

AGRONOMIC TEST OF LEAF-SPOT-RESISTANT VARIETIES.

Plan of Test.

This test was planted as an 8 x 8 Latin square. The plots were 8 rows wide and 30 feet long. Machine planted April 20 at approximately 24 pounds of seed per acre. The test was hand thinned June 5 and 6. The spacing was approximately 12 inches between plants in 20 inch rows. The test was harvested the last week in October. All beets on the inside 6 rows of each plot were taken; 180 feet of row per plot. Two 20 beet samples were taken for analysis, and all remainder beets washed and weighed.

Varieties in Test.

Variety Number	Description	Designation
1	:U.S. 215	: 8-269-0
2	:U.S. 215 X Inbreds	: 9-3-01
3	:U.S. 216	: 8-268-0
4	:U.S. 216 X Inbreds	: 9-8-01
5	:U.S. 200 X 215	: Com'l. 1938
6	:Synthetic Variety, 5 Inbreds	: 9-287-0
7	:Synthetic Check	: ---
8	:Local Variety	: ---

Plot and general summaries of this test follow.

**AGRONOMIC TEST OF LEAF-SPOT-RESISTANT VARIETIES
FORT COLLINS, COLORADO, 1940**

PLOT SUMMARIES

Variety Number	Plot NBeets		T. Beets	%	App. Coef	Lbs. Sug. per A.		Stand
	No.	Harv.	Per A.	Sucr.	Purity	Gross	Ind. Av.	
1. 8-269-0 U.S. 215	845	161	14.80	14.40	94.15	4263	4014	89
	848	162	18.75	14.40	94.60	5401	5109	90
	854	162	16.24	13.05	92.60	4239	3925	90
	863	146	18.14	13.10	91.25	4753	4337	81
	875	162	18.27	15.10	93.00	5516	5130	90
	884	131	15.21	13.65	92.10	4352	3824	73
	889	138	15.66	13.95	92.75	4369	4052	77
	898	144	19.38	13.75	92.65	5331	4939	80
Mean			17.06	13.92	92.89	4753	4416	84
2. 9-3-01 U.S. 215 x Inbreds	839	193	19.64	13.75	94.50	5401	5104	107
	852	166	18.66	14.35	93.50	5355	5007	92
	858	185	21.63	14.75	93.30	6382	5954	103
	867	190	21.97	16.45	92.70	7228	6700	106
	872	170	20.84	13.15	93.65	5482	5134	94
	885	156	18.16	13.65	93.20	4957	4620	87
	886	183	20.16	12.00	91.60	4839	4433	102
	897	177	19.36	14.25	93.55	5688	5321	98
Mean			20.13	14.04	93.25	5666	5284	99
3. 8-268-0 U.S. 216	838	191	15.86	11.95	94.20	3790	3570	106
	849	193	18.37	14.15	90.65	5198	4712	107
	859	190	18.58	15.10	91.50	5611	5134	106
	864	178	19.04	13.85	94.20	5275	4969	99
	871	149	18.08	14.50	93.40	5242	4896	83
	882	181	19.14	15.05	93.35	5762	5379	101
	892	190	19.41	13.35	93.20	5181	4829	106
	901	166	17.71	15.60	94.35	5525	5213	92
Mean			18.27	14.19	93.11	5198	4838	100
4. 9-8-01 U.S. 216 x Inbreds	843	194	19.68	15.60	92.35	6141	5671	108
	853	184	14.58	14.35	93.10	4184	3895	102
	855	190	18.18	14.05	94.15	5108	4809	106
	865	201	18.53	14.55	93.80	5394	5060	112
	876	171	17.90	15.10	94.60	5405	5113	95
	878	182	17.37	13.75	92.80	4776	4432	101
	890	163	18.26	14.70	93.65	5368	5027	91
	896	177	17.99	14.90	93.90	5361	5034	98
Mean			17.81	14.62	93.54	5217	4880	102

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PLOT SUMMARIES CONT.

Variety Number	Plot No.	Beets Harv.	T. Beets Per A.	%	App. Coef Purity	Lbs. Sug. per A.		Stand	
						Gross	Ind. Av.		
5. U.S. 200 x 215 Com'l. Seed	840	200	20.47	13.40	94.70	5485	5194	111	
	890	200	19.80	14.95	93.20	5920	5517	111	
	860	186	16.02	13.50	91.05	4324	3937	103	
	862	198	17.76	13.30	90.90	4724	4294	110	
	873	204	21.73	13.80	92.80	5997	5565	113	
	879	188	18.85	14.30	92.45	5392	4985	104	
	893	135	13.26	14.15	93.45	3754	3508	75	
	899	203	20.92	15.45	93.65	6463	6053	113	
	Mean			18.60	14.11	92.78	5257	4882	105
	6. 9-267-0 Synthetic Var. 5 Inbreds	842	189	18.03	14.25	92.50	5140	4754	105
847		175	16.49	13.20	93.15	4353	4055	97	
857		188	19.94	14.30	94.00	5702	5360	104	
869		149	16.16	15.30	93.25	4945	4611	83	
870		176	18.13	12.55	92.65	4550	4216	94	
883		174	18.67	14.75	92.55	5508	5098	97	
888		166	16.15	14.00	92.35	4521	4175	92	
900		168	16.54	14.35	93.30	4746	4428	93	
Mean				17.51	14.09	92.97	4933	4587	96
7. Synthetic Check		844	166	18.14	14.00	94.10	5078	4778	92
	846	181	18.32	14.45	92.60	4196	3885	101	
	856	189	23.25	13.35	91.10	6207	5655	105	
	866	190	21.10	13.65	92.40	5762	5324	106	
	877	174	19.80	14.30	93.05	5662	5268	97	
	881	184	22.05	14.10	92.65	6218	5761	102	
	891	186	21.44	14.55	93.30	6239	5821	103	
	895	176	20.04	12.75	92.50	5110	4727	98	
	Mean			20.52	13.52	92.71	5559	5152	100
8. Great Western Aris. 1938 Seed Seed	841	196	21.80	13.90	94.65	6061	5737	109	
	851	186	22.43	13.70	92.30	6147	5874	103	
	861	187	12.25	12.85	91.80	3148	2890	104	
	868	195	18.97	13.55	92.25	5141	4743	108	
	874	175	23.94	15.40	91.90	7375	6778	97	
	880	180	20.52	13.70	94.00	5622	5285	100	
	887	172	18.71	13.75	93.80	5145	4826	96	
	894	182	22.99	11.60	91.65	5333	4888	101	
	Mean			20.20	13.56	92.79	5496	5103	102

AGRONOMIC TEST OF LEAF-SPOT-RESISTANT VARIETIES
FORE COLLINS, COLORADO, 1940

GENERAL SUMMARY

<u>Variety No.</u>	<u>Seed No.</u>	<u>Lbs. Sug. per A.</u>		<u>T. Beets</u>	<u>%</u>	<u>App. Coef</u>	<u>Stand. ^{1/}</u>
		<u>Gross</u>	<u>Ind. Av.</u>	<u>Per A.</u>	<u>Sug.</u>	<u>Of Purity</u>	
1.	8-269-0	4753	4416	17.06	13.92	92.89	84
2.	9-3-01	5686	5284	20.13	14.04	93.25	99
3.	8-268-0	5198	4838	18.27	14.19	93.11	100
4.	9-8-01	5217	4880	17.81	14.62	93.54	102
5.	U.S. 200x215	5257	4882	18.60	14.11	92.78	105
6.	9-287-0	4933	4587	17.51	14.09	92.97	96
7.	Syn. Check	5559	5152	20.52	13.52	92.71	100
8.	Gr. Western	5496	5103	20.20	13.56	92.79	102
Gen. Mean		5260	4893	18.76	14.01	93.00	98.5
F.		3.04*	2.92*	6.33**	2.56*	†	9.14**
S.E. of Mean		178.9	169.7	.5345	.222		2.15
2times S.E. of a Difference		5061b	480 1b	1.51 †	.632		6
S.E. of Mean in Percent of Mean		3.40%	3.47%	2.85%	1.58%		2.18%

^{1/} Harvested beets per 100 feet of row.

* Exceeds 5% point. (Per gross sugar approximates 1% point)

** Exceeds 1% point.

† Variance for error greater than variance for varieties.

Discussion.

After only a fair start, due to slightly dry soil conditions during germination, this test made good growth and the harvest showed very satisfactory yields. It is believed that as a whole, the test was comparable to commercial beet fields on the better farms of the vicinity and that the results are a fairly reliable indication of the performance of the varieties under farm conditions for this season and region of Colorado.

With the exception of variety No. 1 stands were quite good and reasonably uniform. Slightly poorer stands on a few plots may be attributable to the previously mentioned weed situation, but in general yields do not appear to have been seriously reduced by poor stands. The stand of variety No. 1 was averaged only 84 beets per 100 feet of row. The other seven varieties had average stands approximating 100 beets per 100 feet of row. The yield of Variety No. 1 may have been slightly reduced due to the poorer stands.

In this test, Variety No. 2 was the equal of the checks in yield of beets. Varieties 1, 4, and 6 were probably inferior in yield of beets. Due, probably, to the plentiful supply of moisture and good growing conditions during September, percent sucrose in the beets was relatively low at harvest, and much more variable than is usual at such a late date of harvest. Variety No. 4 ranked first for percent sucrose and the checks appear to be definitely low. The differences among the other five varieties are very small. Only variety No. 1, and possibly No. 6, appear to be low in the yield of sugar per acre in comparison with the checks.