

# **ESTABLISHMENT OF A SILVOPASTORAL SYSTEM IN A MISSOURI HARDWOOD FOREST**

Kenneth Ladyman

Harold 'Gene' Garrett & Monty Kerley, Thesis Supervisors

## **ABSTRACT**

This research was conducted at the University of Missouri Hugo Wurdack Farm located near Cook Station, MO (Crawford County, Section 36, Township 36N, Range 5W). Plots were located on north- or north-east facing slopes. Grazing plots were 132.9 meters on the contour of the slope and 70.1 meters from base of the slope. The experiment was designed as a randomized complete block with five treatments, and five replications of each treatment. The five treatments were: (1) 1.01 hectares thinned forest, planted with selected forages and grazed, (2) 0.51 hectares thinned forest, planted with selected forages and not grazed, (3) 0.51 hectares thinned forest only, with no forage planting and not grazed, (4) 0.51 hectares control forest (no applied management), and (5) 1.01 hectares open pasture. Forage treatments were established on April 4 and 5, 2003, using Kentucky 31 Tall Fescue (*Lolium arundinacea* Schreb.). Red clover (*Trifolium pretense* L.) and 'Marion' lespedeza (*Kummerowia striata* Thunb.) were sown on April 9, 2003. All treatments received 154 kg per hectare of 0-150-75 fertilizer. The number of trees left per ha following thinning averaged 165. Forages were harvested May 3, 2004 (cutting 1) and again on May 28, 2004 (cutting 2). All forages were analyzed for their content of nitrogen (N), neutral detergent fiber (NDF), and acid detergent fiber (ADF). The silvopasture had a lower NDF and ADF for the May 28 cutting compared to the open pastures.