WOODY BIOMASS AND VOLUME FOR FOUR TREE SPECIES IN MISSOURI FORESTS

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Global energy supply concerns and increasing energy consumption are forcing our society to look into non-fossil-based energy sources and fuels to supplement humanity's ever growing energy requirements (Hahn 1984, Jenkins and others 2004, Smith 1985, Stortz 1975). Biofuels have received increased attention over recent years including biomass from plant and animal sources. This study examines woody biomass and volume available in four tree species commonly found in southeastern Missouri forests. Approximately 200 samples of black oak (*Quercus velutina* Lam.), white oak (*Q. alba* L.), post oak (*Q. stellata* Wangenh.), and hickories (*Carya* spp.) were selected for the study. Pre-harvest data collected from these samples included diameter, total height, and crown height.

The selected samples were then felled, and green weights of each tree were gathered using a Volvo front-end loader equipped with a grapple lift and a hydraulic load cell. Total tree weight with top was collected (fig. 1) before the tops were removed, allowing for merchantable weight data collection. Individual log weights were also collected from stems that were bucked into sawlogs. This method of collecting biomass data greatly speeds the process.

Sample sections were collect for each log to determine specific gravity and dry weight. We are currently in the process of fitting biomass equations and evaluating published equations for use in Missouri.

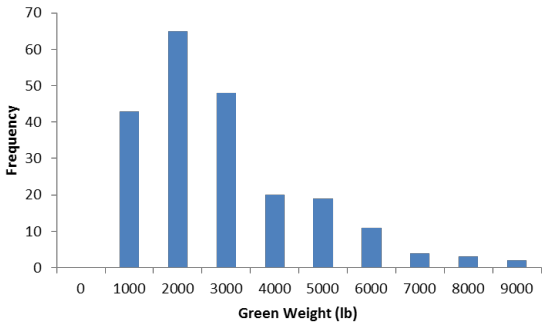

Figure 1--Observed green weights for the study (in pounds).

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