

RESULTS OF THE KENTUCKY SORGO

PERFORMANCE TEST

1964

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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 USDA at Meridian, Miss. The 1964 test included nine varieties grown in a randomized block design of five replications.

Stalk samples of all varieties tested in 26 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 in 1964 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 the 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. Of the nine varieties in the 1964 test only Tracy failed to boil down to the finishing temperature desired.

Results from several years' experiments are a better estimate of performance than the results from one year; therefore, most attention should be given to the data for the three-year period 1962-64 which are presented in Table 2. Data for the 1964 test are presented in Table 1.

Stalks of six varieties have been sent to Meridian, Miss., for processing for seven years. During this period the variety Wiley made acceptable sirup every year; Williams, six of the seven years; Sugar Drip, five of the seven years; Umbrella, four of the seven years; Sart, three of the seven years; and Tracy, two of the seven years.

Table 1. —Sorgo Variety Test, Robinson Substation, Quicksand, Ky., 1964

Variety	Stripped	Extrac- tion	Brix	Sirup Per		Plant Height
	Stalks			Ton	Acre	
	Per Acre	%		Gal	Gal	In.
	Tons					
Mer 59-1	6.9	56.6	15.1	14.7	101	96
Mer 60-2	7.0	54.2	17.6	16.4	115	132
Mer 61-11	6.3	57.5	16.4	19.2	121	132
Sart	8.5	53.8	20.3	17.8	151	144
Tracy	8.5	54.2	20.5	*	*	132
Wiley	9.3	56.3	15.2	15.0	140	144
Sugar Drip	8.5	57.9	15.6	14.4	122	120
Umbrella	7.5	58.4	17.1	15.2	114	132
Williams	8.0	58.4	16.5	17.0	136	132
Average	7.8	56.3	17.1	14.4	111	129

* Failed to boil to proper density

Table 2. —Three-year summary of sorgo varieties grown at Quicksand, Ky. 1962-1964

Variety	Stripped	Extrac- tion	Brix	Lodg- ing	Sirup Per		Plant Height
	Stalks				Ton	Acre	
	Per Acre	%		%	Gal	Gal	In.
	Tons						
Wiley	17.6	54.7	18.0	1	18.1	334	146
Tracy	14.6	52.0	20.1	0	*	*	124
Sart	14.5	51.5	20.1	0	17.8**	151**	124
Sugar Drip	15.0	56.8	14.4	3	15.0***	203***	118
Williams****	12.4	57.1	16.3	80	17.0	212	122
Umbrella	16.5	58.1	16.7	0	15.2**	114**	120
Average	15.1	55.0	17.6	14	16.6	203	126

* Failed to boil to proper density

** One-year data

*** Two-year data

**** Two-year average, not harvested in 1962