

YONTS, C. DEAN*, J. A. SMITH, KAREN L. PALM, and ROBERT G. WILSON. University of Nebraska, Panhandle Research and Extension Center, 4502 Ave. I, Scottsbluff, NE 69361. - Sugarbeet yield comparison of 14, 22, 30, and 38-inch row width and optimization of the in-row spacing for each row width.

Producers in the Nebraska Panhandle traditionally have grown sugarbeets in 22-inch rows and corn and dry beans in 30-inch rows. The use of two row widths necessitates two sets of implements and tractors, which increases production cost and decreases equipment flexibility. Many producers have switched to growing sugarbeets in 30-inch rows. Is there a reduction in potential yield compared with 22-inch rows, and what is the optimum plant population? Do other combinations of row spacing and plant population have more potential for these growers? A 3-year study addressed these questions by comparing four row widths, 14, 22, 30, and 38 inches, and five target plant populations, 10,000, 16,000, 26,000, 41,000, and 60,000 plants per acre within each row width. Yield response curves were developed for all row widths and final plant populations at harvest time. Maximum sugar yield was attained with a 22-inch row width and a harvest plant population of 30,500 plants per acre. These results may not reflect optimum economic production levels because of other factors, such as equipment and labor, which influence production costs and the final net profit.

FORNSTROM, K. JAMES*, STEPHEN D. MILLER, LARRY HELD, and PAUL BURGNER. Univ. of Wyo, Agri. Engr. Dept., Univ. Station Box 3295, Laramie, WY 82071. - Management options for sugarbeet stand establishment.

Careful selection and application of herbicide and plant to stand can reduce the cost of obtaining an adequate stand of weed-free sugarbeets. This study was conducted at two locations near Powell, WY and two locations near Torrington, WY to demonstrate the economics of planting to stand and complementary herbicide treatments. Seven management options from no labor (plant to stand, preplant herbicide, postemergence herbicide and wick application of herbicides) to full labor (overseeding, no herbicides, thinning and hoeing as needed) were included in the study. Weed densities varied considerably between sites and treatments and ranged from no weeds to 164,000 weeds/A. Regression analysis indicated that 7.4 hrs/A were required to walk a sugarbeet field two times, weeding required 0.27 hours/A for each 1000 weeds and thinning required 6 hours/A. Data were summarized with a computerized budget generator to develop an enterprise budget for each management option at each location. Considering the management options at all locations, economic outcomes ranged from a high net return of \$295/A (\$936 gross minus \$412 variable and \$229 fixed cost), to a low of \$-258/A (\$608 gross minus \$648 variable and \$218 fixed cost). Labor requirements explained a large portion of the difference in observed variable costs among management options.