MEETING OUR CHALLENGES - TOGETHER

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Abstract.--In emphasizing the reforestation needs of the nation and region, two challenges are issued to the Intermountain nurserymen. They are encouraged to annually assist the field forester in assessing the causes of plantation mortality and are asked to submit for publication, more complete information on present nursery capacities.

It may not be too smart a move, especially when I'm outnumbered, to be suggesting that you fellows have the time to undertake additional activities, but this morning I offer two challenges to you as the suppliers of nursery stock for the Intermountain region.

A year ago this month, many of us were meeting in Denver to discuss containerized reforestation. At that meeting, I was asked one question that took me totally by surprise. In discussing the survival on a particular outplanting, I related the poor survival of the bareroot seedlings and of two of the container seedlots, fully accounting for the causes of mortality in the greenhouse grown seedlings.

I described the container mortality as being caused by improper conditioning of stock or a lack of a trace element in the fertilizer until the deficiency symptoms were advanced or other such reasons.

The question then was, "Why do you go to great lengths to justify the mortality in the container stock, yet say the bareroot control just died?"

He had a good point. Here I was, making it sound like the bareroot seedlings had a death syndrome - no will to live. I was writing them off, and to that point in time, with a clear conscience.

My initial reaction was to wonder if the research effort was so terribly out of balance we were actually downgrading the potential of conventional nursery stock. I haven't pursued that hypothesis.

There really was a logical answer to the question, For sixteen weeks, those containerized trees and I shared a daily visit. I saw that stock germinate, go through its childhood diseases, suffer growing pains, gp on a low nitrogen diet, get lifted, sorted, shipped, planted and then try to grow through hard frosts, baking sun, excess rain one month, acrd drought the next.

For the trees that didn't survive, I saw them from birth to death and could dig back through their total life and sift their treatment for abuses and errors. And that's the key.

With the bareroot stock, I didn't see the trees until they were at the planting site and already two years old.

In this generation of multiple-disciplinary teams, when "experts" from many fields get together to mutually solve a problem or pat each other on the back, I challenge you to get out of your sheltered environs and join the team.

The field forester would like to have you give him help in identifying causes of plantation mortality. I'm sure you, as nurserymen, would like to hear reasons other than the nursery shipped poor stock. Unless you help - that will be the reason typically given.

Maybe further elaboration will emphasize the importance of your expertise outside of the nursery. You deal with about 3% of the tree's life, based upon a 60 year rotation. But that 3% is the beginning, and as has been shown by many researchers, can have a continuing influence for years to come.

Financially, that planted seedling has cost 150 on its way to becoming worth $100, which for you is an investment in your reputation.

Today we talk about the systems approach to all activities. One of our goals is successful reforestation. If we were to use the systems concept to achieve this end, we may consider the following as elements of the system. For this example I'll use the containerized approach, but with a few elemental modifications, bareroot applies the same.

First, physiology

Obviously, if you don't know the environmental needs of a seedling, you most likely can't make it grow. But more important, if you don't know the optimum environmental conditions, you aren't efficiently utilizing your resource potential, especially the financial resource.

Second, the container

Both the type and design are important. You must harmonize the biological need with the economical constraints. You must decide between container versus containerless systems. Consideration also needs to be given to size, shape and constructural material.

Third, container soils

While work-to-date indicates the desirability of a 1:1 peat mossvermiculite mixture for Douglas-fir and western hemlock, additional work may suggest a varied mixture for other species or different sized containers.

Fourth, greenhouse

It appears that plastic or fiberglass covered greenhouses offer the best opportunities for maximizing environmental control with a minimum of investment. Additional work and energy rates will answer local questions of heating and cooling needs and designs.

Fifth, seed

While we can measure the potential germination of a seedlot, we need a way of guaranteeing that each seed sown in a container will produce a plantable seedling of high quality. While blank cavities are expensive to care for in the greenhouse, so is overseeding with subsequent transplanting and thinning. The use of genetically improved seed is beginning to positively influence this factor.

Sixth, insects and disease

This can be a critical factor. If growing conditions are optimized for trees, they are usually condusive to increased insect and disease activity.

Seventh, mycorrhizae

Many foresters don't know what this is, let alone assess its importance in seedling production.

Eighth, handling

Weight and bulk do present handling and transportation problems which are minimal with bareroot seedlings, but these disadvantages are offset by the advantages of less land area involved in production, less expensive machinery and by handling a uniform sized package.

Ninth, planting personnel

The success of any reforestation project is eventually going to be determined by the individual that plants the seedling. With containerized stock, it's difficult to misplant a rigid package, but it still can be done.

Tenth, planting site ecology

If the field forester will identify the ecological factors of the planting site, such as soil texture, soil moisture holding capacity, annual precipitation, wind potential, etc., it's quite feasible you could custom grow, in a controlled environment, a seedling that is biologically best suited to cope with the site's adversities.

and Eleventh, season of planting

If a tree planter can plant uniform seedlings at a faster daily rate, you won't need to stretch your planting season to handle an expanded planting program.

Of the eleven mentioned factors, seven involve your work at the nursery and four are supposedly the concern of the field foresters. My notion is that all eleven should be the concern of both you and the forester.

For example, if germanative energy of a particular seedlot is low, and many trees die after outplanting because of an inability to withstand environmental stress, how can the land manager accurately assess the cause of mortality unless you and the field forester communicate about the seedlings development, care, and outplanting. And where is a better place to discuss a particular seedling than standing in the field looking at it.

I'm not advocating abdicating your job responsibilities to spend weeks following around a planting supervisor, but when your lifting season is over, our planting season is still going on. Just two or three days in the brush each spring, and again during plantation survival checks in the late summer, might open both your eyes and the field forester's.

Maybe another way to convince you of our need for your help is to suggest that, nationally, we aren't yet achieving our goal of having every potentially forested acre optimally stocked and optimally growing. For many years, the Federal Government has undertaken the responsibility of compiling acres and numbers of trees planted annually. Western Forestry and Conservation Association stated by resolution at its 1974 meeting that this was only part of the job and will begin at the December 1975 meeting reporting annually the number of acres still in need of planting, and hopefully within a few years, the annual performance of those acres recently planted - survival data.

While I'm sure the initial reportings will be sketchy, they will, nevertheless, begin to quantify the magnitude of the job we together must successfully accomplish.

This will only enhance the urgency of the challenge that we as foresters must come to nursery, and you as nurserymen must come to the brush and maintain a professional interest in your stock.

The second challenge to you today is related to data reporting and is a housekeeping suggestion.

Again, as we assess the national and more importantly, the regional forestation needs, it's imperative that we as a profession know our capacity to produce the stock.

As many of you know, Frank TerBush of State and Private Forestry from Region 6 of the U. S. Forest Service, annually publishes a nursery directory for the Pacific Northwest with a few entries for the Intermountain Region.

My second challenge, therefore, is for you Intermountain nurserymen to make sure Frank has a complete list, annually, for this area.

Maybe reiteration of national fiber needs and goals is boring, but it won't hurt you to be reminded that it takes your contribution of a healthy, vigorous seedling to get the whole program moving.

John W. Gardner has stated in "The Recovery of Confidence":

"The identifying of values to which we can all give allegiance is a light preliminary exercise before the real and heroic task: to make the values live. Values have been carved on monuments and spelled out in illuminated manuscripts. We do not need more of that. They must be made to live in the acts of men."

As we move toward greater economic investments in manpower and equipment, as we feel increased pressure from alternative land uses, as rotations become shorter and as public demand for stewardship and professional proficiency increases through passage of additional forest practice and associated legislation, the reaffirmation of our vows to communicate and cooperate becomes critical.