DUFFUS, JAMES E., and H. Y. LIU*. USDA-ARS, 1636 E. Alisal St., Salinas, CA 93905. - Unique beet western yellows virus isolates from California and Texas.

Yellowing virus isolates collected in California and Texas have been shown to have unique biological properties. They are very similar to "mild isolates" of the beet yellows virus (BYV) as reported in the late 1940's and early 1950's from Europe and U.S.A. The mild yellowing isolates produce only mild interveinal reddening symptoms on the BYV indicator *Chenopodium capitatum*, they have a host range which includes common indicator species of BYV, they are not mechanically transmitted as are severe BYV isolates, they do not cross protect against subsequent inoculation by severe BYV isolates, and they are serologically unrelated to severe BYV isolates. Insect transmission, host range studies, virus purification and serology have shown that these isolates are not mild isolates of BYV but are unique isolates of beet western yellows virus (BWYV). Most commonly found BWYV isolates from beet have a wide host range and are readily distinguished from BYV by "diagnostic" infection of *Capsella bursa-pastoris* and lack of infection of *Chenopodium capitatum*. These newly described isolates of BWYV do not affect *Capsella* but cause symptoms on *Chenopodium*. These "new" biological types may be more damaging to sugarbeet but may be more readily controlled by host-free periods than conventional BWYV strains.

FAIL, GAIL L.*, AND L. L. HOEFERT. USDA, Agricultural Research Service, 1636 E. Alisal St., Salinas, CA 93905. - Electron microscopy of sugarbeet leaves infected with Beet Distortion Mosaic Virus.

Beet Distortion Mosaic Virus (BDMV), a soil-transmitted virus from the Texas panhandle, causes mosaic symptoms and hyperplasia of leaf mesophyll cells that externally appear as leaf distortions. Particles are flexuous rods which range in length from 650 nm (in leaf dips) to 2,000 nm (in purified samples). BDMV can be mechanically transmitted to several species in the Chenopodiaceae, and to *Gomphrena globosa*, in the Amaranthaceae. Infections may be limited to local lesions, or may be systemic. The development of virus inclusions has been studied in systemic infections of sugar beet, spinach, and *G. globosa*. Initial examinations used light microscopy of unfixed tissues stained with Azure A. Infected plant tissues contained inclusion bodies in mesophyll and phloem. Electron microscopy showed that the inclusion bodies were composed of tightly packed bundles of virus particles, which commonly attached to the outer membranes of chloroplasts. Vesicles similar to those described in closterovirus infections were present in advanced infections.