

PUBLICATIONS

1993

FIELD DAY REPORT - 1993

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

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

Overton, Texas

May 28, 1993

Research Center Technical Report 93-1

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KENAF STEM YIELD POTENTIAL AT OVERTON

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Background. Kenaf (*Hibiscus cannabinus* L.) is an annual plant which produces two fibers which can be used in the manufacture of paper and pulp products, poultry litter, cattle feed, potting soil, packing media, and oil spill clean up products. The major advantage that kenaf products have compared to petroleum based products is that kenaf is biodegradable and fiber yields are often in excess of 10,000 pounds dry matter/ac per year. The USDA-ARS, in Weslaco, TX is researching the genetic improvement of kenaf. They are developing cultural practices to maximize economic production. Agronomic research has shown that acceptable kenaf yields can be produced in most of the southern U.S. and California. Industry is moving into development and promotion of marketable materials. There is a shortage of kenaf packing material. Commercial kenaf ventures are located in Louisiana, California, and Mississippi. A fourth commercial plant is being constructed in Texas. Research on kenaf at Overton is in cooperation with the USDA-ARS research program at Weslaco, Texas.

Research Findings. Ten kenaf varieties were compared for total stem yield at Overton for 2 years. Kenaf seed was drilled into a prepared seedbed. Preplant fertilizer application was 50 lbs nitrogen (N) and 100 lbs of both P_2O_5 , and K_2O per acre in both years. Weeds were controlled by applying Dual preemergence at a rate 1.5 pts/ac both years. In 1992, Poast herbicide was applied postemergence at 1.5 pts/ac to control seedling Johnsongrass. Plot size was 4 rows spaced 32 inches apart and 22 ft in length. Seed were drilled to a depth of 1/2 inch. Seeding rate was 140,000 seed per acre. Planting dates were April 16 and 15 in 1991 and 1992, respectively. Good stands were obtained each year. The experiments were topdressed with 100 lbs/ac N on June 7, 1991, and on May 14, 1992.

Plant height of kenaf varied with variety. Height was approximately 13 ft in 1991, and about 10 ft in 1992. Harvest dates were Oct. 16 and 14 in 1991 and 1992, respectively. Significant differences in stalk yield were obtained in 1991 (Table 1). Yields were not significantly different among varieties in 1992. Two-year mean yields were significantly different among varieties. Highest yields were slightly over 10,000 lbs dry matter per acre. These yields are representative for kenaf. The higher yielding varieties at Overton were also the better varieties in experiments in South Texas.

Application. These results indicate that kenaf can be grown successfully in northeast Texas. This crop offers a potentially profitable alternative to growing forage or grain crops. The

major problem which exists is a market for kenaf. In south Texas, a commercial processing factory is being constructed in Willacy County, and kenaf is being grown commercially in Texas.

Table 1. Stem yield of ten kenaf cultivars at Overton, Texas from 1991-92.

Cultivar	1991	1992	Combined across years ¹
Tainung 2	10148 abc ²	11509 a	10828 a
Everglades 71	11138 ab	9900 a	10519 ab
19-117-2	11385 a	8848 a	10117 ab
45-9	9158 abc	9653 a	9405 abc
78-18RS10	9405 abc	9219 a	9312 abc
Tainung 1	7920 abc	8786 a	8353 abc
Everglades 41	6930 c	9096 a	8013 abc
Cubano	7425 bc	8168 a	7796 abc
Cuba 108	7178 c	8106 a	7642 bc
15-2	6435 c	7301 a	6868 c
Mean	8712	9058	8885

¹Cultivar x year interaction was not significant at the 0.05 probability level.

²Means followed by the same letter are not significantly different at the 0.05 probability level according to Duncan's Multiple Range Test.