

PUBLICATIONS

1992

FIELD DAY REPORT - 1992

**Texas A&M University Agricultural Research and
Extension Center
at Overton**

**Texas Agricultural Experiment Station
Texas Agricultural Extension Service**

Overton, Texas

April 30, 1992

Research Center Technical Report 92-1

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COMPARISON OF COWPEA PLANT INTRODUCTIONS TO 'IRON & CLAY' VARIETY COWPEAS

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Background. Cowpeas (*Vigna unguiculata* [L.] Walp.) are warm-season annual legumes that are well adapted to the typically infertile, acid soils and hot, dry summers of the southeastern U.S. The varietal mix 'Iron & Clay' is a very late-maturing forage type cowpea that has shown great potential as a summer forage crop in trials at Overton, Texas. This research was conducted to evaluate cowpea plant introduction lines for forage potential.

Research Findings. On June 5, 1990, 235 plant introductions (PI) of cowpeas were planted in 6 ft. rows to collect data on height and vigor of plants throughout the summer. Several elite PI lines were identified as superior to Iron & Clay with regard to height and vigor (Table 1). Plant height and vigor at the peak of the summer are good indicators of plant performance. The elite lines had less variation in height and vigor when compared to Iron & Clay (Table 2). The elite PI lines were also later flowering than many of the other PI lines evaluated, but did not remain vegetative as long as Iron & Clay (Table 3).

Application. More information is needed on the elite PI lines identified in this study. Iron & Clay performs well and at this time is the variety of choice that should be used where forage cowpeas are a desired part of a grazing or sustainable agriculture program in the southeastern U.S. Improved performance of any forage is a worthwhile endeavor and more research should be done with the elite cowpea plant introduction lines.

Table 1. Height (HT) in inches and vigor score¹ (VS) means for cowpea varieties and plant introductions (PI).

Variety	Date			
	6/21	7/18	8/01	9/01
	-----HT/VS-----			
Iron & Clay	9/1.8	23/n/a	22/2.8	22/2.8
Cal Blkeye #5	7/1.0	24/n/a	12/2.0	13/2.0
Big Boy	6/2.0	16/n/a	9/2.0	8/2.0
PI Lines	7/1.5	17/n/a	15/1.9	15/2.1
no. of PI's (n)	221	225	217	224
Elite PI Lines	9/2.1	25/n/a	24/2.4	25/2.5
no. of PI's (n)	15	14	9	13

¹Vigor score is a visual score based on plant appearance. 0 = dead, 1 = brown and/or yellow, 2 = pale green, 3 = dark green.

Table 2. Height (HT) in inches and vigor score¹ (VS) ranges for cowpea varieties and plant introductions (PI).

Variety	Date			
	6/21	7/18	8/01	9/01
Iron & Clay				
Height	7-12	18-27	16-28	18-28
Vigor	1-2	n/a	2-3	2-3
Cal Blkeye #5				
Height	7	24	12	13
Big Boy				
Height	6	16	9	8
PI Lines				
Height	3-12	6-30	6-28	6-28
Vigor	1-3	n/a	1-3	1-3
n	221	225	217	224
Elite PI Lines				
Height	9-12	24-30	24-28	23-28
Vigor	1-3	n/a	2-3	2-3
n	15	14	9	13

¹Vigor score is a visual score based on plant appearance. 0 = dead, 1 = brown and/or yellow, 2 = pale green, 3 = dark green.

Table 3. Percent of plants flowering or showing seed pods.

Variety	Date			
	6/21	7/18	8/01	9/01
Iron & Clay				
Flower	0.0	0.0	0.0	0.0
Seed	0.0	0.0	0.0	0.0
Cal Blkeye #5				
Flower	0.0	0.0	0.0	16.7
Seed	0.0	0.0	0.0	16.7
Big Boy				
Flower	0.0	0.0	0.0	100.0
Seed	0.0	0.0	0.0	100.0
PI Lines				
Flower	0.0	13.3	12.9	18.3
Seed	0.0	4.0	18.9	58.5
n	221	225	217	224
Elite PI Lines				
Flower	0.0	0.0	11.1	55.6
Seed	0.0	0.0	11.1	100.0
n	15	14	9	13