

## **SOIL COMPACTION IN LOBLOLLY PINE SEED ORCHARDS AND THE IMPACTS ON TREE HEALTH AND CONE YIELDS**

***Serenia M.L. O'Berry, J.B. Jett, Fikret Isik, and Steve McKeand***

NC State University Cooperative Tree Improvement Program, Raleigh, NC, USA

Mass production of controlled crosses for loblolly pine (*Pinus taeda* L.) has resulted in substantial increases in heavy vehicle traffic and likely increases in soil compaction in seed orchards. In this study, we examined soil compaction and its association with tree health and cone production. Soil strength was measured using a penetrometer and is an indirect measure of soil compaction. Multiple measurements were taken per tree to characterize the compaction profile of each tree. Tree vigor and cone production were also assessed, and there was a significant range in values for trees in the five orchards sampled. The association between the soil compaction values and tree health and cone production is being investigated to determine if there is a negative impact of soil compaction.

Contact Information: Serenia O'Berry, NC State University, Box 8002, NCSU, Raleigh, NC 27695-8002, Phone: 919-886-6073, Email: [smlarris@ncsu.edu](mailto:smlarris@ncsu.edu)