

WISLER, G.C.¹, J.N. WIDNER², J.E. DUFFUS¹, H.Y. LIU¹, and J.L. SEARS¹, ¹USDA-ARS, 1636 E. Alisal St., Salinas, CA 93905, and ²Southern Minnesota Beet Sugar Cooperative, E. Hwy 212, P.O. Box 500, Renville, MN 56284. A new report of Rhizomania and other furoviruses infecting sugar beet in Minnesota. Part II: laboratory analyses.

Fields planted in sugar beet in Southern Minnesota showing patches of yellowing, upright leaves, reduced root size, and root proliferation characteristic of Rhizomania were evaluated for beet necrotic yellow vein virus (BNYVV) and other sugar beet furoviruses. ELISA tests and western blot analyses using both specific and broadly reactive antisera and recovery by mechanical inoculation of *Chenopodium quinoa* and *Beta macrocarpa* positively identified BNYVV in 59/90 beet samples tested. Beets showing leaf symptoms of vein clearing, vein banding, mosaic and vein necrosis were all identified as being infected with beet soil-borne mosaic virus (BSBMV) only. No systemic leaf symptoms of BNYVV were found in any sample. The BSBMV isolates were identical to one another based on symptomatology of indicator plants and identical molecular weights in western blots (ca. 24 kDa), but symptoms were distinct from other members of the BSBMV serogroup isolates previously studied from Texas, Idaho, Nebraska, and Colorado. The beet soil-borne virus (BSBV) was also recovered by mechanical inoculation and western blot analysis (antisera donated by R. Koenig) in three samples from field collected beets. This is a new report of BNYVV, BSBMV, and BSBV in Minnesota.