RESULTS OF THE

KENTUCKY SORGO PERFORMANCE TEST

1965

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The objective of the Kentucky Sorgo Performance Test is to provide sorgo sirup producers with an estimate of the relative performance of sorgo varieties. Varieties in the test include those being grown in the Southeastern Region of the United States and several of the more promising experimental lines developed by the U.S. Department of Agriculture at Meridian, Miss. The 1965 test included eight varieties grown in a randomized block design of five replications (Table 1).

Stalk samples of all varieties tested in 21 locations in the Southeastern Region are sent to Meridian, Miss., or Cairo, Ga., for milling, juice analysis, and sirup processing.

The sugar content of the juice and the amount that can be extracted are two important characteristics of sorgo varieties. The percentage of total soluble solids in the juice is determined by using a sugar hydrometer. Most of the soluble solids in the juice are sugar. Juice extraction at Meridian or Cairo was considerably better than that obtained by small mills.

Sirup of high quality should reach a finishing temperature of 108°C (226°F) at usual altitudes in Kentucky. A standard finishing temperature of 110°C (230°F) is used in processing sirup at Meridian. Difficulty in producing an acceptable sirup might be encountered if this temperature cannot be reached. The sirup is taken off when the foam begins to roll and the temperature is more or less static. Raising the temperature higher would tend to scorch the sirup and produce a darker color. All of the varieties in the 1965 test boiled down to the finished temperature desired.

Results from several years' experiments are a better estimate of performance than those from one year; therefore, most attention should be given to the data for the three-year period 1963-65, which are presented in Table 2. Data for the 1965 test are presented in Table 1.

Table 1.—Sorgo Variety Test, Robinson Substation, Quicksand, Ky. 1965

Variety	Sirup Per Ton	Sirup Per Acre	Stalk Weight Total	Stalk Weight Stripped	Brix	Extraction	Lodging	Plant Height
	Gal	Gal	Tons	Tons		%	%	In.
Wiley	19.0	279	18.4	14.7	18.7	57.4	2	108
Sugar Drip	13.6	189	17.5	13.9	14.2	60.9	3	90
Williams	16.1	184	15.0	11.4	15.9	60.5	15	90
Umbrella	16.2	168	12.8	10.4	16.4	58.3	0	84
Mer 59-1	17.9	270	19.8	15.1	17.6	57.3	0	84
Mer 60-2	17.4	216	15.8	12.4	18.8	53.1	0	84
Mer 61-11	21.8	286	16.6	13.1	19.0	58.5	0	90
Mer 62-1	16.7	235	17.3	14.1	18.2	55.1	0	96
Average	17.3	228	16.6	13.1	17.4	57.6	2.5	91
L.S.D. 0.05			3.7	NS				

Table 2.—Three-year summary of sorgo varieties, Robinson Substation, Quicksand, Ky. 1963-65

Variety	Sirup Per Ton	Sirup Per Acre	Stripped Stalks Per Acre	Brix	Extraction	Lodging	Plant Height
	Gal	Gal	Tons		%	%	In.
Wiley	17.8	270	14.7	17.9	56.1	0.7	132
Sugar Drip	14.5	198	13.6	14.6	58.4	1.3	110
Williams	17.0	202	12.1	16.1	58.2	25.0	114
Umbrella	10.5*	94*	13.4	17.0	58.1	0.0	108
Sart**	8.9*	76*	11.3	20.2	51.3	0.0	120
Tracy**	0.0***	0***	12.8	20.1	52.4	0.0	126
Average	11.4	140	13.0	17.6	55.7	5.0	118

* Failed to boil to proper density in 1963.
** Two-year data.
*** Failed to boil to proper density in 1963 and 1964.

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