

# **PUBLICATIONS**

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## EVALUATION OF FALL-ESTABLISHED FORAGES FOR WHITE-TAILED DEER

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**Background.** The establishment of supplemental forages for wildlife historically has been accepted as a wildlife management tool. However, maximum benefits can only be obtained if supplemental forages are available during seasons when native forage is lacking or low in nutritional value. In East Texas, these stress periods traditionally occur in late summer and late winter. The severity of the summer stress appears to be directly related to native food supplies and their quality as determined by rainfall patterns. However, we were interested in establishing warm season forages at the end of or perhaps following this stress period for evaluation as a Fall season attractant.

Our objectives were: 1. Evaluate establishment and yield potential of supplemental forages in a bottomland site during September through November; 2. Evaluate white-tailed deer acceptance and utilization of fall-established supplemental forages; 3. Evaluate the nutritional value of supplemental forages for white-tailed deer using measurements of crude protein; and 4. Evaluate establishment of warm and cool season forages in September as attractants for deer during October and November.

An evaluation site was chosen on the Cherokee Ridge property. Cherokee Ridge is a 3500 acre high fenced area located approximately 4 miles northeast of Wells, Texas. The property is owned by International Paper and is managed for deer and timber production. Soil samples were collected to determine amendment (lime and fertilizer) requirements. Site preparation was limited to mowing and disking using standard tractor implements. A remote sensing camera population census was conducted in February 2001 to determine relative deer density on Cherokee Ridge. Our deer estimate was 12 acres per deer. No livestock were present. Therefore, outside competition for available forage during the trial was considered to be minimal.

The forages included in this study were Iron and Clay cowpea , Rack King mix (80% Iron and Clay cowpea and 20% alyceclover), BioMass (mix of soybean, sorhum x sudangrass hybrid, forage sorghum, cowpea and corn), Summer Management Blend (mix of forage rapes), and Cowpea/Arrowleaf mix (80% Iron and Clay cowpea and 20 % Apache arrowleaf clover). Seed of four entries were planted in a prepared seedbed on Sept 7, 2001 and the Cowpea/Arrowleaf entry was planted Sept 14, 2001. Iron and Clay cowpea, Rack King mix and Cowpea/Arrowleaf mix were planted at 50 lbs seed/acre. BioMass and Summer Management Blend were planted at 25 and 9 lbs seed/ acre, respectively.

A randomized complete block design was utilized to test the five entries at the bottomland site. Three replicates of each variety were established in plots measuring 21 feet by 21 feet with a buffer strip of five feet plots. Legume seeds were inoculated at the time of planting. All seeds for each plot were pre-weighed following germination tests, broadcast by hand and then covered a drag behind a tractor.

Wire exclosures, three feet in diameter, were placed randomly on each plot. A forage sample was harvested from inside the exclosure in each plot on October 12, 2001. These samples were dried and weighed to provide a standing crop estimate before forwarding to the Soil and Water and Forage Testing Lab at TAMU for crude protein analysis. Harvests from inside each exclosure served as total standing crop estimates for each entry when final harvests were made on November 15, 2001.

**Research Findings.** Forage production was highest for Iron and Clay cowpea (4796 lbs DM/acre), followed by Rack King mix, Biomass, Cowpea/Arrowleaf mix and Summer Management Blend. Utilization throughout the trial was considered to be low compared to similar studies measuring utilization of forages during the warm season stress period (July-August). A major factor contributing to the reduced utilization of plots included excellent native forage production due to late August-early September rainfall and an abundant acorn crop available from mid-September to the conclusion of the study in mid-November. However, utilization was highest in plots consisting of/or containing Iron and Clay cowpeas. No use was noted on Summer Management Blend throughout the Fall study. The crude protein levels measured were all above 20% on the Oct 12 sample date.

**Application.** Based on forage production, quality and utilization, we believe that Iron and Clay cowpeas or combinations containing a high percentage of Iron and Clay cowpeas may be best suited for establishment in September to provide supplemental forage for white-tailed deer in October and November. Planting conditions encountered in September will surely impact results. For example, if early September represents continuation of the warm season stress period due to an absence of precipitation, the manager may encounter difficulty in stand establishment or at minimum, forage stands may be subjected to overbrowsing to the point of stand elimination.

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