triclopyr are unnecessary when frost sensitive annual weeds or yellow nutsedge dominate and woody invaders are sparse. Killing nutsedge plants after early August is a waste of time and money because tubers are already formed and the tops are killed by frost. If only scattered brush or vine are present, especially in small plantations, spot treatments may be prescribed but better yet, consider calibrated backpack sprays, walking at a constant speed and spraying at constant pressure only when problem weeds or brush are spotted. This saves herbicide (money!) and a lot of time,