

Sugar Beet Root Storage Properties Are Unaffected by Cercospora Leaf Spot

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Abstract

Cercospora leaf spot (CLS; causal agent *Cercospora beticola* Sacc.) is endemic in many sugar beet production regions due to the widespread distribution of *C. beticola* and the inability of current management practices to provide complete control of the disease. Roots harvested from plants with CLS, therefore, are inevitably incorporated into sugar beet root storage piles, even though the effects of CLS on root storage properties are largely unknown. Research was conducted to determine the effects of CLS on storage properties including root respiration rate, sucrose loss, invert sugar accumulation, loss in recoverable sucrose yield, and changes in sucrose loss to molasses with respect to CLS disease severity and storage duration. Roots were obtained from plants with four levels of CLS severity in each of three production years, stored at 5°C and 95% relative humidity for up to 120 days, and evaluated for storage characteristics after 30, 90, and 120 days storage. No significant or repeatable effects of CLS on root respiration rate, sucrose loss, invert sugar accumulation, loss in recoverable sucrose yield, or change in sucrose loss to molasses were detected after 30, 90, or 120 days storage regardless of the severity of CLS disease symptoms. Therefore, no evidence was found that CLS accelerates sugar beet storage losses, and it is concluded that roots harvested from plants with CLS can be stored without additional or specialized precaution, regardless of CLS symptom severity.

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