

ECONOMIC BENEFITS OF THE 2025 NDSU SUGARBEET PLANTER TEST STAND CLINICS

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Introduction:

Seed is one component among several others that contributes to the high input costs associated with sugarbeet production. As such, regular planter maintenance is a critical factor in optimizing plant establishment in the field. Uniformly spaced seed improves plant development and harvestability. NDSU research has demonstrated that optimal seed spacing and resultant plant stand establishment are key determinants of fields producing high root and recoverable sucrose yields. Correspondingly, proper seed spacing can contribute to more effective harvesting operations that minimize mechanical injury to roots, thus improving their long-term storability after harvest.

The NDSU Sugarbeet Planter Test Stand Clinics are a service activity that is organized and carried out by university personnel in cooperation with agriculturists from American Crystal Sugar Company, the Minn-Dak Farmers Cooperative, and the Southern Minnesota Beet Sugar Cooperative. Most of the funding for the program is provided by the Sugarbeet Research and Education Board of Minnesota and North Dakota (SBREB). Dr. Joe Giles (NDSU professor, ret.) began the test stand clinics in 1984 with Mr. Norman Cattanaach (NDSU Research Specialist, ret.). Historically, they have been held between February and early April at multiple locations throughout the Red River Valley, eastern Montana, and southern Minnesota. This program has been an important component of pre-season field preparations for hundreds of sugarbeet farmers throughout these production areas for over four decades, and it continues to serve sugarbeet producers in Minnesota and North Dakota.

This program is designed to assist sugarbeet producers with regular maintenance, troubleshooting, and adjustments on sugarbeet planter row units to optimize seed delivery during planting operations. The overall goal is to set the stage for maximum profitability in each of their sugarbeet fields by delivering proper, consistent delivery rates of undamaged seed per unit row length according to research-based recommendations.

Materials and Methods:

Activities involved with preparation for the Test Stand Clinics include cleaning, testing, troubleshooting and repair of each of the six mechanical test stand units. Regular maintenance tasks often involve screen and filter cleaning, pump replacements, and oil changes. Concurrent to those activities is the task of scheduling the clinics throughout the three sugarbeet cooperative growing areas and requesting/arranging for assistance from agriculturists and other allied agriculture personnel from agricultural industry for each clinic location. Other important activities include transport and operation, as well as maintenance of the stand units between and even during some of the clinics when units break down and require service or repair.

At each clinic, the accuracy of seed delivery is evaluated on planter row units brought in by participating growers. Units that deliver erratically spaced seed are then dismantled and evaluated for broken or worn out components. On-site specialists then provide advice on parts needed or assistance with repairing them that day. Additionally, growers can compare delivery of various seed sizes and coating levels through their row units, try different seed plates, evaluate vacuum settings, and get helpful information from planter experts, seed company representatives, sugar cooperative agronomists, university personnel, and other producers.

Results and Discussion:

The cost of testing row units at implement dealerships and equipment service centers was estimated at about \$25 in 2015 (Cattanaach and Chatterjee 2016). An inflation calculator (Webster 2026) was used to determine that the current cost of that service in 2025 would be about \$33.86 per unit. During the 2025 Test Stand Clinic season, a total of 13 clinics were held over 23 testing days (i.e., excluding travel/transport days) throughout the North Dakota and Minnesota sugarbeet-growing areas between February and April of 2025. In that period, 269 growers participated, and a total of 6,644 individual row units were tested.

Given the cost savings of this free service (estimated at a value of \$33.86/unit) that was provided by the SBREB and NDSU, the clinics were estimated to have saved participating producers a collective \$224,966. Based on information provided by the participating producers, the units tested and were subsequently used to plant a total of 159,398 sugarbeet production acres within the three North Dakota and Minnesota sugarbeet cooperatives. In a recent analysis of anonymous grower data obtained from two of those cooperatives, it was estimated that growers who regularly participate in the Test Stand Clinics or those that regularly have their units tested elsewhere generate an average of 2.31 to 3.0% higher yields and resulting revenues than those who do not regularly have their planters tested. By using the more conservative value of a 2.31% yield increase and extrapolating that benefit to the row units tested and acres impacted, we estimate the gross direct economic benefit of the 2025 Planter Test Stand Clinics program to the region at \$8,219,342, which does not include the benefit of cost savings to individual growers for testing the units. The yield and revenue benefits that occur by using properly functioning planter row units are likely associated with uniform plant stands per unit row length, even seedling emergence, and lower frequencies of seed skips or double-planted seeds, thus leading to healthy plant development, improved harvestability, and better postharvest root storability. These figures, which were calculated conservatively, easily justify the costs and efforts associated with running the clinics.

Table 1. Sugarbeet Planter Test Stand Clinic locations and impacts, 2025

Location	Host	Test days	Grower participants	Units tested	Grower cost savings (\$33.86/row unit) ^a
Renville	Southern MN Beet Sugar Coop.	2	11	216	\$7,314
Wahpeton	Minn-Dak Farmers Coop.	3	38	830	\$28,104
Kennedy	Kevin Klein shop	1	21	528	\$17,878
Grafton	Pro-Ag Equipment	1	11	252	\$8,533
East Grand Forks, MN	Steve Adams Shop	2	16	348	\$11,783
Ada	Valley United Cooperative	2	21	540	\$18,284
Crookston	Valley Plains Equipment	2	24	564	\$19,097
Hillsboro	Valley Plains Equipment	2	13	324	\$10,971
Euclid/Angus	Strickler farm shop	2	23	624	\$21,129
Cavalier	Cavalier Equipment	1	31	816	\$27,630
Moorhead	American Crystal seed plant	2	27	798	\$27,020
Comstock	Askegaard shop/Betaseed	2	28	672	\$22,754
St. Thomas	Sagert shop/Betaseed	1	5	132	\$4,470
TOTALS		23	269	6,644	\$224,966

^aEstimated cost of service per planter row unit in 2025 by using the inflation calculator of Webster (2026) to convert cost of \$25 in 2015 as cited by Cattanach and Chatterjee (2016)

References cited:

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