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The reintroduction of pelleted sugarbeet seed at the Southern Minnesota Sugar Cooperative.

ABSTRACT

Virtually no pelleted sugarbeet seed was used by the growers of the Southern Minnesota Sugar Cooperative (SMSC) during the early to mid 1980's. The slow and uneven emergence characteristics of the old clay-based pellets had discouraged their continued use in this and many other growing areas of the United States. In addition, growers were satisfied with the new encrusted seed being offered by seed companies as an improvement on the traditional dusty seed treatments. Accurate seed spacing and consistent emergence characteristics were primary considerations of growers who were planting-to-stand in an effort to reduce costs.

Germain's (Seed Systems) introduced a new pellet formulation in 1988, designated 'RV5', which was designed to emerge better under a wider range of soil moisture levels. This new pellet emerged better than or equal to non-pelleted sugarbeet seed in low soil moisture test conditions in field trials at North Dakota State University and the University of Minnesota, Crookston. Further, extensive planter test stand evaluations documented that the uniformly shaped pellets generally outperformed non-pelleted seed, producing a higher seeding percentage with fewer doubles and skips. Evaluations by engineers at the University of Nebraska Panhandle Research and Extension Center later confirmed that the pellets generally provided better seed and plant spacings than medium non-pelleted seed over a wide range of test parameters. The greatest improvements in plantability occurred in the new air planters with their longer seed drop.

Extensive field trials confirmed the consistent emergence characteristics under a wide range of grower management systems. Explanations of the improved performance of the new pellet formulation were: (1) Substituting organic based materials for the clay as the primary component in the formulation. (2) The introduction of a new seed priming or steeping process. (3) Institution of a series of quality assurance tests to identify seedlots suitable for pelleting.

Growers noted that pellets improved planter accuracy which produced a more uniform crop that was easier to defoliate and harvest. These improvements in harvestability ultimately have an impact on grower payments which are based on a quality contract. Piling properly defoliated and uniformly sized sugarbeets is an integral component of successful sugarbeet storage during the 200+ day slice campaign at SMSC.

The registration Tachigaren to control the seedling disease *Aphanomyces* caused a major surge in the popularity of pelleted seed. The introduction of a new, advanced priming process, called PAT, also increased interest.

Advances in pelleting technology and the registration of new seed treatments gave pelleted sugarbeet seed advantages over non-pelleted seed in some instances. Changes in the needs of the Southern Minnesota Sugar growers caused them to reconsider the need for pelleted seed. Pelleted sugarbeet seed use by the SMSC has increased from less than 1000 pounds in 1988 to over 450,000 pounds in 1997. Nearly 90% of SMSC's 108,000 harvested acres will be planted to pellets in 1997, including 41,000 acres of Tachigaren treated pellets and 11,000 acres of PAT pellets.