

EVALUATION OF CORN VARIETIES IN NAVARRO COUNTY, TEXAS

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SUMMARY:

Fifteen corn varieties were planted south of Dawson, TX in South-West Navarro County to compare yield performance and economic return under local field growing conditions. The plot included 5 early and 10 medium maturity corn hybrids. Yields were fair with the adjusted yield of the top early maturity variety was Triumph 1536CBRR at 92.7 bu/a and the average of all early varieties was 84.28 bu/a. The adjusted yield of the top medium maturity variety was Garst 8248 RR at 88.7 bu/a and the average of all medium varieties was 81.60 bu/a.

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 fifteen corn varieties of varying maturity ranges under the same field growing conditions.

METHODS AND MATERIALS:

Twenty-four rows of each variety were planted March 8, 2007 on 30 inch rows. The site was a Houston Black Clay. Cotton had been the previous crop grown. Land preparation included chisel plowing once, disking twice then planting. Fertilization included 4.5 gallons per acre of 9-24-3 (starter fertilizer) applied preplant followed by 160 pounds to the acre of Anhydrous Ammonia (NH₃ or 82-0-0) topdressed. Herbicide was applied and seed was treated with insecticide. Plots were harvested September 4, 2007 using a John Deere combine. Harvested plot size was 1.22 acres and harvest price was \$3.56/bu.

Yields were weighed with an electronic weigh wagon. Samples were taken on each variety to obtain bushel weight and moisture.

RESULTS AND DISCUSSION:

The adjusted yield of the top early maturity variety was Triumph 1536CBRR at 92.7 bu/a. The lowest yielding early variety was Pioneer 33V16 with an adjusted yield of 77.4 bu/ac. The early maturity yield range between the highest and lowest yield variety was 15.3 bu/a. The average of all early varieties was 84.28 bu/a. Refer to Figure 1.

The adjusted yield of the top medium maturity variety was Garst 8248 RR at 88.7 bu/a. The lowest yielding medium variety was BH Genetics XP9077RR/YGCB with an adjusted yield of 75.7 bu/a. The medium maturity yield range between the highest and lowest yield variety was 13.0 bu/a. The average of all medium varieties was 81.60 bu/a. Refer to Figure 2.

ECONOMIC ANALYSIS:

Economic return was calculated based on the actual yield and cash harvest price. As expected the varieties with the highest actual yield had the highest economic return.

The highest economic return for the early maturity varieties was Triumph 1536CBRR at \$329.96 per acre while the lowest return was Pioneer 33V16 at \$275.63 which represents a difference of \$54.33. Average return per acre was \$300.04. Refer to Figure 1.

The highest economic return for the medium maturity varieties was Garst 8248 RR at \$315.74 per acre while the lowest return was BH Genetics XP9077RRYGCB at \$269.41 per acre which represents a difference of \$46.33. Average return per acre was \$290.49. Refer to Figure 2.

Figure 1: 2007 Navarro County Early Maturity Corn Variety Trial (Daswon Community)

Variety	Maturity Range days	Plot Weight lbs	Moisture %	Bu. Wt. lbs	Yield bu/a	Adj. * Yield bu/a	Gross Return \$/a
Triumph 1536CBRR	115	6310	14.7	52.9	92.4	92.7	329.96
Croplan 6818TS	113	5920	13.7	54.0	86.7	88.0	313.20
Dekalb DKC65-47	115	5696	14.4	56.2	83.4	84.0	298.90
Pioneer 33F85	113	5328	13.5	54	78.0	79.4	282.53
Pioneer 33V16	115	5210	13.7	56.1	76.3	77.4	275.63
Average	114.2	5692.80	14.00	54.64	83.33	84.28	300.04

Figure 2: 2007 Navarro County Medium Maturity Corn Variety Trial (Dawson Community)

Variety	Maturity Range days	Plot Weight lbs	Moisture %	Bu. Wt. lbs	Yield bu/a	Adj. * Yield bu/a	Gross Return \$/a
Garst 8248 RR	117	6038	14.7	54.1	88.4	88.7	315.74
Garst 8295YG1/RR	118	5968	14.3	53.4	87.4	88.1	313.54
Croplan 851TS	117	5616	13.9	51.2	82.2	83.3	296.42
Croplan 818TS	117	5554	14.2	55.1	81.3	82.1	292.13
Garst 8249YG1/RR	117	5518	13.7	53.5	80.8	82.0	291.93
Garst 8287RR	116	5498	14.6	53.8	80.5	80.9	287.84
Dekalb DKC67-23	117	5418	13.9	54.3	79.3	80.3	285.97
BH Gen. BH8717RR/HX	118	5256	14.3	52.8	76.9	77.6	276.13
Triumph 1802CBRR	118	5256	14.4	53	76.9	77.5	275.81
BH Gen. XP9077RR/YGCB	118	5134	14.4	52.3	75.1	75.7	269.41
Average	117.3	5525.60	14.24	53.35	80.88	81.60	290.49

* All yields adjusted to 15% moisture for comparison.

CONCLUSIONS:

Variety selection is an important decision in farming enterprises in determining profits and economic feasibility of agronomic practices. 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. This evaluation should be used in making future variety selections.

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