

INDUSTRY'S PART AND INTEREST IN THE TREE IMPROVEMENT MOVEMENT

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Your invitation to speak on this panel is a prime opportunity for any tree improvement worker. Programs in progress are presently in the stage at which nurserymen must be asked for help. Tree improvement is -- the nurseryman's business. Although others work on it, tree improvement will soon be yours to put in practice by actually producing the planting stock. Your interest in seed quality and seed source started this work. Other people have boosted and refined your profession's ideas. Now the ball is ready to pass back to you. You are the people most capable of handling this program's end product--the improved seed.

Within the next few years the fellows with pointed heads and breeding fatigue will deliver the first orchard-produced seed for nursery handling. Many of you are already making extra efforts to satisfy the demands of customers who want tailor-made seedlings.

The pressure will increase as more orchard seed is brought in. There is good reason for this. Some organizations will have hundreds of thousands of dollars invested before the first commercial collection is made.

Don't be surprised if you are asked to perform miracles with a pound of seed that has a \$20,000 investment behind it. This sounds fantastic, but it is an approaching reality that will have to be dealt with many times during the next few years. Even the annual orchard cost of cultivation and cone collection will make the seed cost at least double or triple what you pay for ordinary seed, without even considering orchard establishment costs.

Eventually your customers will ask for seedlings of specific size, in total length, stem diameter, and top to root ratio. As the forester's knowledge builds up regarding the planted seedling's reaction to various soil conditions, it will be desirable to supply seedlings that are specifically suited to the planting site. You will probably have to more closely coordinate lifting and handling dates with expected out-planting schedules so that loss by storage will be reduced.

Closer identification of seed lots and use of smaller seedling bed divisions will become essential. Eventually the critical point will be reached when costs become more than the expected advantage is worth. Working out reasonable charges for the additional work will become one of a nurseryman's most challenging problems, since past experience will be limited to a less intensive practice.

Nurserymen, foresters, and tree improvement workers, both public and industrial, have a major task ahead; it will be their responsibility to keep the public well informed because both public forestry agencies and industry depend on the mass of people who vote and also hold the vast

majority of the forest acreage. Industry is well aware of this interdependence existing between itself as a wood user and the small land holder as a grower of raw material. The wood using industry uses nearly 100 percent of the forest harvest, while owning only 13 percent of the forest land.

We can easily foresee two areas in which it would be advisable for all land holders to be informed about tree improvement. First, it will be necessary to let people know about the difference in expected value between ordinary planting stock and improved stock. Secondly, they should be presented the true picture of the advantages to be gained by selecting the improved stock best suited to the planting site. I recall a comment made when it was announced to the public that drought-resistant seedlings were available. It seems that more buyers thought these improved seedlings would grow in a concrete sidewalk!

Caution is needed; many potential planters have been needlessly discouraged by the failure of "cure all" stock. A good example of this is the slash pine that was transported beyond its climatic range into Arkansas and northern Texas.

Certainly you know of these future possible developments--perhaps there are others. They are put together in this discussion of industry's interest in tree improvement work to emphasize that most of our interests are mutual. What is good for the majority of land holders is indirectly beneficial to you and also is necessary to the security and growth of industry.

In the recent years during which tree improvement work has flourished, industrial forest management has grown out of the practice of planting trees in a "hit or miss" profit gamble to the point that most proposed forest regeneration projects are evaluated for economic return and are given an investment priority. Tree improvement has been selected as a promising project in which to invest.

By looking at the map and observing what is being done, it is easy to get an idea of the large effort industry is making. This information is presented as a collection of data gathered by questionnaire. The figures may be low since a few questionnaires were not answered; however, most of the work being done is mentioned. It is hoped that no one is slighted by any chance omission.

To avoid the use of somewhat dry figures and statistics, only a few brief observations will be made.

(Visual Aid - States and Projects)

In Mississippi .2 companies plan at least .22 acres of orchards. These will serve 1,290,000 acres of company land.

Arkansas has A industries planning 91 acres of orchards. These orchards will supply seed for 1,990,000 acres of land.

Oklahoma has 1 industrial organization that is considering a small orchard to serve about 620,000 acres of land.

In Texas, 1 company plans a acres to serve 350,000 acres of company owned land.

Louisiana takes the blue ribbon for progress with 6 industries planning 101 acres of orchard. These companies hold 1,290,000 acres of forest land to be served.

In this 5-state area, then, there is a total of 32E acres of orchard planned by 12 state segments of companies which intend to use the potential 16,400 pounds of seed on 5,000,000 acres of their holdings. FIVE MILLION ACRES! When there are 69 MILLION ACRES of all forest ownership categories to provide for! Actually, the picture is better than that.

Seed production areas are also a part of industry's move toward improving the forests. These are natural stands of trees of cone bearing age. The trees are of the best quality and stocking available. Stands of this sort are cleared of all ordinary trees, and the select quality trees are held for cone production. It takes about 40 acres of isolation strip to keep a 5-acre area from being strongly polluted by pollen from trees outside the area. Industry has developed roughly 277 acres of these in this 5-state area. In full use, these would supply seed to regenerate around 65,000 acres per year, until the more improved orchard seed is produced.

If the planned orchard and existing seed production area potentials were added together, there would be enough seed to plant about 311,000 acres of forest land each year or just a little less than was actually planted in these 5 states in 1961. And thinking of that amount of seed in another way, it would handle regeneration needs for 15-1/2 million acres of forest land managed on a clearcut and plant basis using a 50-year rotation age or 50 years from seedling to final harvest.

An impressive amount of money is involved. Establishment and maintenance costs for orchards have been reported as being from \$50 to \$350 per acre per year and seed production areas run about \$20 per acre per year. If we consider orchards at the moderate cost level of \$150 per acre per year, then industry invests in this facet alone 350,000 per year in the 5 states being discussed. Considering that 10 years elapse before commercial amounts of seed develop, industry will have about \$500,000 invested in orchard establishment alone.

Industry's orchards and seed production areas, as you can see, will furnish only a drop in the bucket of the need. Other land holdings, some too small in size to support an orchard, would be more productive if stocked with superior trees.

To insure that these owners have access to improved stock, many industry people involved in tree improvement spend considerable time and effort cooperating with public agencies.

Orchards are only one phase of tree improvement backed by industry. Many companies in this 5-state area contribute cash to cooperative research. As I mentioned before, others grow moderately improved seed on seed production areas developed from choice natural stands, until their own orchards can produce in quantity. One company, at least, leases seed production areas to a state forestry commission. Many companies with no formal program locate and hold superior trees for state use.

Industry's interest in this project naturally includes an expected profit. Forest geneticists have given a variety of estimates on how much improvement will result from this early effort. Industry expects a 5 percent improvement almost as a certainty, and hopes to realize a 10 percent improvement. Let's see what this means when it is expressed in terms of dollars and cents. Assume the following conservation conditions:

(Visual Aid - Cuts and Gains)

1. Only a 5 percent overall improvement will result
2. The going interest rate is 5 percent
3. A 40-year rotation period
4. Cutting will be done every 5 years, cordwood and posts until age 30, and sawlogs, poles, and veneer logs thereafter at \$40 per MBF average price
5. The improved stand and the ordinary stand will be cut back to the same stocking level every time
6. An industry's cutting schedule and growth table for ordinary plantations will be used

Using these conservative assumed conditions, let's compare the difference in the income from a stand of improved trees with that from a stand of ordinary trees. In 40 years the stand of improved trees should produce \$14.80 per acre more than a stand of ordinary trees. The average annual increase is \$0.37 per acre.

One method used by economists for evaluating investments is to discount future incomes and costs to their values today. In other words, at a given rate of interest, what is today's value of a dollar of income to be received 40 years from now? Applying this method of financial evaluation to the comparison of expected incomes from a stand of improved trees with a stand of ordinary trees, we find that the value of 1 acre of improved seedlings is worth \$4.22 more than 1 acre of ordinary seedlings.

A truly striking figure results when the difference is expressed in yet another way. If a bushel of cones provides stock to plant 15 acres, then the difference in value between a bushel of improved cones would be roughly **\$63**. An investor could break even then, if he paid \$2.50 (the price of ordinary cones) plus \$63 per bushel for improved cones

when only 5 percent faster growth is involved.

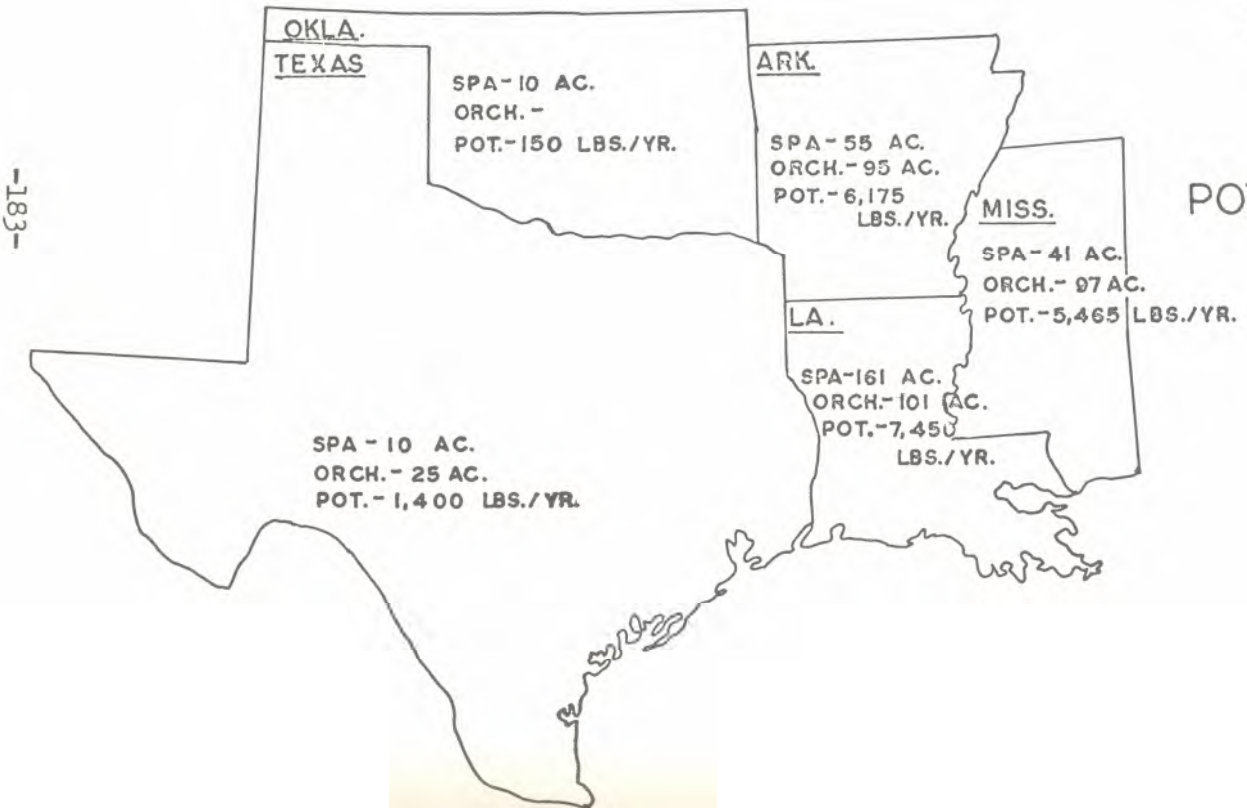
It is estimated that there are over 4,000,000 acres of pine plantations in this 5-state area. Had these plantations been of 5 percent improved stock, the total expected increased income would be \$60,000,000.

A final point to be brought up is that the anticipated far-reaching effect of this project on the economic welfare of all people has caused many industries, highly competitive in other aspects of their business, to see the need for a cooperative effort. Today, selected tree material and even knowledge and skills are freely shared with other industries and public agencies.

That covers the highlights of industry's interest in tree improvement. I'd like to review the high points of this discussion:

- First.--Nurserymen are vital to the success of this effort.
- Second.--Industry is spending a tremendous amount of time and money getting the endeavor under way.
- Third.--Industry expects to realize a profit on this investment through the greater productivity of improved stocking on industry land. The sharing with others of this technical knowledge will no doubt bring about increased productivity on their lands, thus contributing to the overall economy of this area.

INDUSTRY'S
SEED PRODUCTION
AND
PLANNED ORCHARD
AREAS
WITH
POTENTIAL PRODUCTION



5% GROWTH

SUM OF GAINS DISCOUNTED AT 5% TO PRESENT VALUE - \$4.22/ACRE.
 IF TIME & INTEREST RATE ARE DISREGARDED, GAIN IN INCOME IS \$14.80.
 IN A 40 YEAR ROTATION, \$14.80 AVERAGES \$0.37/ACRE/YEAR.

