DEVELOPMENT OF AN APHANOMYCES NURSERY FOR VARIETY APPROVAL AT SOUTHERN MINNESOTA BEET SUGAR COOPERATIVE

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Aphanomyces root rot is a serious disease problem in the Southern Minnesota Beet Sugar Cooperative growing area. Entire sugarbeet fields and portions of sugarbeet fields have been lost or severely damaged due to aphanomyces root rot. Because of the devastating effects of aphanomyces root rot, SMBSC created an aphanomyces tolerance criteria for variety approval. SMBSC is currently the only sugar cooperative in the United States to have an aphanomyces rating criteria in place for a variety to make full approval for planting. SMBSC has submitted entries to the Betaseed Aphanomyces Nursery in Shakopee, MN for many years.   In 2006, SMBSC decided to have an aphanomyces nursery within our growing area to provide additional data on variety tolerance to aphanomyces. In 2007, Steve Roehl and Osten Tvedt broke ground on SMBSC's aphanomyces nursery. The land used for the nursery was owned by SMBSC and had previously been used for wastewater irrigation from the factory, but had never been planted to sugarbeets in the past. Aphanomyces susceptible sugarbeets were planted on the parcel each year to build up the disease pressure within the nursery area, and an irrigation system was installed. The planting of aphanomyces susceptible sugarbeets each year allowed a natural infestation of aphanomyces to develop. In the fall of 2011, soil samples were sent to Jason Brantner at the Northwest Research and Outreach Center in Crookston, MN for aphanomyces indexing. The south portion of the nursery had an aphanomyces index value of 99 on a 1-100 scale. In the spring of 2012, all entries in the SMBSC Official Variety Trials were planted in the SMBSC nursery as well as submitted to Betaseed's nursery in Shakopee. Root ratings were taken in September of 2012 and the data was used in variety approval for the 2013 sugarbeet crop.