Minutes of the CFGRP Advisory Council Meeting May 5, 1998

Announcements

1. The only modification in the CGFRP membership list is that Georgia-Pacific Timberlands is now the "The Timber Company".

2. There are currently eight graduate students in forest tree improvement at the University of Florida (four MS and four Ph.D.). CFGRP is fully funding two MS students and one Ph.D. student and is also partially funding the two remaining MS students. All other funding for students is external. Three of these eight students are graduating in 1998 and four more are graduating in 1999. As a result of these graduations, the CFGRP is searching for an outstanding Ph.D. student.

3. The 1998 Contact Persons Meeting will be hosted by St. Joseph Land and Development Company and will most likely take place in Tallahassee, Florida. In conjunction with this meeting, Dr. Bob Schmidt (University of Florida) will conduct a one-day fusiform rust workshop. We would like to thank Gene Schreiber and Heather Engelman of Tenneco Packaging Woodlands for their excellent job of hosting the 1997 Contact Persons Meeting.

Advanced-Generation Breeding and Testing

1. CFGRP slash pine breeding for the second generation will continue. The polymix pollen collected in 1998 will be distributed at the 1998 Contact Persons Meeting. Full-sib and polymix breeding will continue for two more seasons.

2. The first series of polymix tests (eight tests) were successfully planted this past winter. Special thanks go out to Rayonier and International Paper for growing the seedlings and to Dudley Huber for overseeing all of the plantings.
Research Projects

1. CFGRP will begin work on a slash pine seed orchard monitoring system for second-generation orchards as authorized at this meeting. Members with second-generation slash pine seed orchards will begin collecting data on cultural practices immediately with data collection on bulk and clonal seed yields beginning this fall.

2. A wood properties study for Florida loblolly pine will begin in late summer of 1998. The study will be carried out by a MS student, Ryan Atwood, who will be funded by CFGRP. A special grant from Weyerhaeuser Company will help pay the expenses.

Fiscal Matters

1. The budget for fiscal year 96-97, the projected budget for fiscal year 97-98, and the proposed budget for 98-99 were presented. The proposed budget for 98-99 was accepted without change.

2. Currently, CFGRP has only one membership category, full member. After much discussion, it was decided unanimously that full member will remain the only membership category.

Other Matters

1. The format and printing of the Annual Progress Report was discussed. It was the consensus that the current format and printing quality meet the needs of the cooperators, and further, that any use of color would be for member copies only and color would only be used when necessary to illustrate a point.

2. A discussion concerning the proprietary nature of CFGRP breeding values resulted in the determinations that the breeding values would not be for sale and that release of individual breeding values is prohibited.

Polymix Testing

1. Polymix tests were installed by Florida Division of Forestry, Foley Timber and Land Company, Georgia Forestry Commission, International Paper Company, Jefferson Smurfit Corporation, Rayonier Incorporated, Tenneco Packaging Corporation and The Timber Company in the winter of 97-98. Thanks to the efforts of these eight organizations, the installations were smooth and efficient. CFGRP members are reminded that the second series of polymix tests is slated for planting in December of 2001.

Top Grafting

One-year results were presented for the CFGRP top grafting study with slash scion.

1. Age of scion and position of the graft in the crown (upper or lower) had major effects on the variables of flowering points, female strobili, clusters of male strobili and shoot length.
2. Species of the interstock, whether loblolly or slash, had minor or no effect.

**Genetic Parameter Estimates in Florida Loblolly Pine**

1. Five, ten and fifteen year CFGRP loblolly data will be used to calculate genetic parameter estimates for Florida loblolly pine. All data has now been collected and is being cleaned. Victor Lucero, MS student, is conducting this research and will be soliciting further information from the cooperators concerning climatic variables, soils and drainage for each test site. Data will be analyzed this summer with a final report in December of 1998.

**Comparison of Loblolly and Slash Pine**

Results of the analysis of third-year height and rust infection of improved loblolly, improved slash and unimproved slash from the twelve CFGRP hybrid studies were presented.

1. Improved loblolly has significantly greater height and less rust for all sites and treatments.

2. Improved slash outperformed unimproved slash for height and rust resistance.

**Estimation of Heritability for Binary Traits**

Binary traits (live/dead or infected/uninfected) do not meet the analytical assumptions of methods used for continuous traits. Several alternative and often complex methodologies have been suggested for the analysis of binary traits.

1. In comparing methodologies for the prediction of gain for mass selection from the simplest (ANOVA on zeroes and ones) to the most complex (generalized mixed models with link functions), all methodologies performed well for low to moderate heritabilities and incidence levels (as in infected/uninfected) of less than 70%.

2. Even the most complex methods were unable to predict realized gain in an unbiased manner after the 70% breakpoint.

**Yield Gains from Rust Resistance**

Five large-plot tests from the Best Management Practices test series were measured for height, diameter, rust incidence and location of galls at twelve-years old. The four genetic entries were mixtures of six open-pollinated families from two species, loblolly and slash, and two levels of rust resistance, susceptible and resistant. The results indicated that:

1. these slash pine families consistently outperformed the loblolly pine families for volume per acre,

2. rust resistance was more important in slash pine than loblolly pine,
3. decreased mortality was the most important consequence of resistance,

4. uninfected trees grew faster (height and diameter) than stem-galled trees, and

5. the CFGRP index combining growth rate and rust resistance greatly undervalues the effects of rust resistance on volume per acre for high rust hazard sites.

**Stability of Rust Resistance Genotypes of Slash Pine**

Results from the Rust Virulence Study indicate for slash pine that:

1. there is an interaction between the rust inoculum present in a year and the pine genotype,

2. a similar interaction is present between the inoculum present at locations and the pine genotype, and

3. these interactions are due to family rank changes.

**Executive Committee**

The executive committee now consists of:

Clem Lambeth, Chair  
David Adams, Future Chair  
Russ Pohl, Past Chair

Our appreciation to Charlie Chase for his excellent service to CFGRP as an Executive Committee member, and Russ Pohl for serving as Executive Committee chair during 97-98. Thanks, Charlie and Russ.