

## Weed Control in Pines

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Weeds can damage pine trees grown in plantations seriously and in many ways. In newly planted plantations weeds will compete directly with the young seedlings for nutrition, moisture, and even sunlight. The competition from weeds can result in a decrease in the overall productivity of the tree. The tree, should it survive, will exhibit a spindly growth because it has tried to grow above the weeds present. Weeds also provide a habitat for rodents which will cause injury to the trees as well. In the publication "Guidelines for Growing and Marketing Christmas Trees in New Mexico" prepared by the Forsetry Division, and Department of Horticulture, New Mexico State University, they recommend that weed control be done at least for two years following planting.

In discussing weed control options it is important to first spend some time with weed identification - knowing the weeds to be controlled.

Correct identification of the weeds present will assist in the planning of a weed control program. Not only should they be identified, but it is to the growers advantage to know certain characteristics of the weeds, such as:

1. Life cycle - is it an annual, biennial, or is it a perennial.
2. Reproduction - does it reproduce only from seed (annual and biennial)  
- does it reproduce from seed and from some type of vegetative structure, rhizomes, stolons, crowns, etc., (perennials).

The winter annual grasses (those which germinate in the fall and mature in the spring of the following year) most commonly found in pine plantations in New Mexico include rescuegrass and downy brome. With the commonest winter annual broadleaves being London rocket, flixweed, and tansymustard. It has been found that the more common summer annuals (those which germinate in the spring and mature in the fall of the same year) include, for the grasses, field sandbur, barnyardgrass, junglerice, foxtail species, and Southwestern cupgrass. The more prevalent summer annual broadleaves include Russian thistle, kochia, pigweed, carelessweed, annual morningglories, and marestalk.

There are no major biennial problem weeds but with the perennial weeds there are several of major concern. The simple perennials (those which do not have branching underground vegetative structures) most commonly found would be dandelion and curled dock. The creeping perennials (those which do have the branching underground reproductive structures) of greatest concern include, johnsongrass, bermudagrass, yellow and purple nutsedge, for the grass and grass-like plants and field bindweed, hog potato, Texas blueweed, and silverleaf nightshade as the major creeping perennials found.

In discussing weed control or management in pine tree plantations there are two options to consider, cultivation and herbicides. With cultivation there have been some concerns expressed:

1. Inability to control weeds near the trees without the possibility of some injury to the roots or the young trees themselves.
2. Cultivation tends to create favorable conditions for the germination of weeds near the soil surface. It also brings new seeds up from deeper in the soil.
3. Cultivation often aids in the dispersal of perennial weeds through the breaking up and spreading of the vegetative parts of the plants.
4. With cultivation there is no residual control and repeat operations are going to be required for season-long control.

The use of herbicides is often, as Robert Neumann and Dr. Fisher reported last year, the method which requires the least amount of physical effort to reach an acceptable level of control.

When using herbicides it is important that the grower read and understand the information on the herbicide label. By reading the label the following information can be found:

1. Rates of Application - which will vary with soil type, weed species, and timing of application.
2. Timing of Application - is the herbicide to be applied preemergence (before the weeds emerge) or postemergence (after the weeds emerge). Can the herbicide be applied when establishing a plantation or to established trees, or both.
3. Weeds Controlled - (here is where it is realized the importance of weed identification), will the herbicide control the weeds of concern.
4. The grower find out whether the herbicide of choice can be applied to the tree species grown in the plantation.
5. Information dealing with the handling, storage, disposal, etc.

In discussing the chemical weed control options available it is found that there are not many herbicides which are labelled for use in pine tree plantations. Along with this limited listing, we also find by reading the label that the pine tree species for which they are labelled for varies as application timing, rates of application, method of incorporation, and labelled pine tree species are presented.

Herbicide	Application*			Per Acre Rate	Incorp.	Weeds*	
	Timing	At Plant	Est.			G	B
Treflan E.C	Pre	Yes	Yes	1.0-2.0 pts	Mech	S	S
Pine Species: Austrian, Red, White, Scotch, Loblolly and Japanese Black							
Surflan A.S.	Pre	Yes	Yes	4.0-8.0 pts	Water or Mech	S	S
Pine Species: Canary Island, Mountain, Eastern White, Japanese Black, Coulter, Scotch, Virginia Monterey, and Mugho							
Dacthal 75W	Pre	Yes	Yes	14.0-16.0 lbs.	Mech	S	S
Pine Species: All Species							
Ronstar G	Pre	No	Yes	100-200 lbs.	Water	F	S
Pine Species: Austrian, Scotch, Norway, Stone, Japanese Black, Loblolly, Slash, Eastern White							
Goal 1.6E	Pre & Post	Yes	Yes	1.25-10.0 pts.	Water	S	S
Pine Species: Eastern White, Loblolly, Lodgepole, Ponderosa, Shortleaf, Slash, Virginia, and Longleaf							
Velpar L	Pre & Post	Yes	Yes	4.0-8.0 pts.	Water	S	S
Pine Species: Austrian, Ponderosa, and Scotch							
Poast	Post	Yes	Yes	1.5-2.5 pts	None	M	N
Pine Species: Austrian, Jack, Japanese Black, Japanese White, Loblolly, Mugho, Red, Scotch, Shore, Slash, Southern, Virginia, Western Yellow, and White							
Fusilade 2000	Post	Yes	Yes	2.0-3.0 pts.	None	M	N
Pine Species: Canary Island, Austrian, Black, Western Ponderosa, Red, Eastern White, Scotch, Mexican Border, and Dwarf Swiss Mountain							
Roundup	Post	No	Yes	3.0-4.0 pts.	None	M	M
Pine Species: None Specific - does list some cautions regarding certain species							

\* Application:

Pre: Preemergence  
Post: Postemergence

At Plant: Can apply at or during planting.

Est: Can apply to established plantings.

\* Weeds:

G: Grassy Weeds  
B: Broadleaf Weeds

N: None on label

F: Few on label

S: Some on label

M: Many on label

When looking at the previous table there is no reference made whether the grasses or broadleaves that are listed as being controlled are annual or perennial, this information can be gleaned by reading the label. It also shows that some of these herbicides can be watered into the soil while others have to be mechanically incorporated. These two pieces of information support the need to read and understand the herbicide label before purchasing the material.

When planning a weed management program it may be well to consider using an integrated approach, one which uses mechanical control between the trees, should the tree spacing allow for it, and herbicides around the trees.

In summary, it is important to know what your weeds are and certain characteristics about those weeds. With this in mind then a program of weed management can be tailored to address the problems in the plantation. Should the plan include the use of herbicides, then be sure that the time is taken to read and understand the label completely. By doing this the potential for injury will certainly be reduced. In looking at the direction that needs to be taken in this particular area, it becomes apparent, quickly, that the first thing that needs to be done is to get the pine species of interest listed on the label. This is going to require work done by industry and research and extension personnel.