

HEIDEL, G. B.*, and C. M. RUSH, Texas Agricultural Experiment Station, P.O. Drawer 10, Bushland, TX 79012. - Effects on growth of two sugar beet cultivars infected by BNYVV, BSBMV, or BNYVV + BSBMV.

Beet soilborne mosaic virus (BSBMV), a rod-shaped virus transmitted by *Polymyxa betae*, closely resembles beet necrotic yellow vein virus (BNYVV), but the viruses are serologically distinct. Two studies were conducted to evaluate the effect of BSBMV on sugar beet growth. For the first study, sugar beet seedlings (cv. HH67 and Rhizosen) were vortexed in inoculum of one of three BSBMV isolates (BSBMV-1, BSBMV-2, BSBMV-3), BNYVV, or BSBMV + BNYVV. Inoculum was prepared by grinding symptomatic *Chenopodium quinoa* leaf tissue in 0.1 M potassium phosphate buffer, pH 7.4, with 0.02 M sodium sulfite and 0.45% (w:v) carborundum. Top and root dry weights of infected sugar beets in all the treatments were reduced, but the reduction was not significant compared to both mock-inoculated (buffer + carborundum) and non-inoculated controls. In the second study, seeds of HH67 or Rhizosen were planted directly over lateral beet roots infested with viruliferous *P. betae*. Top and root dry weights of sugar beets in all virus treatments were significantly reduced in comparison to those of non-viruliferous *P. betae* and non-infested control beets. Studies suggest that BSBMV is virulent, but field observations do not always support these results. Use of the vortex method to inoculate sugar beets can avoid the presence of confounding pathogens maintained in *P. betae* cultures, but the use of viruliferous *P. betae* as inoculum may better reflect field disease development.