CHEMICAL WEED CONTROL IN FOREST STANDS

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Herbicides can be a safe, effective alternative to mechanical or manual forest weed control methods if used according to label directions. To avoid drift, volatilization, or direct damage to areas adjacent to sprayed forests, it is essential to follow label recommendations related to:

1. **Adjuvants**—such as drift control agents or surfactants which increase uptake.
2. **Spray Equipment**—specifically, type of aircraft, spray boom, pressure (psi), or other spray equipment restrictions.
3. **Weather Conditions**—such as temperature, relative humidity, wind speed, and wind direction.
4. **Buffer Strips**—width and location relative to dwellings, other occupied structures, streams, lakes, ditches, gardens, and boundaries.

READ THE LABEL!

These recommendations may not apply to Christmas trees and woody ornamentals.

Additional recommendations for minor forestry uses such as hardwood plantations and specific species may be found in Chapter 17, "Weed Control in Field- and Container-Grown Ornamentals," in the *Nursery Crops Production Manual**. Consult a county Extension agent, professional forester, or weed control specialist before spraying forest stands.

*Contact the Department of Horticultural Science, Box 7609, NCSU, Raleigh, NC 27695-7609. The manual sells for $35. Individual chapter prices vary.

TABLE 8-7. PINE RELEASE

Type Application	Plants Controlled	Herbicide and Formulation	Amount of Formulation Per Acre	Uses, Remarks, and Precautions
Foliar Spray	Many broadleaf weeds, grasses, and woody species (black locust, cherry, oaks, persimmon, maple, sassafras, sumac, sweetgum, yellow-poplar)	glyphosate (Accord Concentrate) 5.4 L OR (DuPont Glyphosate VMF) 5.4 L OR Other brands	.75 qt .75 qt Rate may vary	Use at end of first growing season for first-year plantings. May be tank mixed with Oust XP and/or Arsenal AC for many pines. See labels.
			1.125 to 1.875 qt	Use late summer or early fall after conifers have hardened off (second and subsequent growing seasons).
			12 to 18 oz	Herbacious release (early season) for loblolly and longleaf pines. May be tank mixed with Oust XP and/or Arsenal AC for many species.
	Woody plants (oaks, sweetgum, elm, and sumac)	hexazinone (Velpar L) 2 EC OR (Velpar DF) 75%	4 to 6 pt (first-year plantings) 4 to 8 pt (established trees) 1.33 to 1.8 lb (first-year plantings) 1.33 to 2.66 (established trees)	Use spring to early summer. All rates depend on soil type. Use lower rates on coarser soils. See label.
	Many grasses, broadleaf weeds, vines, brambles, woody brush, and trees	imazapyr (Arsenal) AC	2 to 16 oz except up to 20 oz for loblolly	May be tank mixed with Accord Concentrate, Oust XP, and, for lobolly only, Oust Extra.
	Herbaceous plants (crabgrass, dog fennel, fescue, willoweed [fireweed], goldenrod, horseweed, Kentucky bluegrass, yellow nutsedge, panicums [broadleaf, fall, narrow], pokeweed, ragweed, white snakeroot, and yellow sweetclover)	sulfometuron methyl (Oust XP 75%)	2 to 8 oz	Rates depend on soil type and species. Labeled for loblolly, slash, longleaf, Virginia, and white pines. May be tank mixed with Velpar and/or Arsenal for some species. See labels.
	Many annual grasses and broadleaf weeds	hexazinone 63.2% + sulfometuron methyl 11.8% (Oustar)	10 to 19 oz (first-year control) 12 to 24 oz (after first year)	Use spring to early summer. All rates depend on soil type. For loblolly, slash, and longleaf pine only. See labels.
	Certain hardwoods, weeds, and grasses	sulfometuron methyl (15%) + metsulfuron methyl (56.25% (Oust Extra)	2.66 to 4 oz	Loblolly and slash only. May be tank mixed with Arsenal AC for loblolly only. Use lower rates on coarser soils.

TABLE 8-7. PINE RELEASE (continued)

Type Application	Plants Controlled	Herbicide and Formulation	Amount of Formulation Per Acre	Uses, Remarks, and Precautions
Preemergent/ Foliar	Most annual grasses and many broadleaf weeds	pendimethalin (Pendulum) 2 G (Pendulum) 3.3 EC	 100 to 200 lb 2.4 to 4.8 qt	Apply at time of planting or to established trees. Planting slit must be closed to avoid root contact. Labeled for loblolly, white and Virginia pines and a number of hardwood species. See label for details.
Spot-gun	Woody plants (cherry, blackgum, dogwood, elm, hawthorn, hickory, oaks, maple, sweetgum, and sumac)	hexazinone (Velpar L) 2 EC OR (Velpar DF) 75%	 2 to 8 qt 3 to 10 qt	Apply in calibrated spots on a grid pattern. Rate per acre and grid pattern depend on soil texture and species composition. Applied with an exact delivery handgun. Apply from late winter to early summer. Do not apply spots within 36 in. or directly upslope from seedlings. Poor results may occur if the site is burned 3 to 6 months before treatment or on stump sprouts less than 1 year old.
Broadcast Granular	Woody plants (American elder, balsam, poplar, birch, black cherry, blackgum, brambles [such as black-berry, dewberry, and raspberry], cherry, chokeberry, dogwood, Eastern red cedar, elm, green ash, hawthorn, hickory, hornbeam, mulberry, multiflora rose, red maple, oaks [such as black, blackjack, bluejack, post, southern red, Turkey, water, and white oak], Russian olive, sumac, sweetgum, white ash, wild plum, willow, sourwood)	hexazinone (Pronone) various formulations	5 to 30 lb or 16 to 60 lb	Apply by ground or aerial equipment in spring when hardwood leaves are 50% developed but no later than June 15. At least 2 in. of rainfall needed to activate. Not recommended for poorly drained or marsh sites. See label for rates on specific soil types. Do not use on pines that are under stress. Some pine mortality may be expected. Do not use on sites where 10% conifer mortality cannot be tolerated. Allow at least 2 months after transplanting before application. Labeled for loblolly, longleaf, shortleaf, slash and Virginia pines.
	Herbaceous weeds (annual bluegrass, barnyardgrass, bentgrass, bromegrass, catsear, common groundsel, common ragweed, false dandelion, fleabane, foxtail, oxeye daisy, Pennsylvania smartweed, velvetgrass, and wild carrot. Treat-ment provides partial control of curly dock, dandelion, willow weed [fire-weed], fescue, goldenrod, horse-weed, orchardgrass, quackgrass, and ryegrass)	hexazinone (Pronone 5-G) 5% granule	10 to 30 lb	Same as above.

These recommendations apply only to North Carolina. They may not be appropriate for conditions in other states and may not comply with laws and regulations outside of North Carolina. These recommendations are current as of October 2003. Individuals who use agricultural chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage regulations and examine a current product label before applying any chemical. For assistance, contact your county Cooperative Extension agent. The use of brand names and any mention or listing of commercial products or services in this document does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned.

http://ipm.ncsu.edu/agchem/chptr8/821.pdf