

# **PUBLICATIONS**

# **2004**

## FALL-PLANTED FORAGE MIXTURES FOR WHITE-TAILED DEER

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**Background.** Many different forages are often fall-planted in Texas as supplemental browse for white-tailed deer, including annual and perennial clovers, oats and forbs such as turnip and kale. None of these forages are capable of providing fast growing, high protein browse when planted Sept 1. All of these forages can provide browse from December through May with the quantity and distribution varying by species. In east Texas the months of September, October and November are very low in browse production from supplemental forage plantings for white-tailed deer. In these three months, summer plantings of warm-season forages have already been consumed and fall planted cool season forages are just beginning to grow. Supplemental forage mixtures are needed that can be planted in early September and that will produce high protein browse in 30 to 60 days.

Our objectives were: 1) to determine the forage production potential of mixtures of warm and cool season forages planted in early September; 2) to evaluate the effect of seeding rates on establishment and forage yield of each component of the mixture; and 3) identify an optimum mix of cowpeas, oats and arrowleaf clover for fall-planted supplemental forage plots for white-tailed deer.

Previous research at Overton has shown that spring-planted Iron and Clay cowpeas grow rapidly and can produce 4000 lbs dry forage/acre in 60 days. This high protein (>20%) forage is readily utilized by white-tailed deer. Mixtures of Iron and Clay cowpea, Heavygrazer oat and Apache arrowleaf clover were planted at Overton on Aug. 29, 2003. The components of each mixture are shown in Table 1. The mixtures were broadcast on a disked seedbed and rolled to assure good soil contact. The mixtures were planted in 10 x 20 ft plots arranged in a RCB design with 3 replications. The mixtures were formulated to provide varying seeding rates of cowpeas and oats while holding the arrowleaf planting rate constant at 10 lbs/acre.

Forage samples were harvested from each plot on Oct. 3, Nov 4, and Dec 1, 2003. The samples were dried for 48 hrs and weighed to determine dry forage yield per acre. The cowpeas were harvested to a six inch stubble height and the oats and arrowleaf clover to a one inch stubble. The cowpeas were killed by frost damage on Nov. 25, 2003.

**Research Findings.** Cowpea forage production at the October and November harvest dates was directly related to seeding rate (Fig. 1). Dry cowpea forage yields at 30 d post-planting ranged from 850 lbs DM/ac to over 2000 lbs DM/ac as seeding rates increased from 20 to 60 lbs/ac. Similar responses were noted for the 60 day post-planting harvest date. The oats and

arrowleaf clover plants were small (less than 2 in height) at the Oct 3 date and were not harvested. These cool season species were just beginning growth at the Nov 1 date and their combined (95% oats) yields ranged from 35 to 345 lbs DM/ac (data not shown). On Dec 1 the oats and arrowleaf clover production (90% oats) increased as the cowpea forage production reached a plateau (data not shown). Oat production on Dec 1 was dependant on oat seeding rate and the high seeding rate (40 lbs/ac) produced a average of 927 lbs dry forage per acre

**Application.** Preliminary data indicates that a mixture of 40 lb/ac Iron and clay cowpea, 40 lbs/ac Heavygrazer oats and 10 lbs/ac Apache arrowleaf clover planted in early September will provide supplemental browse for white-tailed deer from October through November. Data on spring production of oats and Apache arrowleaf from this mixture will be collected in 2004.

**Table 1.** Seeding rates and estimated cost per acre for experimental mixtures.

ENTRY NO.	SEEDING RATE			COST
	IRON & CLAY COWPEA	HEAVY GRAZER OATS	APACHE ARROWLEAF	
	lbs/ac			\$ / ac
1	20	20	10	35.00
2	25	15	10	36.25
3	30	10	10	37.50
4	40	40	10	50.00
5	50	30	10	52.50
6	60	20	10	55.00

**Figure 1.** Iron and Clay cowpea forage production at 30 (3-Oct) and 60 (4-Nov) days post-planting.

