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PERFORMANCE TEST - 1960

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During the 1960 season 11 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. In general, the season was quite favorable for plant growth.

Stalk samples of each of the 11 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. The sirup is taken off when the foam begins to roll and temperature is more or less static. Raising the temperature from this point would tend to scorch the sirup and give a darker color. Only two of the varieties in the 1960 test boiled down to the finishing temperature desired; therefore, temperatures which were reached are given for each of the varieties. Calculated yields are indicated by footnotes.

Data for the 1960 test are presented in Table 1 and for the five-year period 1956-60 in Table 2.

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, Ky. 1960

Variety	Stripped stalks	Juice	Brix	Temp	Lodging	Sirup per	
	per acre	Extraction		rached		ton	acre
	tons	%		°F	%	gal	gal
Wiley	18.4	61.7	19.1	230.0	9.0	24.1	443
Sart	17.2	61.7	15.2	221.0	0	19.8 ^{1/}	340 ^{1/}
Tracy	17.3	58.7	19.3	222.8	0	23.9 ^{1/}	413 ^{1/}
Mer 56-8	11.8	57.4	15.6	226.4	0	18.0	212
Mer 56-12	15.2	61.7	15.5	224.6	2.8	20.1 ^{1/}	306 ^{1/}
Mer 58-11	12.0	59.8	14.6	217.4	18.0	18.4 ^{1/}	221 ^{1/}
Mer 58-12	13.5	58.2	15.2	222.8	9.4	18.6 ^{1/}	251 ^{1/}
Williams	16.2	62.7	16.5	222.8	50.6	21.8 ^{1/}	353 ^{1/}
Sugar Drip	15.9	62.0	16.3	217.4	1.2	21.3 ^{1/}	339 ^{1/}
Umbrella	17.3	65.2	16.4	221.0	2.5	22.5 ^{1/}	389 ^{1/}
Ky. 58-209	16.2	57.4	17.6	215.6	2.0	21.3 ^{1/}	345 ^{1/}
Means	15.5	60.6	16.5	222.0	8.7	20.9	328

^{1/} Calculated yield

Table 2. Summary of Sorgo Variety Test, Quicksand, Ky. 1956-1960

Variety	Stripped stalks	Juice	Brix	Lodging	Sirup per		Days to maturity
	per acre	Extraction			ton	acre	
	tons	%		%	gal	gal	
Wiley	16.4	51.7	16.7	49.7	17.5	295	133 ^{3/}
Tracy	15.7	52.5	17.8	4.8	19.8 ^{2/}	316 ^{2/}	125 ^{3/}
Sart	18.0	50.2	16.9	9.3	17.8 ^{2/}	323 ^{2/}	134 ^{3/}
Sugar Drip	14.7	53.2	14.8	15.7	16.4 ^{1/}	247 ^{1/}	125 ^{3/}
Umbrella	15.5	56.9	15.1	35.0	18.2 ^{1/}	286 ^{1/}	125 ^{3/}
Williams	13.5	53.1	15.0	65.8	16.7 ^{1/}	231 ^{1/}	131 ^{3/}
Means	15.6	52.9	16.1	30.1	17.7	283	129

^{1/} Includes 1 year of calculated yields^{2/} Includes 2 years of calculated yields^{3/} Three-year average