

D. Don Baldwin, Montana State Forestry Department. Subject: Mechanical Means of Weed Control in Forest Nurseries.

MECHANICAL MEANS OF WEED CONTROL IN FOREST NURSERIES

by  
Don Baldwin, Nurseryman  
Montana State Forestry Department  
Missoula, Montana

The topic assigned to me can be handled in a few minutes as there is not, to my knowledge, a wide choice of mechanical implements for weed control in nurseries. The best machines, in my opinion, are the mold board plow, tandem disc, spike tooth harrow and the duckfoot. Their main usefulness is in preparing land for seeding or planting. The preparation should be started in the spring of the year a year before the land is to be used. This is summerfallow. Fallow, to be effective, must be kept clean. If possible, it should be irrigated at least several times during the summer to hasten germination of the

weed seeds in the ground so they can be destroyed through cultivation. I'm sure we have all found through experience that it is highly desirable to plant or seed on ground that has been fallowed for a year. There are far fewer weeds to remove in the seed beds or transplant fields that have been fallowed. For this reason I say the mold board plow and the necessary tillage implements for doing a good job of clean summerfallow are the best pieces of equipment a nurseryman has for weed control.

Some of you may like to grow a green manure crop on your idle fields. This is a good practice. Fallow operations for elimination of weeds can be carried on after the green manure crop is turned under. In our nursery we don't use green manure crops. We keep the idle fields bare so we can pick rocks on them. We get our organic matter through the addition of sawdust or barnyard manure.

There are several pieces of equipment which have limited use in nursery crops. One is the common spike tooth harrow. This is the old-fashioned drag which is found on almost every farm. The spikes or teeth are about 6 inches long. The other implement is the flexible coil tine harrow. These harrows are available with either 10 or 14 inch tines. Sugar beet growers frequently use these flexible tine harrows in their beet fields for weed control and to thin the beets. Both of the implements I have just mentioned may under certain conditions be used for mechanical weed control on nursery crops. You use them by pulling them directly over the bed. The flexible tooth one has an advantage in that the teeth are flexible and also longer which provides more clearance. The secret of getting satisfactory results with these implements is in the timing of the operation.

The weeds must be small, preferably just germinating; and the ground must be loose and soft. If the weeds are too big or the ground too hard, this over-the-top tillage won't buy you a thing. It is a waste of time. As I mentioned before, the key point is in the timing and this gets down to almost the day. Certainly the limit is within the range of just two or three days. If there happens to be a rainy spell, you are apt to lose the chance to kill any weeds with over-the-row cultivation. In regard to injury to the trees or pulling trees out of the ground, there isn't as much danger as you would suspect. It is, however, something that has to be watched and some age classes of some species are more subject to injury than others. On the whole, I think you will find that only an occasional tree is injured or pulled out, but it is a possibility and if you try this method of weed control I suggest you use an "old hand" on the job and not a new man unless you are going to be there with him.

A machine which I haven't used because we don't have one, but which looks very practical, is the miniature roto tiller that works between the rows either in seed beds or transplant rows. There was a picture of one of these machines on the front cover of the June 1962 (No. 52) issue of "Tree Planter's Notes." The machine in the picture is at the Oregon State Forest Nursery at Elkton, Oregon. It is mounted on a Model G Allis-Chalmers. I doubt if the tillage part of the machine is available commercially. This is another tool you have to make yourself, or have made if you want one. We saw pictures of this machine in operation in the movie Lyle Baker showed us just before lunch. Lyle is the man to see if you are interested in one of these cultivating implements.