Research Frontiers in North American Conifer Orchard Management

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Orchards are the principal vehicle by which tree improvement is translated into deployment. In the US Southeast, virtually all loblolly and slash pine (*Pinus taeda* and *Pinus elliottii* var. *elliottii*) seedlings (800m+ planted annually) are sourced from grafted orchards with material deriving from cooperative breeding programs. This is also the case for improved genetic material in the US and Canadian Pacific Northwest, BC Interior and Eastern Canada, South America, South Africa, Australasia, and other world regions.

Although these precious resources are the lynchpin of translating product development into value for stakeholders, very little public knowledge has been gained from research efforts in the last 20 years. In late Fall 2022, the UF|IFAS Cooperative Forest Genetics Research Program (CFGRP) hosted an IEG40 meeting to gather orchard managers, tree breeders, and geneticists to discuss emergent issues in orchard management. The group of more than 60 scientists met to share insight into present and perceived future challenges facing orchards across several coniferous and deciduous forest tree taxa on four continents.

In this presentation we will summarize the conclusions gathered from the IEG40 meeting, focusing on the discussion that is primarily relevant to the US Southeast. We will report the status of known efficacy of contemporary orchard management techniques, gaps in knowledge, and requirements for designed experiments to equip future orchard managers to meet oncoming challenges. We will report the status of [ongoing] follow-through communications with stakeholders, especially those representing the membership and leadership of the Southeastern cooperative tree improvement and research programs. Our aim in presenting these results is to report on the outcomes of the IEG40 meeting for the SFTIC community, to present a working agenda for obtaining new knowledge, and to invite stakeholders to join in this vital research.