Changes in Soil Moisture and Nutrient Availability Following Alternative Silvicultural Systems in the Southern Appalachians. (S07-fox063052-Oral)

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Abstract:

Seven alternative regeneration systems, including even-aged, two-aged, and uneven-aged systems, were evaluated at four sites in the southern Appalachians. Two sites were located in the Ridge and Valley on medium quality sites (SI<65) and two sites were located in the Cumberland/Allagheny Plateau on high quality sites (SI>70). Prior to harvest, all four sites were dominated by various oak species. Species composition and growth rates of the hardwood regeneration was evaluated four growing seasons after harvest. Hemispheric photography was used to determine differences in light levels due to variation in residual overstory density. TDR was used to measure soil moisture. Exchange resins were used to evaluate nutrient availability. Water and nutrient availbility were different among sites, with higher levels found at the better quality sites. Differences in water and nutrient availability among the various regeneration treatments were small. Differences in light levels due to variation in residual overstory density had a greater impact on species composition and growth of the regenerating stands than did soil water and nutrient availability.

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