

IMPROVED CULTIVARS OF LABLAB FOR TEXAS

G. R. Smith, F. M. Rouquette, Jr. and S. Brown

Background. Lablab (*Lablab purpureus*) is a drought-tolerant, summer annual legume that is used throughout the tropics as a forage, hay, and green manure crop. A recent review article indicates that lablab forage offers solutions to low nutritive value diets consumed by livestock. Lablab is a tap-rooted forage legume that can be grown in diverse environments with minimum rainfall (10 to 15 inches during growing season). Lablab can be grazed, cut as hay, or grown in mixtures with corn or sorghum and harvested as silage. This tropical legume forage is highly palatable and readily consumed by cattle as a grazing or hay crop.

The potential for using lablab in Texas forage-livestock production systems and as supplemental browse for white-tailed deer has been investigated recently at TAES Overton in several experiments. In summary, lablab has about the same forage production and nutritive value potential as Iron and Clay cowpea. Both legumes can produce about 2 tons of dry forage in 100 days with leaf protein content of 20 to 25%. Lablab and cowpea are both utilized by white-tailed deer, axis and fallow deer, but all wildlife show a slight preference for cowpea in the early season. In contrast, cattle consistently refused to graze cowpeas and showed a marked preference for lablab in experiments conducted over two years at Overton. These experiments indicated a need to develop new cultivars of lablab that could tolerate Texas heat and drought; be acceptable as a grazing crop for cattle and browse for white-tailed deer; and that would produce an economically viable seed crop in Texas

Research Findings. Forty-two germplasm lines of lablab were evaluated for regrowth after grazing, relative maturity and seed production potential. All entries had excellent regrowth following complete defoliation and wide differences were noted in time of flowering. Single plant selections were made and seed were increased in the greenhouse. Three elite selections were identified for further seed increase. These three lablab breeding lines were planted at Vernon, TX on June 13, 2003. One hundred fifty seed of each line were hand planted in a 50 ft. row. By June 19, entries TX1-98 and TX3-98 had good stands (>95%) but TX2-98 had a poor stand (21%). TX1-98 and TX3-98 began flowering in late August and seed were harvested on November 17. TX2-98 was about one week later in flowering but all plants of this entry were dead by September 25 and no mature seed were produced. Yellowing was noted on TX2-98 in late August. Seed production from TX1-98 and TX3-98 was excellent (Table 1) and research with these experimental lablab entries will continue.

Application. This research indicates great potential for the development of improved lablab cultivars for Texas and for the expansion of a lablab seed industry in Texas. An accelerated lablab breeding and evaluation program is planned for 2004 to provide improved cultivars for Texas.

Table 1. Evaluation of experimental lablab entries at Vernon, TX in 2003.

OBSERVATIONS	EXPERIMENTAL ENTRY		
	TX1-98	TX2-98 ¹	TX3-98
Early bloom	Aug. 22	Aug. 29	Aug. 22
Mature seed	Nov. 17	--	Nov. 17
Plant size at early bloom (HxW, inches)	28 x 56	14 x 51	28 x 66
Seed yield (lbs per 50 ft row)	9.0	0	9.75
Seed size (seed per lb)	2360	--	2814

¹All plants of TX2-98 were dead on Sept. 25 and no mature seed was harvested.