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For many years, growers in the North Dakota and Minnesota were advised to plant 150 plants per 100 foot of row spaced 22 inches apart. Research done at North Dakota State University and the University of Minnesota in 2003 and 2004 showed that a plant population of 175 evenly spaced plants per 100 foot of row spaced 22 inches apart at the six leaf stage was ideal for maximum recoverable sucrose per acre. This spacing was effective for both a high tonnage and a high sugar conventional sugarbeet variety. Since 2008, sugarbeet growers started planting Roundup Ready sugarbeet and currently, over 97% of the US sugarbeet acreage is using this technology. Growers will like to know if current plant population recommendations should be changed. The objective of this research was to determine the plant population of a widely grown Roundup Ready variety that will provide maximum recoverable sucrose. In 2015 and 2016, field trials were conducted at Prosper, ND. Plots comprised six 22-inch wide rows that were 25 feet long. Plots were planted at 2 5/8 inch seed spacing and then thinned at the 6- to 8-leaf stage. Plant populations after thinning were 50, 100, 150, 175, 200, 250 and 300 plants per 100 foot of row. Planting was done on April 18 in 2015 and May 2 in 2016 and harvesting was done on September 16 in 2015 and September 14 in 2016. In both years, tonnage and recoverable sucrose per acre (RSA) were significantly lower in the 50 plants per 100 ft of row compared to the higher populations. In 2015, there was no significant difference in RSA among the 100 to 300 plants per 100 ft of row populations whereas in 2016 there was no significant difference in RSA among the 150 to 300 plants per 100 ft of row populations. In both years, there were no significant differences in sucrose concentrations among any of the treatments. The data suggests that planting to achieve populations of 175 to 200 plants per 100 ft of row tend to produce optimum RSA and reduction in population to 150 plants did not adversely impact RSA.