

**Guidelines for Preparation of Abstracts for 2004 IUFRO Joint Conference Division 2.
Forest Genetics and Tree Breeding in the Age of Genomics: Progress and Future**

The deadline for submission of abstracts is July 31, 2004. To present a paper or a poster, you must submit an abstract by July 31, 2004.

All abstracts must be written in English and submitted electronically as a Microsoft Word document and must conform to the following guidelines:

- Paper size: Letter (8.5 inches by 11 inches or 22 cm x 28 cm)
- Margins: 1 inch (2.5 cm) on all four sides
- Font: Times New Roman 12 pt.
- Length: All text (title, authors and affiliations, and body of abstract) must fit on one page (approximately 500 words maximum of text in the body of the abstract)
- Title and authors names centered and capitalize first letter in each word (see attached example). The title and the author's name making the presentation should be **bold**.
- Body of abstract should be single spaced and fully justified (aligned on left and right side). Do not indent first lines of the paragraph.

An example of an abstract is attached.

All abstracts must be emailed as an attachment (Microsoft Word document) to Dr. Bailian Li (Bailian_Li@ncsu.edu) by July 31, 2004.

Responsiveness of Diverse Families of Loblolly Pine to Fertilization

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Annual volume production of families of loblolly pine (*Pinus taeda* L.) from the Drought-Hardy TX (DHT) source and the Atlantic Coastal Plains (ACP) of NC and SC has been compared under optimal nutrition and severe nutrient limitations at the SETRES-2 (SouthEast Tree Research and Education Site-2) Study in Scotland County, NC. Response to optimal fertilization through age eight years has been dramatic; a 66% increase in height and a 163% increase in stem volume. As expected, the five families from the Atlantic Coastal Plain grew faster than the five DHT families. We anticipated that under the harsher environmental conditions in the control plots that the DHT families would perform relatively better. However, the ACP families were superior in both environments, and the provenance by treatment interactions for height in all eight years were not close to being significant. The provenance by treatment means for volume per acre at age eight are somewhat indicative of the greater responsiveness to nutritional amendments of the Atlantic Coastal Plain provenance compared to the Drought-Hardy Texas provenance. Although there was no provenance rank change in the two environments, the difference in the magnitude of the provenance means (greater in the fertilized plots) is similar to previous trials.

Families within provenances also differed for growth traits. The family means at age eight for the ACP families varied from 46.8 m³/ha to 55.4 m³/ha in the control plots and from 115.3 m³/ha to 142.5 m³/ha in the fertilized plots. The Texas families also differed in the control plots (45.0 m³/ha to 49.6 m³/ha) and in the fertilized plots (117.1 m³/ha to 131.8 m³/ha). The marked difference in productivity between the drought-hardy Lost Pines families and the ACP families is illustrated by the almost complete lack of overlap of the family means for height and volume.

The lack of rank change across the treatments both at the provenance and family level was surprising for height and volume. Given the magnitude of the imposed environmental differences and the young age of the trees, differential performance of the families in the two treatments was expected. This result reinforces the tenet of the stability of open-pollinated families of loblolly pine as well as the better responsiveness of the ACP provenance compared to the Lost Pines provenance.