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## **IMPACT OF AMERICAN GERMLASM FOR RESISTANCE BREEDING IN SUGAR BEET**

**L'importance de matières génétiques américaines dans la sélection de  
résistances de betteraves sucrières / Die Bedeutung amerikanischen  
genetischen Materials für die Resistenzzüchtung an Zuckerrüben**

### **ABSTRACT**

The North American sugar beet market is one of the most diverse in the world, divided into eleven different production areas spread out over an area as large as Europe, with up to seven important pest and disease resistances needed for each growing area. Over the last several years the disease and pest pressure has become more complex, stronger and more widely distributed. In seven of eleven markets *Cercospora* leaf spot tolerance is a required trait for variety approval. Here an increase in level of tolerance needed for approval is under consideration due to the continual development of *Cercospora* strains resistant to the current fungicides. In Southern Minnesota yield losses of 30% have been shown without more than one source of resistance against *Rhizomania*. MultiSource®™ *rhizomania* resistance package has become a needed attribute in the majority of markets the last five years. *Rhizoctonia* root and crown rot resistance and nematode tolerance are crucial needs for sugar beet growing in several markets. Root aphid tolerance is also essential in many areas, recently emerging at economically important levels in the Red River Valley. This diversity of pests and diseases has required the breeding companies to make the best use of existing available germplasm. The successful development of combinations of multiple pest and disease resistance and tolerances has played a role in the increasing yields seen in North America the last years. With greater and more diverse disease pressure also evolving outside of North America, the developed germplasm and experience are likely to bring added value and be utilized in Europe as well.

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