

RESULTS OF THE KENTUCKY SORGO

PERFORMANCE TEST - 1959

J. F. Shane

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University of Kentucky
Agricultural Experiment Station
Department of Agronomy
Lexington

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During the 1959 season 10 sorgo varieties were grown at the Robinson Agricultural Experiment Substation at Quicksand, Ky. The test was laid out in a randomized block design of five replications. Three-row plots, approximately 1/200 acre in size, were used. The season in general was quite favorable for plant growth.

Stalk samples of each of the 10 varieties were sent to the U. S. Department of Agriculture. Sugar Crops Field Station, Meridian, Miss., for milling, juice analysis and sirup processing.

The amount of juice that can be extracted from the stalks and the sugar content of the juice are two important characteristics of sirup varieties. The percentage of soluble solids in the juice is determined by using a Brix spindle or hydrometer. Most of the soluble solids are sugars of some kind.

Sirup of high quality should reach a finishing temperature of at least 108°C (or 226°F). A standard finishing temperature of 110°C (or 230°F) was used for sorgo sirup in the tests. Difficulty in producing an acceptable sirup might be encountered if this temperature cannot be reached. Sart and Tracy and the experimental varieties Mer. 56-6, Mer. 56-9 and Mer. 56-11 failed to boil down to 110°C in the 1959 test.

Data for the 1959 test are presented in Table 1 and for the three-year period 1957-59 in Table 2. Sirup yields for Sart and Tracy per ton and per acre in Table 2 are lower than they would have been if sirup could have been made from these varieties in 1959. In 1958 Tracy would only boil down to 108°C but made an acceptable sirup at that temperature.

Results obtained from a large number of experiments or for a number of years are a better estimate of performance than are the results from any one test or year, therefore, most attention should be given to the information contained in Table 2.

Table 1. Summary of Sorgo Variety Test, Quicksand, Kentucky. 1959.

Variety	Stripped stalks per acre tons	Juice Extrac- tion %	Brix	Sirup		Lodging %	Days to Maturity
				per ton gal	per acre gal		
Wiley	18.8	54.7	15.7	17.0	320	65	135
Mer 55-11	14.5	53.6	11.9	13.3	189	79	126
Mer 56-6	13.5	49.2	17.7	*	*	26	126
Mer 56-9	14.3	52.0	18.2	*	*	1	126
Mer 56-11	15.4	55.8	16.6	*	*	8	126
Tracy	19.0	54.7	19.6	*	*	8	126
Sart	20.5	54.2	18.4	*	*	29	126
Sugar Drip	16.2	57.4	15.7	18.0	294	28	126
Umbrella	19.0	60.2	14.8	19.0	362	64	126
Williams	14.5	55.1	14.8	15.6	227	98	135
Means	16.5	54.7	16.3	16.6	278	41	128

*Failed to boil to proper density

Table 2. Three-year summary of sorgo varieties grown at Quicksand

Variety	Stripped stalks per acre tons	Juice Extrac- tion %	Brix	Sirup		Lodging %	Days to ^{1/} Maturity
				per ton gal	per acre gal		
Wiley	17.0	52.9	15.8	16.4	284	48	132
Tracy	16.3	51.4	17.7	11.4 ^{2/}	173 ^{2/}	3	124
Sart	18.1	50.3	17.3	11.1 ^{2/}	193 ^{2/}	12	137
Sugar	14.0	53.7	14.2	15.1	218	12	124
Umbrella	15.6	55.7	15.3	17.6	279	31	124
Williams	13.4	52.5	14.2	15.3	208	60	128
Means							

^{1/} Two-year data

^{2/} Failed to boil to proper density in 1959