

RESULTS OF THE KENTUCKY SORGO

PERFORMANCE TEST

1963

J. F. Shane

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University of Kentucky
Agricultural Experiment Station
Department of Agronomy
Lexington

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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 1963 test included 12 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 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. Six of the varieties in the 1963 test 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 3-year period 1961-1963 which are presented in Table 2. Data for the 1961 test are presented in Table 1.

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

Table 1. Sorgo Variety Test, Robinson Substation, Quicksand, Ky. 1963

Variety	Stalk Weight	Extraction	Brix	Lodging	Sirup per		Plant Height
	per acre Stripped				Ton	Acre	
	tons	%		%	gal.	gal.	feet
Mer. 59-1	15.7	49.3	18.9	0	*	*	8
Mer. 60-2	11.2	48.2	18.7	0	14.0	157	9
Mer. 60-5	13.9	49.6	16.8	0	*	*	8
Mer. 61-6	21.3	53.0	19.8	1	18.8	400	12
Sart	14.1	48.8	20.1	0	*	*	8
Tracy	17.0	50.9	19.7	0	*	*	10
Wiley	20.2	54.7	19.9	0	19.4	392	12
Mer. 56-12	18.3	53.9	17.4	0	19.2	351	9
Sugar Drip	18.3	56.4	14.1	1	15.5	284	10
Waconia	11.7	54.9	16.5	0	*	*	7
Umbrella	22.2	57.5	17.5	0	*	*	9
Williams	16.9	55.8	16.0	59	17.0	287	10
Means	16.7	51.2	18.0	5	17.3	312	9.3

*Failed to boil to proper density

Table 2. Three year summary of sorgo varieties grown at Quicksand, Ky. 1961-63

Variety	Stalk Weight	Extraction	Brix	Lodging	Sirup per	
	per acre Stripped				Ton	Acre
	tons	%		%	gal.	gal.
Wiley	22.8	56.8	18.8	4.3	19.9	455
Tracy	19.0	54.3	19.1	0.3	17.3*	375*
Sart	18.7	52.5	18.8	1.3	20.2*	368*
Sugar Drip	19.4	58.0	14.1	12.0	16.5**	331**
Williams***	16.0	58.0	14.9	79.5	16.9	270
Umbrella	21.7	60.2	16.2	8.3	17.9*	415*
Means	19.6	56.6	17.0	17.6	18.1	369

* One-year data

** Two-year data

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