

Christmas Tree Weeds and Thoughts on Plantings for 2007
John Ahrens¹

This is a good time to review our 2006 weed research program and speak about plans for spring. The 2006 growing season was a challenge for many Christmas tree weed managers. March was very dry and April had normal rainfall, making it a great spring for planting trees and applying preemergence herbicides. However, May in Connecticut was wetter than normal and June provided over 9 inches of rain, compared with the normal 3.9 inches. These heavy rains in June shortened the effective life of preemergence herbicides, by leaching them below germinating weed seeds or hastening their breakdown. In many northeast plantations these conditions resulted in a major emergence of annual weeds in late June and early July. By August, regardless of the spring herbicide treatment, many plantations were overgrown with weeds-crabgrass, foxtails, ragweed, horseweed, etc., etc. This was the case in our weed research experiments in Connecticut. The only growers that I talked with who had good late-season weed control were those who applied supplemental [postemergence] treatments in June or early July.

How important [harmful to trees] are those late-season infestations of annual weeds? My observations on this are mostly anecdotal, and indicate that, provided we have adequate rainfall and row middles are mowed, those late season weeds are not very important. Young trees in the untreated controls of our experiments have survived well and appeared healthy in the presence of July and August weed infestations. Unchecked perennial and woody weeds seem to be more of a detriment to conifer vitality and growth than late-season annuals. This is not to say that unchecked annuals do not affect Christmas tree production. Shearing of trees in heavy summer weed growth is slower, more tedious and more demoralizing, if not hazardous to workers, and if row middles were not mowed earlier, young trees may be inadvertently mowed down.

An alternative to tolerating mid-summer invasion of annual weeds is to apply a postemergence spray in mid- to late-June that kills or suppresses these weeds while they are small. I will address these summer alternatives in the Spring 2007 issue of The Real Tree Line.

Dupont Westar is now registered

A year ago I mentioned our experiments with Dupont Westar, a blend of two herbicides: 6.5% sulfometuron methyl (Oust) and 68.6% hexazinone (Velpar) that has been registered for Christmas tree plantations in the Pacific Northwest. After a third year of field experiments with this product in Connecticut and the Northeast, it finally has received a federal registration for Christmas tree plantations in the eastern U.S.. (For background, please read my comments on this product in The Real Tree Line, vol. 46, no. 1, February 2006.)

We continued evaluations in 2006 experiments with Westar at Kogut's Hemlock Hill Tree Farm in Somers, CT. Questions that we sought answers to included: a) Effects of Westar on quackgrass and Douglas-fir, b) Effects of a 2nd year of Westar treatments on Fraser fir, c) Comparing fall and spring applications of Westar, and d) Evaluating the safety of adding Roundup Original or non-ionic surfactant to Westar.

¹ Plant Scientist Emeritus, The Connecticut Agricultural Experiment Station, Valley Laboratory, Windsor, 06095. (860)683-4985. January 2007

Those results can be summarized as follows: Westar at 8 to 12 oz. (product) per acre gave excellent season-long control of quackgrass without injury to Lincoln Douglas-fir established in the field for two years. Westar applications at 8 oz/A two years in a row were not harmful to Fraser fir and ragweed control was excellent, but mid-to-late season crabgrass control was poor in the wet 2006 season. April applications of Westar were much more effective than November applications for summer annual weeds. Adding Roundup Original at 1 pint/A or non-ionic surfactant had little effect on Fraser fir.

Suggestions on Westar for 2007:

Based on our experiments and observations and those in New York and Pennsylvania, I think Westar is worthy of trial use in fir, pine and Douglas-fir plantations established in the field for at least one season. Use in Colorado spruce is still questionable. "Trial use" means comparing any new product with your standard herbicide program at the manufacturer's suggested rates and timing; in this case before conifer bud break in the spring. Where new transplants are interplanted in established trees, use of the lowest labeled rate (8 oz/A) is suggested. To avoid conifer injury, Westar must be applied with calibrated equipment--either backpack or tractor-mounted. Adding surfactant or Roundup to Westar is mostly unnecessary, with at least two exceptions: In plantations with spring infestations of smooth bedstraw or brambles (wild blackberry or raspberry) adding Roundup could be beneficial. On the other hand, we still feel that fall Roundup and/or Garlon 3A applications are the most effective ways to control the broad spectrum of perennial and woody weeds. However, satisfactory control of yellow nutsedge and quackgrass, as well as winter annuals such as horseweed and pepperweeds can be expected with Westar applied in April. Control of crabgrass and foxtails in the summer might be lacking with Westar in seasons of heavy spring rainfall, but summer control of common ragweed has been good. To better control annual grasses in well established plantations, it may be advisable to add Velpar 75 DF at 5 ounces/A to Westar at the 6 to 8 ounce rates.

Westar is not a good choice for growers who spot treat and do not calibrate sprayers because overdosing can kill or stunt conifers. Westar also is unsafe to use in transplant beds or seed beds. On the positive side, we hear from the Dupont Co. that Westar should be a cost-effective herbicide for plantations.

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Other herbicide alternatives:

We welcome new herbicide options but let's not forget the older products. Rotating herbicides in different years makes good sense for several reasons- preventing weed resistance and a buildup of tolerant weeds, and reducing chances of leaching to groundwater.

SureGuard, also a relatively new herbicide, is an excellent choice for newly-planted conifers that are planted into tilled fields, as is SureGuard plus Roundup for established conifers. Adding Pennant Magnum to SureGuard (or Princep) can control yellow nutsedge as well as annual grasses, although a summer "touchup" may be desirable. Small acreage growers usually want to minimize the number of herbicides to stock and are advised to use up what they have.

A little known fact is that the addition of Roundup Original at 4 to 8 oz/A can improve control of newly-emerged weed seedlings with spring herbicide mixes without injury to conifers and at very low cost.

Conventional herbicide mixes for use in the spring before bud break include the following examples:

- a) Princep 2 to 3 qts + Aatrex 2 qts/A – especially good for quackgrass control.
 - b) Princep 3 qts + Pendulum 60 DF 4-5lb/A – for new or established plantings , preferably following Roundup in the fall .
 - c) Princep 3 qts + Pennant Magnum 1-1/3 qts/A – for nutsedge-infested fields in new or established plantings..
 - d) SureGuard at 12 oz/A – use alone in new plantings or add 1 pt to 1 qt of Roundup Original for emerged weeds in established plantations.
 - e) SureGuard at 6 oz + Pennant Magnum 1-1/3 qts/A – to control nutsedge as well as annual weeds. Add only 4 to 8 oz/A of Roundup Original if needed.
 - f) Princep 3 qts + Surflan AS 3-4 qts/A – safe before or after conifer bud break in newly planted trees. In established trees, add up to 1 qt/A of Roundup Original if needed before bud break but only 4 oz/A of Roundup Original after bud break.
- Goal 2XL at 1 pt to 1 qt/A could be added to mixes b) and c) to better control broadleaf weeds.

Firs to plant in areas where fraser firs have died because of imperfect drainage:

Fraser firs suffer high mortality on imperfectly drained sites and mortality usually is worse in the second rotation. Canaan fir is the current best fir that we have seen for these sites. We have been evaluating Canaan fir, also called West Virginia balsam (*Abies balsamea* var. *phenerolepsis*) for about 17 years. Survival of Canaan fir in imperfectly drained soils that cannot grow fraser fir is usually much better than fraser fir and about equal to white pine. Canaan fir is somewhat variable and will succumb in very wet areas, but it is the fir you can most depend on for those marginally wet sites. Choose and cut customers love it and because of very late bud break, it tolerates frost pockets better than balsam fir. It also is less susceptible than balsam fir to balsam twig aphid. However, be sure your supplier has West Virginia balsam and not “a northern seed source of Canaan fir”. Buyer beware!

Several years ago Marty Cubanski, then the manager of the Connecticut State Forest Nursery gave me some King Boris and Turkish firs “to try”. About 25 were planted in Vermont next to stumps of fraser firs that had died because of imperfect drainage and subsequent root rots. All survived and some now are 5 to 6 feet tall. Those in my well- drained CT plantation are doing fine also. Growers with this problem might consider planting 50 or so of each of King Boris and Turkish firs. Be sure to keep records of their location and performance. Both species have demonstrated intermediate resistance to a root rot fungus (*Phytophthora cinnamomi* in North Carolina tests.

Best of luck in your plantations this year. Any questions or comments– call me at (860) 683-4985 or e-mail – john.ahrens@po.state.ct.us or Dr Todd Mervosh at (860) 683-4984 or e-mail- todd.mervosh@po.state.ct.us

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