RESULTS OF THE KENTUCKY SORGO PERFORMANCE TEST 1961

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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 1961 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 of juice 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.

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. Three of the varieties in the 1961 test failed to boil down to the finishing temperature desired.

The 1960 and 1961 seasons were quite favorable for plant growth. However, during the later stages of plant growth the 1961 season was not quite so wet as the 1960 season. Juice extraction at Meridan or Cairo was considerably better than that obtained by small mills.

Results from several years' experiments are a better estimate of performance than the results from any one year; therefore, most attention should be given to the data for the 3-year period 1959-1961 which are presented in Table 2. Data for the 1961 test are presented in Table 1.

Table 1. - Sorgo Variety Test, Robinson Substation, Quicksand, Ky. 1961

Variety	Stalk Weight per Acre		Extraction	Brix	Temperature	Lodging	Sirup per		Days to Harvest	Plant Height
	Total	Stripped					Ton	Acre		
	tons	tons	%		°F	%	gal	gal		feet
Mer. 56-12	26.8	18.6	63.1	14.1	230	25	17.5	326	127	11
Mer. 58-13	15.2	12.7	62.5	11.9	228	2	11.6	147	113	7
Mer. 59-1	23.1	17.5	57.2	14.4	230	2	17.9	313	136	8
Mer. 59-9	22.0	14.5	56.6	13.4	219	3	*	*	127	9
Sart	23.2	18.2	56.7	16.2	230	3	20.2	368	136	8
Tracy	27.1	21.7	61.0	17.3	226	0	17.3	375	127	9
Wiley	31.1	24.9	62.5	17.7	230	13	20.4	508	136	10
Ky. 58-209	23.9	19.1	56.4	20.3	217	1	*	*	127	9
Sugar Drip	29.0	21.7	61.3	14.9	230	31	17.4	378	127	10
Umbrella	29.1	23.2	64.5	15.5	230	24	17.9	415	127	10
White African	27.6	23.1	61.4	16.3	225	12	*	*	136	10
Williams	19.9	15.1	60.1	13.7	230	100	16.7	252	136	10
Means	24.8	19.2	60.3	15.5	227	18.0	17.4	342	130	9

Table 2. - Three-year summary of sorgo varieties grown at Quicksand, Ky. 1959-61

Variety	Stripped Stalks Per Acre	Extraction	Brix	Temperature	Lodging	Sirup	
						Ton	Acre
	tons	%		°F	%		
Wiley	20.7	59.6	17.5	230.0	29.0	20.5	423
Tracy	19.3	58.1	18.6	224.4	2.7	17.3 2/	375 2/
Sart	18.6	57.5	16.6	211.5	10.7	20.2 2/	368 2/
Sugar Drip	17.9	60.2	15.6	223.7	20.0	17.7 1/	336 1/
Williams	15.3	59.2	15.0	226.4	82.8	16.2 1/	240 1/
Umbrella	19.8	63.2	15.6	225.5	30.1	18.0 1/	355 1/
Means	18.6	59.6	16.5	223.6	29.2	18.3	350

1/ 2-year data

2/ 1-year data