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To replant or not: establishing lower end sugarbeet population threshold.

Replanting of sugarbeet due to early season frost or wind damage is a common practice in the western Great Plains and Intermountain West. Replanting delays the crop several weeks and may result in reduced sugar and root yield. To provide a better threshold for how much stand loss is needed to justify replanting sugarbeet, a series of studies were conducted to compare sugarbeet root and sucrose yield between a normal planting date and a delayed planting date. Studies were established in Scottsbluff, NE in 2014, 2015, and 2016 under both furrow and sprinkler irrigation, using 22 inch and 30 inch row spacing. The two most common sugarbeet varieties for the region were planted near 1 May at populations of 12, 18, 24, 30, 36, 42, and 50,000 plants acre⁻¹, and compared to a replant treatment of 36,000 plants acre⁻¹ planted near 1 June. Replanted sugarbeets did not yield better than sugarbeets planted near 1 May regardless of planting population, variety, irrigation system, or row spacing. Regression analysis was used to project a replanting threshold, however the threshold varies by year, irrigation system, and row spacing. Depending on conditions a population of 5,000 to 15,000 plants acre⁻¹ may warrant replanting. Results suggest sugarbeet populations as low as 15,000 plants acre⁻¹ should not be replanted.