

BUGBEE, WILLIAM M. USDA, Agricultural Research Service, P.O. Box 5677 - University Station, Fargo, ND 58105 - A pectin lyase inhibitor from sugar beet.

Pectin lyase (PNL), produced by Rhizoctonia solani, is a major factor in causing crown and root rot. A constitutive inhibitor of PNL was extracted from healthy sugar beet roots. The pectin lyase inhibitor protein (PNLIP) was purified and partially characterized. Inhibitory activity was most effective at pH 6.5 to 7.5. The average PNLIP content (83 U/mg dry wt) for crown, hypocotyl and root tissue was 4% higher in a root rot resistant germplasm line than in a susceptible cultivar and was higher in the root than the crown of the resistant cultivar. PNLIP partially protected 8 mm root disks from damage caused by PNL in an in vitro test. Antibodies to PNLIP will be used to assay individual plants for PNLIP by enzyme-linked immunosorbant assay.

GERIK, J. S.* , and T. A. BABB. USDA, Agricultural Research Service, 1636 E. Alisal St., Salinas, CA 93905, and Spreckels Sugar Co., Inc., Road 18C, P.O. Box 2240, Woodland, CA 95695. - Inoculum density of *Polymyxa betae* and beet necrotic yellow vein virus in soils from California sugarbeet fields fumigated and not fumigated with 1,3-dichloropropene.

Soil was collected from several sugarbeet fields in California and were assayed for the number of infecting units of *Polymyxa betae* and beet necrotic yellow vein virus (BNYVV) using a most probable number (MPN) technique. This technique requires that the soils be diluted, in a systematic manner, with sterile soil, past a point where the pathogens can no longer be detected. The soil dilutions required for the MPN technique were made using aliquots of the soil to be assayed which had been sterilized in an autoclave. The culture of bait plants in the diluted soils was accomplished in 24 well tissue culture plates, as described by Ciafardini and Marotta (Appl. Environ. Microbiol.: 1273-1278, 1989). Roots of the bait plants were assayed visually for *P. betae* and tested by ELISA for infection by BNYVV. These assays provide information as to the inoculum density in sugarbeet fields known to be heavily infested with *P. betae* and BNYVV. Additional studies were conducted with soil collected from 2 field plots fumigated with 0, 9 or 12 gallons/acre of 1,3-dichloropropene. These plots were designed as randomized complete blocks, and random soil samples were collected from each plot. Soil samples were assayed for number of infecting units of *P. betae* and BNYVV using the MPN technique. These assays provide information as to the effect of 1,3-dichloropropene on the population of *P. betae* and BNYVV.