

OPERATIONAL PROBLEMS WITH HERBICIDES

Frank Vande Linde 1/

Abstract. Nurserymen are looking for new herbicides to offset cost in seedling production. Mineral spirits is no longer a cheap herbicide. Several herbicides have been tested with good results and application made to EPA for registration. Other products such as TOK look very favorable, but require additional testing. A new chemical is recommended for nutgrass control. Herbicides for hardwood weed control are scarce, however some progress is being made. Nurserymen need to know what herbicides are available and dependable for nursery use.

Uncertainties in the petroleum industry coupled with the rapid price increase of mineral spirits has many nurserymen not only worried but searching for new herbicides.

Mineral spirits has been the old standby for over 40 years. Mineral spirits is safe to use, easy to apply, and gives good grass and weed control without damage to seedlings. Two major problems face mineral spirits for continued nursery use: (1) rising cost and (2) registration and labeling for nursery use in this area.

What will nurserymen do if they lose mineral spirits as a herbicide? What are the alternatives? This kind of thinking led into very worthwhile discussion on matters facing nurserymen. Many issues were discussed - some difficult to summarize - however, the two sessions came across loud and clear that we do have dedicated people growing seedlings for the Southeast. They all have problems, some less than others, but they continue working together to solve these problems and grow quality seedlings at the lowest possible cost. All are concerned about what the future holds with EPA registration and

1/ Research Forester, Brunswick Pulp Land Company, Brunswick, Georgia

OSHA regulation.

We discussed with Dr. Gjerstad and David South the Auburn University Nursery Weed Control Cooperative. Many herbicides have been screened through this project. Results over the past two years have been very encouraging.

David South reported that results from 1974 experiments indicated that several herbicides could provide effective, long lasting pre-emergence control in pine seedbeds. These were bifenox (Modown), butralin (Amex-820) and napropamide (Devrinol). These herbicides were further tested in 1975 to provide EPA with data requested for labeling. In February, 1976, they supplied EPA with two years of data and requested that these herbicides be registered for pre-emergent weed control in pine seedbeds. They are now awaiting the permission of EPA and the consent of the chemical companies. An example of their research was observed during the field trip.

Much interest was expressed in TOK. This herbicide is now being tested in several areas. Preliminary results are very promising. Results show that TOK is equal to or better than mineral spirits with only one-half the cost.

Brunswick Pulp Land Company reported on two nursery trial studies with TOK, and recommended cooperation among nurserymen toward registration of this product. The Auburn staff promised their help in setting up proper research to acquire registration of TOK.

Trial studies on Destin are very encouraging, but further testing is necessary for registration and labeling. David South reported that Enide

is the only labeled (legal) pre-emergent herbicide for use in pine seed beds. Treflan and Dymid were okayed by EPA but the companies involved would not label these compounds. Although chemicals are cleared through EPA, they cannot be legally used unless the companies accept liability involved in labeling.

The nutgrass problem was discussed. Two solutions worthy of reporting are: (1) Methyl Bromide is most widely used for nutgrass control. Several concurred that Methyl Bromide will give about 80% control the first year, a carry-over of about 60% the second year, with no help the third year. If Methyl Bromide is used, it will be necessary to apply every third year. (2) A very good solution came from David South. He suggested that in areas where nutgrass is a problem, to rotate crops if possible, allowing the nutgrass areas to remain fallow, preparing the soil for good nutgrass germination. Allow grass to progress to the two or three leaf stage, then hit with the herbicide Round-up (2 lbs/A). After the kill, prepare soil and allow remaining nutgrass tubers to germinate and hit again with Round-up. This herbicide is expensive (\$64. 00/gallon), so follow instructions and take necessary precautions. It was strongly recommended by the group that nutgrass treatment be administered ahead of cover crops or during a fallow year when area would not be planted to seedlings. Avoid following too closely with seedling crops after treatment.

Growing quality hardwood seedlings continues to be a headache to nurserymen because of weed problems. Several promising pre- and post-emergent herbicides for hardwoods are being tested but frankly there

is not much to recommend. Progress will be made as research continues, but several years of research will be required to register and label herbicides for hardwoods. We can recommend herbicides that have promise, but urge you to proceed with caution only after you acquire an experimental permit. Remember that conditions change with soil texture and soil pH. A recommendation that works for one nursery will not necessarily apply to another. Use on a trial basis before applying to the whole crop. Treflan, Caparol, and Destin used as a pre- and post-emergent are being used on hardwoods with varying degrees of success. Several new products are being tested that work well on grasses. These products will be further tested and may prove useful with hardwoods. Mineral spirits will work well with sweetgum.

There is a real need for a listing of herbicides that have possibilities in forest tree nurseries. A separate listing should be made of herbicides that have been tried and are no longer recommended for nursery use. Once this information is gathered, it should be placed in the hands of every nurseryman. With a few exceptions, we are still floundering with research on herbicides. Nurserymen need answers to these questions:

1. Is the herbicide safe to use in forest tree nurseries?
2. Is it registered and labeled for nursery use?
3. If not registered, is registration being pursued?
4. What species is the product recommended for?
5. What is the recommended rate of application?
6. How and when do you apply?

7. What results can be expected?
8. What are possible dangers, what precautions should be followed?
9. Where can the product be purchased?

Listing herbicides that are useful and answering questions for nurserymen is no small task. Several years of research will probably be required, but there is no time like the present to start. I suggest that we all cooperate with programs such as the Auburn Forest Nursery Weed Control program. It is just possible that they have many answers to these questions now.