

NURSERY PRODUCTION OF HARDWOOD

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Ashe Nursery has for many years produced hardwood seedlings with varying success. For example, production in 1955 included 125,000 green ash, and 2,000 yellow poplar. In 1964, production had increased to a total of 1,030,000 seedlings, including 908,000 baldcypress and 70,000 cottonwood cuttings.

During this period, production was affected as much by the seed available as by the demand for seedlings. After production of 1,030,000 seedlings in 1964, production fell to 333,000 this year. The drastic drop occurred because no seed were available to produce the needed 750,000 baldcypress.

Hardwood seed collection has always presented a number of problems. Seldom have we had hardwood seed to carry over in storage. An exception was the 1963 collection of yellow poplar. We have two or three years' supply in storage.

Seed storage directions available do not pennit taking advantage of the storage facilities that we may have acquired. Until recently, we had no choice except to store hardwood seed at below freezing temperatures because pine seed needed this temperature. This doubtlessly caused considerable damage to seed such as acorns. At what temperature do seed insects become inactive? What moisture content should be maintained in storage?

Hardwood seed are difficult to adapt to conventional planting equipment. As a result, much of our seed is dropped in furrows by hand just as primordial man planted his corn. This will be illustrated in a moment with a picture.

As we know, most of our tree seed is used as food by wildlife. Only a few years ago we had considerable difficulty with our acorns. Our aim was to use them to produce oak seedlings; on the other hand, there were the crows with their aim to use them for food as quickly as they were planted. Some of the results of this difference in opinion are shown in these pictures.

1. Shows our method of hand planting.
2. A closer view showing the acorns treated with the repellent, Anthraquinone.

As a check, part of another bed was sown with untreated acorns and part-treated.

3. This shows the results. As soon as we left the area, the crows immediately carried away the untreated acorns. When they reached the treated acorns, they did not disturb them and left the area.

Since then, all of our acorns and other seed of this type have been repellent treated. There seems to have been no detrimental effect on germination.

Hardwood seed germinate erratically. On occasion we get almost perfect germination; on others, it is indifferent and too many times the seed simply disappear as they are covered with mulch. Sometimes, plants from this seed appear a year or two later to confound the situation.

However, there is one thing we can always count on in these beds and that is the prolific germination of grass and weeds.

We have applied every promising herbicide to the hardwood beds. Some of those used were Vapam, methyl bromide, Trizone, Simazine, and Kloben. We expect to use others.

We have not found one that could be used with confidence to produce the same results each time. Some helped produce a superior crop of grass and weeds.

There is a rising public interest in planting and growing hardwood. We need to learn and use the best methods available, to grow the planting stock that will be needed to meet this demand.

DISCUSSION TO: Newton Churchwell, Marion Walker, and Johnsey King

COMMENTS by Mr. Peterson:

One thing we might do when using chemicals for tests is to get the opinion of the Company who produces these chemicals as to their effectiveness. Most of them are distributed by a technical representative. fly and large, I've found that they are usually on the conservative side. You might think they'd want to promote these materials and certainly they want to get them into wide use, but they don't want a product out that is going to damage a lot of products. They like to have limited scale tests. I find that on most of our studies we've checked with the Company and got some pretty useful information.

COMMENTS by Mr. Larsen:

We've had probably half-dozen or more different chemicals in small plot studies preparatory to field testing. We've found Simazine a wonderful control for weeds and particularly for sycamore. We use it as a pre-emergence.

Q. Was Mycorrhize killed in the death of your baldcypress, Mr. King?

A. (King) I'll say that it wasn't, but there is no definite proof of that. However, we have used it successfully on longleaf for 3, 4, or 5 years now and it's one of the chemicals that causes build up in the soil. We've been afraid of that and try to watch it. Put, there is no evidence it's killed Mycorrhize.

While I'm here, I might mention that when you get or try a new chemical, and ask the Company for recommendations, they don't have any because they don't want to take the blame for the damage you're probably going to do with it. So it's up to you to keep your test on a small scale and not kill off everything you have because they really don't know. They haven't tested it on tree seedlings. They might have a little information on ornamental varieties and that's about the extent of it. When you use it you use it without their encouragement and certainly on your own.

by Mr. Hitt:

I'm inclined to back up Johnsey's comment because we're coming to find out about you critters, you nurserymen - you know. If it goes with putting on the "tides" as it does with seed, once in a while you fellows go out there and put on a little extra bit and then add a few ounces more just in case you weren't right the first time. You may be doing the same thing with herbicides or fungicides.

COMMENTS by Mr. Smith:

Talking about these "cides", I was just wondering if there was anyway of blasting the ideas out of the people who have it and get some of that stuff spread around.

COMMENTS by Mr. Hitt:

I think that caution of their part is probably good.

COMMENTS by Mr. Walley:

In relation to blasting information out of chemical companies, how about blasting out researchers for information?

COMMENTS by Mr. Hitt:

This is too often true. There are volumes and volumes which have been documented and that's where they stay simply because there is a gap between the research man and the man in the field. This gap is very broad and it's getting broader every day. I'm sure they realize this and we do too. Researchers are not authorized to go out and broadcast it though. Most of them are willing to do this though and that's why at meetings, such as this, we like to get them in because we know they are a welcomed addition to our programs. We do have to remind them though that they are talking to nurserymen who are going to use it and not to fellow colleagues.

COMMENTS by Mr. Peterson:

One thing we don't use enough is to find out what people on other crops are doing. There is an awful lot of weed control work going on in wheats, oats, rye, etc., and many other things. I think that often people working with trees do not gain enough information from the people working on other crops. I don't think we use extension people near enough and they are willing to cooperate if they are asked.

COMMENTS by Mr. Belcher:

One thing I might mention here that will strike kind of close to home; is one of the things that is usually overlooked. This is the fact that most of you have samples, or have gained samples, of most of these chemicals at one time or another and tried them; but if you failed, you don't want to mention it. You might tell the nearest nurseryman to you when you get together, but you always try to keep this out of print. I think this is one thing that would help going into a newsletter or proceedings so that the others would be aware of this when they tried it.

COMMENTS by Mr. Morris:

The chemical companies are realizing that when they don't tell the true story, it does them more harm than if they did. They have produced it, they've done their job, and people have used it; but they haven't told their story. The people in the city, for example, get all of this fine food, they don't know where it comes from and they don't realize its had to have all of this chemical protection to get it. Someone comes along and tells them the chemicals are wrong- - they believe it, what else can they do? They haven't been told.

- Q. These black walnuts that are stratified and shipped out for planting, do any of you know if after they are planted if there is damage to them by rodents and other things? Do they grow? Do they get good results? If so, why wouldn't red oak acorns work the same way rather than planting oaks and shipping seedlings and get a 2 or 3 year set back in growth? Why not plant the acorns, get a tree started, and let it grow? We find it works pretty good in our yard.
- A. (Churchwell) We followed up some black walnut. Unless they leave them in the house and deteriorate, they do good. If they plant them late enough they don't have the rodent problem. We recommend about March.
- A. (Engstrom) We have checked on a few and we know they grow real good. Acorns grow good from seed and if planted promptly they'll make good seedlings in a short time. We usually recommend they don't plant them in pure stands. They are usually along some creek with hardwood seedlings. We hold our walnuts until it's time to plant and get better survival this way from rodents. It seems like this acorn deal would be all right. We have planted the acorns, some years back, it was all right. We also planted acorns in nursery rows--white, red, and burr oak. Burr oak would lend itself very readily to planting as individual trees. When you plant them, they're ready to germinate and go. It's a very large nut and easy to handle.

COMMENTS by Mr. Oliphant:

The NF in North Carolina along with Bent Creek at the Southeastern Experiment Station is going to make an administrative study of which we'll check two things - depth of planting and season of planting. They will plant some in the fall and two different times in the spring. Plant 1-inch, 2-inch, and 4-inch depth with red oak. They've had some indication on white oak and some on red oak that they do get better results in the spring and that they may get better results from planting deeper. The critters can't find them as easily. We're going to check this out on every mountain district in the NF in North Carolina this year.

- Q. In the shipping of the nut after stratification, I'm wondering if the moisture or drying out wouldn't be a critical factor? Do you ship them in polyethylene bag, container, or something?
- A. Engstrom) We put them in a bag, wrap them in polyethylene, and put them in a cardboard box. We mark them fragile. I doubt they ever arrive dry, but they might arrive broken. They are really fragile after stratification.

Mr. Earl Belcher served as Secretary for both Conferences. He and other members of the Regeneration Branch have edited the papers and the recorded discussion sessions. Direct quotes were generally avoided in the Proceedings unless absolutely necessary for clarity or emphasis. Technical difficulties with the recording instrument made documentation of several of the discussion periods impossible.