

Alternative Site Preparation Methods for Forestry

Issue: The benefits of intensive management of southern pine plantations in the form of increased growth are well documented. Intensive site preparation treatments are an accepted means to establish a successful pine plantation. There is, however, uncertainty about the amount and intensity of site preparation that is required for plantation establishment and sustainable forest production. Current site preparation methods are applied on a broad scale. This requires significant inputs of energy and results in a large percentage of the tract being disturbed. Can less intense and more site-specific methods of site preparation produce the same benefits at a reduced cost?



Study Description: Functional requirements for site preparation treatments are being studied. Better site description, treatment layout and alternative types of tillage are some of the areas being investigated. Alternative types of tillage being considered are spot cultivation and minimum till methods adapted from agriculture.

Status: A plow utilizing a 48-inch winged coulters as an alternative to traditional subsoiling has been developed by Woodland Specialists, Inc. and initial evaluations are being performed.

Benefits:

- *Reduced draw bar pull and energy consumption*
- *Multiple row plow for additional tillage efficiency*
- *Reduced site disturbance*
- *Improved tree seedling survival and growth*
- *Reduced operational cost*
- *Injection of liquid fertilizer*
- *Use of compressed air to facilitate soil fracturing*
- *Use of powered coulters to facilitate soil fracturing*

Cooperators: Woodlands Specialists, Inc., International Paper Company, Mead Coated Board, Auburn University Department of Biosystems Engineering, USDA National Soil Dynamics Laboratory, USDA Forest Service

Contacts: Dr. Bob Rummer, USDA Forest Service, rummer@fs.fed.us

