

LEWELLEN, R. T.^{1*}, G. C. WISLER¹, H.-Y. LIU¹, S. R. KAFFKA², J. L. SEARS¹, and J. E. DUFFUS¹, ¹USDA, Agricultural Research Service, 1636 E. Alisal Street, Salinas, CA 93905, and ²University of California, Department of Agronomy and Range Science, Davis, CA 95616. **Reaction of sugarbeet breeding lines and hybrids to beet chlorosis luteovirus.**

Virus yellows is a complex of aphid vectored viruses that may include beet yellows, beet western yellows (BWYV), beet mosaic, and in Europe, beet mild yellows (BMYV) viruses. Recently, a new luteovirus of sugarbeet was recognized in California, Texas, Colorado, and Nebraska that is similar to BWYV and BMYV. It has been named beet chlorosis virus (BChV). BChV has a different host range than BWYV or BMYV. The host range of BChV includes *Chenopodium capitatum* causing leaves to turn red which led to the virus affectionately being called "capitatum red." On sugarbeet, foliar symptoms are similar to BWYV but with a tendency for greater interveinal yellowing with distinct green veins. BChV was used in 1997 to inoculate sugarbeet variety trials at Salinas and Davis, California to determine its effects on yield and the occurrence of differential host-plant reactions. The yield reduction caused by BChV was similar but probably more severe than that caused by BWYV. Sugar yield losses ranged from about 5 to 40%. In general, the reactions fit the loss pattern known for BWYV and BMYV. Lines and hybrids from the virus yellows resistance breeding program at Salinas tended to show the most resistance. The most susceptible commercial hybrids tested were those that have been grown in Colorado and Nebraska where BChV has caused significant damage in several recent years.