

**SOIL PROPERTIES RELATING TO HEIGHT GROWTH OF
LOBLOLLY PINE ON SOILS OF THE BOWIE, FUQUAY,
SACUL, AND TROUP SERIES**

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Stem analysis was used to obtain age and height data for loblolly pine stands growing on Bowie, Fuquay, Sacul, and Troup soils in northeastern Texas. The soil profiles were described and bulk soil samples were taken in each sample stand. Selected physical and chemical soil properties were measured for each soil horizon. Stepwise regression analysis was used to correlate average stand height at ages five, 10, 20 and 30 years with soil properties. Strong associations were found between stand height and properties which relate to available soil moisture holding capacity, soil permeability, and soil aeration. For Bowie, Fuquay, and Troup soils, average stand height increased with increasing moisture holding capacity of the surface soil and with increasing subsoil permeability and aeration on sacul soils, height increased with better permeability and aeration of the solum.

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