

FACTORS AFFECTING STAND ESTABLISHMENT  
IN THE RED RIVER VALLEY

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ABSTRACT

Optimum plant population provides maximum yields of high quality, high yielding  
sugarbeets in Minnesota and North Dakota. Tare and field determination of  
harvestable root number indicate grower densities between 2,000 to 10,000 plants per  
acre are optimum. Minnesota Farmer Cooperative yield of harvestable sugar  
per acre averaged about 4,000 lbs/A from 1972-1981 with populations of 20-22,000 plants  
per acre. Average harvestable sugar per acre yields for 1980-1984 were greater than

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replanting date on stand, yield 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.