RESULTS OF THE KENTUCKY SORGO PERFORMANCE TESTS - 1958

J. F. Shane

During the 1958 season nine sorgo varieties were grown at Hawesville and Quicksand, Kentucky. The tests were of a randomized block design of five replications. Three-row plots approximately 1/200 acre in size were used. The test at Hawesville was not harvested because of poor growth due to excessive rainfall.

Stalk samples of each of the nine varieties were sent to the U.S.D.A. Sugar Crops Field Station, Meridian, Mississippi for milling, juice analysis, and sirup processing.

One of the most important characteristics of sirup varieties is the sugar content of the juice. This is determined with a Brix hydrometer which measures the total soluble solids content (most of which is sugar).

One of the requirements of a high quality sirup is that it boil down to a density of 76 to 80 degrees Brix. The juice of all varieties except Tracy and Mer 55-1 boiled down to 110 degrees Centigrade (230 degrees Fahrenheidt). Tracy boiled down to 108 degrees Centigrade and made an acceptable sirup. Mer 55-1 would not boil down to more than 104 degrees Centigrade.

Another important characteristic is the amount of juice that can be extracted. This amount will vary depending on the efficiency of the mill used and with the variety. The percent extraction obtained and presented in Table 1 may be slightly higher, on the average, than that obtained with existing milling equipment.

The 1958 growing season was quite favorable for crop growth. Data for the 1958 Sorgo Variety Test are presented in Table 1 and that for the three-year period, 1956-1958, in Table 2.

The results obtained from a large number of experiments are the best estimate of performance for an average season, therefore, more attention should be given to the information contained in Table 2.

Table 1.- Summary of Sorgo Variety Test, Quicksand, Kentucky, 1958.

Variety	Stripped stalks per acre	Juice Extraction	Brix	Sirup		Lodging	Days to Maturity
				per ton	per acre		
	tons	%		gal	gal	%	
Wiley	19.7	55.2	18.1	17.3	341	80.0	129
Mer 55-1	17.7	49.0	20.3	*	*	14.0	129
Mer 55-10	15.3	56.3	15.7	17.3	265	51.6	129
Mer 55-14	20.2	57.3	16.3	17.8	360	35.4	148
Sart	19.9	56.9	17.8	19.2	382	5.6	148
Sugar Drip	15.8	60.8	14.5	15.1	239	8.2	122
Tracy	17.1	56.6	18.3	19.2	328	0.0	122
Williams	15.1	58.5	14.3	16.6	251	74.0	122
Umbrella	15.8	62.5	15.3	18.3	289	29.0	122
Means	17.4	57.0	16.7	17.6	308	33.1	130

* Failed to boil to proper density

L.S.D. = 98 gal per acre

Table 2.- Three year summary of data recorded on the Sorgo Variety Test Quicksand, Kentucky 1956-1958

Variety	Stripped stalks per acre	Juice Extraction	Brix	Sirup		Lodging
				per ton	per acre	
	tons	%		gal	gal	%
Wiley	15.0	47.3	16.2	10.0	237	58
Sart	17.4	45.0	16.9	16.0	282	6
Sugar Drip	13.7	48.9	14.0	14.3	200	14
Tracy	14.0	49.7	16.7	17.4	246	5
Williams	12.3	49.2	14.5	15.3	191	60
Umbrella	13.7	53.1	14.8	16.5	227	36
Means	14.4	48.9	15.5	14.9	231	30

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