

check, as conducted in 1937 by members of the Division of Sugar Plant Investigations is presented. On the basis of the 1937 test, the guarded conclusion is drawn that the variety performed satisfactorily where tried, except in Minnesota where, because of low acre-yield of roots and sucrose percentage about equal to the check, the calculated acre-yields of sugar were significantly below the yield of the check. The leaf-spot resistance of the variety was conclusively shown; strongest superiority of the variety over check was manifested in those cases in which leaf spot was a serious factor.

VARIETY TESTS BY THE HOLLY SUGAR CORPORATION

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Three brief summary charts are shown covering results of the variety tests in (a) Montana and Wyoming, (b) Western Slope of Colorado and (c) The Hamilton City, California, area.

American varieties are compared to a standard commercial check of the intermediate type in the California and Montana-Wyoming tests, U. S. #34 being used for check in the Delta test.

From the data presented in these tables, the American varieties compare favorably with, or exceed the yields of the check and are not significantly different from the check in the California and Montana-Wyoming areas.

In the curly-top area near Delta, Colorado, curly-top resistant strain, U. S. #12, was better than U. S. #34 and #600 but not significantly so.

The non-curly-top resistant varieties were inferior to the curly-top resistant varieties in the Delta tests, as was to be expected.

Variety Summary--Hamilton City, California--Total Plant Yield

<u>Variety</u>	<u>% Sucrose</u>	<u>Tons per Acre</u>	<u>Sugar Per Acre</u>
U.S. 33	17.63	13.588	4808
U.S. 34	17.33	14.815	5160
H.S. 36	18.23	13.896	5059
HGW 36	17.90	15.535	5559
Check	17.40	14.638	5102
Z Value	.5295	.7634	.5702
5% Point	.4090	.4090	.4090
Diff. Req. for Sig.	.8636	1.7332	.647
SEm in % Gen. M.	1.74%	4.32%	4.59%

According to these analyses no variety differs significantly from the commercial check.

Variety Summary--Montana & Wyoming--Comp. best Basis

	US 34	US 217	HS 36	HGW 36	Check	SEm	Dif Req For sig	SEm in % GenM
% Suc.	Torr. 15.4	15.4	16.1	15.9	15.1	.3201	.0954	2.05
	Wor. 16.9	16.8	16.8	16.8	17.4	.4717	1.3342	2.77
	Sher. 16.0	15.8	15.6	15.6	15.9	.2250	.6364	1.43
	Sid. 15.0	14.8	15.4	14.8	15.4	.2494	.7054	1.62
	Ave. 15.8	15.7	16.0	15.8	16.0			

SE of a General Mean = .1654

Diff. req. for significance = .1654 x  $2\sqrt{2}$  = .4678

Tons Per Acre	Torr. 21.894	19.727	22.436	22.515	23.347	.8719	2.4661	3.94
	Wor. 21.704	21.434	18.480	22.789	20.571	.7479	2.1204	3.53
	Sher. 17.509	16.934	17.850	18.742	16.052	.7558	2.1378	4.47
	Sid. 17.560	16.877	18.452	19.766	19.478	1.0006	2.8301	5.55
	Ave. 19.667	18.743	19.304	20.953	19.862			

SE of a General Mean = .4251

Diff. req. for significance = .4251 x  $2\sqrt{2}$  = 1.2024

Sug. per Acre	Torr. 6729	6080	7199	7163	7064	315.50	892	4.56
	Wor. 7338	7194	6226	7692	7181	453.59	1283	6.27
	Sher. 5578	5351	5544	5838	5101	250.66	709	4.62
	Sid. 5261	4992	5682	5842	5991	283.98	803	5.12
	Ave. 6226	5904	6163	6634	6334			

SE of a General Mean = 167.47

Diff. req. for significance = 167.47 x  $2\sqrt{2}$  = 473.67

According to these analyses no variety differs significantly from the commercial check.

Variety Summary--Delta Colorado--Comp. best basis

Variety	% Sucrose	Tons per Acre	Sugar Per Acre
U.S. 12	18.19	17.80	6461
U.S. 34	17.86	17.03	6068
600	17.38	17.20	5977
U.S. 217	18.09	13.46	4870
H.S. 36	18.60	15.18	5648
HGW 36	18.08	13.37	4828
Z Value	.9607	.9647	.9715
5% Point	.4783	.4783	.4783
Diff. req. for Sig.	.4372	2.108	714
Sem in % Gen. M.	0.86%	4.75%	4.47%

According to these analyses no variety is significantly superior to U. S. 34 in yield per acre in tons or sugar per acre but U.S. 217 and H.G.W. 36 are significantly below U.S. 34. In % sucrose H.S. 36 is significantly superior to U.S. 34 and 600 is significantly inferior to U.S. 34.