FACTORS AFFECTING STAND ESTABLISHMENT IN THE RED RIVER VALLEY

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ABSTILACT

Optimum plant populations prome te maximum yields of kigh quality, high yielding averations in Minnearra and North Dakota. Tare 125 and field determination of harvestable root numbers indicate growers frequently harvest 5,000 to 10,000 fewer roots per acre than is optimum. Minn-Dak Farmers Cooperative yield of recoverable sugar per acre averaged about 0,000 lb/A from 1975-1984 with populations of 20-25,000 plants per acre. Average recoverable sugar per wre yields for 1990-1994 were greater than per acre.

YONTS, C. DEAN¹, ROBERT G. WILSON², and JOHN A. SMITH³, ¹Associate Professor, ²Professor, and ³Associate Professor, University of Nebraska, Panhandle Research and Extension Center, 4502 Avenue I, Scottsbluff, NE 69361. - <u>Influence of planting and</u> replanting date on stand, vield and quality of sugarbeets

Soil moisture and temperature, key factors for emergence, are not always favorable in the spring. The result is variation of planting date and effective emergence date, and occasional replanting. The decision to plant early must compare the risk of freezing temperatures and replanting with the potential for increasing the growing season. To assist in this decision making process, a study was initiated with the primary objective of determining how date of planting affects stand, yield, and quality of sugarbeets. Over a three year period, field studies were conducted at four locations and included five planting dates beginning in April. Other factors included in the study were: (1) two varieties, and (2) two planting methods. At harvest, plant density, root yield, percent sugar and tare were determined for each treatment. Planting methods, plant-to-stand and thin-to-stand had no effect on sugarbeet yield. The two varieties responded differently to the five planting dates. The Monohikari variety provided greatest yield with the first and last planting dates. The second variety produced similar yields from the first three planting dates and had less variation among planting dates. Overall, yields tended to be similar for the planting dates during April and declined by as much as 12 tons/acre for the last planting date in May.

reduced sugarbest stand by 23%. Larproper rate or method of use of intercicide application reduced sugarbest stand establishment by 10 to 50%. Higher than communicated plant populations in excess of about 175 beets par 100° of 22° row (41,580 plants/A) at post thinning time (4-6 leaf stage) significantly reduced or tended to reduced recoverable success per acre. Weight per harvestable root also decreased it om approximately 1.5 to 0.9 lb/beet as plant population increased from 150 to 300 beets per 100° of row (71,280 plant/erre). Sugarbeet processing companies believe ion of sources is intreased from storage plies with a high percentage of small roots.

Sugatheet growen must pay eareful attention to every preduction practice that could reduce plant population. Optimum plant populations increase the potential profit per acre from a growers best management practices designed for high yield; high quality requires production. Optimum suggarbeet plant populations tenarine a key to successful sugarbeet culture.