out that the conditions of this test are extreme. Obviously, if the differences are small with practically 100 percent doubles, they would be smaller if the doubles were less than 100 percent, as they ordinarily would be in field practice. In many cases, also, a tolerance of doubles would mean less disturbance and injury to the seedlings in the thinning operations.

Literature Cited

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A Wide- and Narrow-Row Test with Sugar Beets in Southern Idaho

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A test of wide and narrow rows for sugar beets was conducted in the season of 1945 near Jerome, Idaho. The test was in connection with an incidental to curly top resistance breeding work carried on in the same field. The highly resistant variety SL 411 was used.

Methods

Planting was made April 18. Two row widths were used. One of these was the 22-inch width generally used with beets in this area. The other was 44 inches. This extreme width is only 4 inches greater than that which has been extensively tried in other areas. This width was used here because merely doubling the standard row width simplified the experimental procedure and facilitated use of regular field equipment. There were eight rows per plot in the 22-inch width and four rows per plot of the 44-inch width. The plots were 60 feet long but were reduced 1o 55 feet in length at harvest. The intention was to have twice as many plants per 100 feet of row in the 44-inch plots as in the 22-inch rows and thereby have the population per acre the same in both treatments. The after-thinning stand obtained was thicker in the 44-inch rows, but, as shown in table 1, it fell short of being double the number in the 22-inch rows. There were 10 replications of each treatment. Harvest yield data were based on four rows of the plots with 22-inch rows and the two center rows of the plots with 44-inch rows. Four 10-beet samples were taken from each plot at harvest for sugar and purity determinations.

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Results

The data obtained were analyzed by "Student's"[2] paired method and the results are recorded in table 1. The yield of beets averaged 3.55 tons per acre greater from the 22-inch rows, a statistically significant difference. The indicated available sugar was also significantly ; greater from the 22-inch rows. The average percentage of sucrose and the percent purity were both greater in the 22-inch rows, but under the conditions of the test the differences were not statistically significant.

Table 1.—Results with sugar beet rows 22 and 44 inches wide.

Row width	Indicated available sugar	Beets	Sucrose	Purity	Beets per 100 feet at harvest
Inches	Tons	Tons	Percent	Percent	Number
22	2.030	19.44	17.36	86.37	101
44	2.277	15.89	16.90	84.72	198
Difference in favor of 22-inch rows	0.653	3.55	0.46	1.65	–37
S. E. of Mean Diff.	0.10	0.58	0.24	1.03	
Difference ÷ S. E.	6.25**	6.17**	1.89	1.60	

*Exceeds 5-percent point (t = 2.26)
**Exceeds 1-percent point (t = 3.25)

Discussions and Conclusions

Row widths wider than 22 inches may he desirable from the standpoint of some mechanical harvesters, but results presented in this paper indicate that a serious loss was incurred by the use of 44-inch rows. Long-time practices in sugar beet production must be based on net financial returns. For efficiency in production, spacing of the beets to permit optimum spread of the leaves for the best light exposure needs to be considered as well as proper spacing for the optimum relationship of the plants to the soil conditions.

"'Student's" Collected Papers. Cambridge University Press, 1942.