

*Pectobacterium brasiliense* as a cause of soft rot decay of sugar beet. Mike Metzger, Viviana Rivera, Robert Brueggeman and Gary Secor. Department of Plant Pathology, North Dakota State University, Fargo, ND 58102

A soft rot decay of sugar beet was observed in commercial fields in North Dakota and Minnesota from 2012 to 2015. Symptoms resemble those reported for bacterial vascular necrosis and rot caused by *Pectobacterium betavasculorum* including soft decay of internal root tissues, reddening of affected tissue, blackening of petiole vascular bundles, half-leaf yellowing and frothing. The disease causes serious yield losses in the field and economic losses in the factory due to contamination by invert sugar that reduces sugar quality. Bacteria were isolated and used to produce symptoms in greenhouse trials. Bacterial DNA was extracted from 46 isolates pathogenic to sugar beet using and analyzed by restriction-associated DNA genotype-by-sequencing. Partial sequences of five genes previously used in *Pectobacterium* subspecies phylogenetic analysis showed 99.76% nucleotide sequence identity on average across all five genes to the *P. carotovorum* subsp. *brasiliense* reference sequences. *Pectobacterium carotovorum* subsp. *brasiliense* is a new cause field soft rot decay of sugar beet in North America distinct from *Pectobacterium betavasculorum* that causes similar symptoms.