AgriLIFE EXTENSION
Texas A&M System

Year: 2008

EVALUATION OF GRAIN SORGHUM VARIETIES IN NAVARRO COUNTY, TEXAS

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SUMMARY:

Grain sorghum field variety trial was conducted in 2008 west of the community of Frost. 10 varieties were evaluated in this agricultural result demonstration. Varieties were planted, grown and harvested to compare yield performance and economic return under local field growing conditions. Yields were fair to good given the hot and dry conditions experienced during the growing season of 2008. The adjusted yield of the top variety was Dekalb 37-07 at 5,226 lbs/ac. Adjust yields (at 14% moisture for comparison) averaged 4,768 lbs/ac which was an increase from the 2007 variety trials which averaged 4,271 lbs/ac.

PROBLEM:

Variety selection is one of several primary production inputs that impacts the profitability of farming enterprises. New varieties are introduced each year that have the potential to increase yield through improved genetics for yield and insect and disease resistance. These varieties need to be tested against established varieties under local growing conditions to determine which varieties have the greatest profit potential.

OBJECTIVE:

The purpose of this trial was to compare the yield performance and gross economic return of ten grain sorghum varieties under the same field growing conditions. Data from this trial should be compared to data from other counties and on the farm production to assist producers in making sound variety selection decisions.

METHODS AND MATERIALS:

Six rows of each variety were planted March 26, 2008 on 38 inch rows. The site was a Houston Black Clay. Cotton had been the previous crop grown. Land preparation included shredding stalks, discing, field cultivating and planting. Preplant fertilizer was applied at 200 pounds per acre of 82-0-0 (anhydrous ammonia) and 160 pounds per acre of 11-37-0 (ammonium polyphosphate) and no topdress application was made. 3 quarts per acre of Bicep Lite II Magnum were applied and seed was treated with insecticide. Plots were harvested July 29, 2008 using a Gleaner R72 combine. Harvested plot size was 0.4134 acres.

Yields were weighed with an electronic weigh wagon. Samples were taken on each variety to obtain bushel weight and moisture. All yields were then adjusted to 14% moisture for comparison.

RESULTS AND DISCUSSION:

The adjusted yield of the top variety was Dekalb at 37-07 at 5,226 lbs/ac. The lowest

yielding variety was Triumph 442 with an adjusted yield of 4,260 lbs/ac; it should be noted that this was the only variety in the trial that exhibited lodging issues and it was visually estimated that 20% to 30% of the plot was lodged and not picked up by the header used. The yield range between the highest and lowest yield variety was 966 lbs/ac. The average of all varieties was 4,768 lbs/ac. Refer to Table 1 and Figure 1.

ECONOMIC ANALYSIS:

The highest economic return will be associated with the highest yielding varieties. Due to the fluctuations in prices of grain in 2008 and the locality of prices, no prices will be provided in this report.

Table 1: 2008 Grain Sorghum Variety Trial - Frost, TX

Variety	Maturity Range	Plot Weight lbs	Moisture %	Bu. Wt. lbs	Yield lbs/a	Adj. * Yield lbs/a
Dekalb 37-07	ME	2116	12.2	61	5119	5226
Dekalb 44-20	M	2088	12.2	61	5051	5157
BH Genetics 3799	ME	2024	11.8	60	4896	5021
Pioneer 84G62	ML	1992	12.2	60	4819	4920
Pioneer 85G01	ME	1964	12.2	60	4751	4850
Triumph Seed 458	M	1926	12.2	59	4659	4757
Garst 5515	M	1814	10.8	59	4388	4551
Pioneer 85G77	M	1808	10.7	60	4373	4541
BH Genetics 3808	M	1780	12.2	59	4306	4396
Triumph Seed 442**	ME	1696	10.7	60	4103	4260
Average		**1921**	**11.7**	**60**	**4647**	**4768**

* All yields adjusted to 14% moisture for comparison.

** Variety experienced significant lodging which reduced yield shown.

CONCLUSIONS:

Variety selection is an important decision in farming enterprises in determining profits and economic feasibility of agronomic practices. As grain prices continue an upward trend producers will want to pay closer attention to variety selection and agronomic practices to enhance yields and profits. Producers should evaluate yearly data and compare to other years data of new and established varieties to evaluate their performance under different weather and growing conditions in different locations. Producers should be aware that this demonstration only has one replication and therefore data should be compared to other demonstrations or on-farm production data to enhance value and improve decision making capabilities.

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Figure 1: 2008 Grain Sorghum Variety Yields Graph