Minutes of the CFGRP Contact Meeting, November 20-21, 1996

General Meeting

1. The Sun Workstation has been upgraded
   • the hard disk space has been expanded from 2.6 gigabytes to 6.8 gigabytes,
   • a 4 gigabyte tape drive has been added for weekly backup,
   • the 40 megahertz processor has been replaced by dual processors running at 150 megahertz, and
   • RAM has been increased to 320 megabytes from 224 megabytes.

2. The 24th Southern Forest Tree Improvement Conference will be hosted by the University of Florida, School of Forest Resources and Conservation and will take place in Orlando, Florida on June 9-12, 1997. Call Kim at (352) 392-5930 for details.

3. The phone list was updated and E-mail addresses were added during the meeting. The new list will be sent to all members.

4. Polymix seed was given to Greg and he reciprocated by providing pollen for controlled crossing of the elites and for the 1997 polymix crossing.

5. The graduate students were introduced along with their research topics (see table 1).

Georgia-Pacific

Paul Belanger gave an excellent presentation on the operational land base and new organizational structure for Georgia-Pacific Corporation research.
Table 1. CFGRP graduate students and their research topics.

<table>
<thead>
<tr>
<th>Student</th>
<th>Degree</th>
<th>Home Country</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulison Lopes</td>
<td>Ph.D.</td>
<td>Brazil</td>
<td>Analysis of 0,1 data</td>
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<tr>
<td>Pengxin Lu</td>
<td>Ph.D.</td>
<td>China</td>
<td>BLUP of breeding values</td>
</tr>
<tr>
<td>Louis Osorio</td>
<td>Ph.D.</td>
<td>Colombia</td>
<td>Eucalypt clonal data</td>
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<tr>
<td>Javier Upton</td>
<td>Ph.D.</td>
<td>Mexico</td>
<td>Hybrid trial analysis</td>
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<tr>
<td>Jeremy Brawner</td>
<td>M.S.</td>
<td>U.S.A.</td>
<td>Realized gains from rust resistance</td>
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<tr>
<td>Victor Sierra</td>
<td>M.S.</td>
<td>Chile</td>
<td>Parameter estimates for Florida loblolly</td>
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</tbody>
</table>

Advanced Generation

Tim White presented the overall structure of the polymix and controlled crossing for the second generation testing. The specifics of the crossing of the elite parents within the orange and blue lines were discussed. The crossing pattern is based on crossing the best by best and complimentary mating where, for example, good rust parents are crossed with good growth parents. The total crossing load to complete all matings was from 5 to 9 crosses per cooperator. Desired seed per cross is 150. Sheets detailing crossing responsibility were passed to each cooperator.

Pine Slash Breeding

Slash Pine Polymix

Dudley Huber talked about the test design for the polymix tests to be planted in winter of 1997. The low testing load relative to the first generation and the need for diligent effort in order to obtain good results from so few tests were stressed. The basic design for these tests is single tree plots with 20 blocks per site. Each block is split into orange families and blue families. The blocks should be as square as possible. There will be seven sites installed in 1997 with a total of approximately 150 families. The area needed for each test is a 5 acre square. The site should be an operational slash site. Cooperators were asked to fill out establishment reports on two proposed sites. The CFGRP staff will visit each proposed site. Tests will be sown in the greenhouse in June of '97 and planted in December '97. The following cooperators will be planting tests: International Paper, Georgia Forestry Commission, Rayonier, Jefferson Smurfit, Saint Joe, Florida Division of Forestry and Tenneco Packaging.
Greg Powell reminded everyone of the fall measurements needed on the hybrid studies. The measurement variables will be height, tip moth Hybrid damage and status. Tip moth damage will be measured by taking two counts by independent observers on opposite sides of the tree. Each observer should count the number of current year attacks out of ten branch tips. Tim then gave an overview of the hybrid tests through slides emphasizing the efforts of the cooperators in making the studies a current success.

Dudley discussed the design of the top grafting experiment of slash scion on loblolly and slash interstock. Six age classes of scion material will be used. These will be applied to the upper and mid to lower crown of five ramets of each species. Twenty scion pieces will be required per age class. Each cooperator is thus asked to do 120 grafts or about two days work. The study is designed to answer the questions: is it more advantageous to graft onto loblolly than slash; and from what age material can we get response and how soon.

Paul Belanger presented results from his master’s thesis concerning inheritance and variation in specific gravity. Specific gravity again proved to be highly heritable with little genotypeXenvironment interaction; however, the main source of variation in specific gravity was the environment. Calculations of dry weight yield showed that volume was more important than specific gravity for this range in specific gravity.

Greg reviewed the reasons the executive council had agreed to sweep which include more value for solid wood from better recovery and more value for pulp from higher yields. Cooperators then chose weeks when they could furnish two people to help Weyerhaeuser personnel measure sweep and dbh in the Florida loblolly tests.

Dudley demonstrated the orcheval program which replaces the SAS program on Harm for evaluating orchards. Two excellent suggestions were made concerning the output in terms of printouts of clonal values and sorts on different variables. These options will be written into the program and the new versions will be shipped soon.
**Lower Gulf Elite Breeding**

Steve McKeand summarized the results of the breeding for the Lower Gulf Elite Population of loblolly pine. The discussion centered around whether to proceed with polymix testing given the material available. Once the decision was made to proceed, general locations for tests were selected.

**Field Tour**

**G-P Hybrid Study**

Tim gave the results of the analysis of data from the Georgia-Pacific hybrid study. Several interesting results were noted concerning hybrids which were not intermediate between the two parent species for rust resistance, growth rate and tip moth resistance. Rust infection was greatly increased in the high growth treatment with the gains in rust resistance evident between unimproved and improved slash pine. The efforts of Georgia-Pacific personnel resulted in large differences between the intensive and non-intensive cultural treatments.

**Top Grafting and Height Measurement**

Leon Burris explained graft placement for the top grafting experiment and demonstrated his modified cleft grafting technique that has been used successfully for operational top grafting. Leon emphasized placement of the graft in the proper part of the crown and positioning the scion on a vigorous branch. The grafting demonstration illustrated the techniques necessary to obtain live grafts which do not require extensive after care. Leon proceeded to explain the use of the Vertex hypsometer. An instrument for measuring height which is safer to use, faster, and more precise than competing instruments such as the clinometer.

**Site Preparation for Polymix Tests**

Paul talked about Georgia-Pacific site preparation for tests and Steve Kennerly defined the parameters for this site. The discussion then focused on test layout, site tillage and weed control to minimize variation. The need for doing an superior job with the polymix tests because of the low numbers of tests was re-emphasized. The decision was made to apply herbicides preplant with no spraying over the top of the seedlings. All weed problems after planting should be handled with mowing and spot spraying.

**PMRC Density Study**

Steve Kennerly illustrated that minor site changes in elevation on a ‘flat’ site can have a major impact. The impact on this test was Arsenal damage in a spot with slightly lower elevation. The seedlings in the spot were obviously damaged, showing stunting and needle browning.
G-P Pulp Mill Tour

Foresters got to see pulp being turned into a variety of paper products. For some of us it was our first time inside a paper mill. The complexity of the operation and the amount of automation was amazing. Thanks to Georgia-Pacific for allowing us inside. The tour by Barry Greenberg was excellent and the question and answer session with Henry Hirschman, General Manager of the Palatka pulp and paper mill, was informative.

Thanks

Our thanks go to Paul Belonger, Steve Kennerly and the Georgia-Pacific personnel for being such gracious hosts. All events went smoothly and the oyster roast was a crowning touch. The amiable atmosphere contributed greatly to the success of the meeting.