Texas Agricultural Extension Service
The Texas A&M University System

Result Demonstration Report

Stewart Farm Corn Variety Trial

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SUMMARY: Twelve varieties of corn were planted and compared for tonnage and quality. Due to the drought conditions, yields were lower than anticipated. Yields ranged from 5.7 tons to just over 10.5 tons per acre at 35% DM. All plots were harvested the same day, and moisture in the different varieties ranged from 70% to 78%.

OBJECTIVE: To evaluate twelve major corn varieties for silage production based on tonnage and quality.

MATERIALS AND METHODS: Twelve varieties of corn silage were planted on March 14, 2000 on the Stewart Farm. Manure had been applied to the field during the fall and winter and plowed in. Over 220 additional units of nitrogen were applied through anhydrous and a 24-6-12 fertilizer. Seven pounds of sulfur and two of boron were added as well. The plots were hand-harvested on June 26. For each plot, the percent harvest moisture, the yield per acre, and the percent ear weight was determined. Samples were then taken to the lab, where quality analysis was run.

RESULTS AND DISCUSSIONS: Table 1 shows the results of each of the varieties included in the trial. The yield for all the varieties is less than expected, which can be attributed to our drought conditions during the growing season. There still was a variation in yield from 5.7 tons per acre to 10.5 tons per acre, based on 35% DM. The moisture content of each of the varieties was relatively close, with most being in the 70% to 75% moisture range.

Table 1. Yield results of corn varieties for silage.

Hybrid	Harvest Moisture (%)	Yield/A (tons @ 35% DM)	% Ear Wt. (kernels, cob, husk)
Parker 72	72.2	6.7	31
Parker 71	69.8	7.2	37
Triumph 2010	77.3	7.7	36
UAP DG5516	78	6.9	38
NK N83R7	78.1	6.8	34
Garst 8325	75.1	5.8	41
Pioneer 3223	74.6	7.3	38
Garst 8285	75.8	5.7	42
Pioneer 31B13	72.8	8.0	34
Cargill 8327	75.9	7.2	33
UAP DG5510	74.5	8.1	36
Triumph 1866	70	10.5	34

Samples were taken from each plot, and quality analysis was run. Testing was conducted for the percent ADF, percent cellulose, and percent crude protein. As shown in Table 2, the crude protein percent ranged from a low of 7.68% to over 13.5%. Several varieties showed a low percent lignin, which is the part of the plant that is not digestible, and therefore lignin does depress fiber digestibility, which means the lower the lignin, the higher the digestibility.

Table 2. Quality analysis of corn varieties for silage.

Variety	%ADF	% LIG	% CP
Parker 72	30.75	3.30	10.63
Parker 71	32.76	4.39	9.94
Triumph 2010	29.34	2.82	10.75
UAP DG5516	29.31	2.54	9.12
NK N83R7	27.08	2.55	8.88
Garst 8325	30.52	2.94	9.18
Pioneer 3223	35.20	5.10	7.68
Garst 8285	32.38	3.44	11.73
Pioneer 31B13	28.21	3.05	8.50
Cargill 8327	27.39	2.97	8.76
UAP DG5510	25.81	3.21	9.61
Triumph 1866	25.03	2.56	13.52

As stated earlier, less than ideal weather conditions occurred during the 2000 growing season, which impacted the results of this trial. Weather conditions can change composition, quantity, and quality of silage. This trial demonstrates how well each variety did in severe drought conditions.

Corn silage continues to be a major ingredient in dairy rations. Good quality corn silage is bringing approximately $18 to $20 per ton standing in the field. It is, therefore, important to achieve as high a yield as possible to maximize returns per acre for tonnage and quality.

Additional trials will be conducted in the future to continue evaluating the varieties and help producers to grow and utilize those with the best value.

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