

Section 1
Mites and Sap-Sucking Insects

TRANSMISSION OF POTATO LEAFROLL VIRUS (PLRV) TO
WILD CRUCIFERS BY MYZUS PERSICAE (SULZER) AND
DETECTION BY ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA)
L. Fox, K. D. Biever, J. E. Duffus and P. E. Thomas
USDA, ARS, 3706 W. Nob Hill Blvd., Yakima, WA 98902

A potato leafroll virus (PLRV) isolate has been successfully transmitted to and recovered from two wild crucifers, Sisymbrium altissimum L. (Jim Hill or tumble mustard) and Capsella bursa-pastoris (L.) Medic. (shepherd's purse) by the green peach aphid (GPA), Myzus persicae (Sulzer) under laboratory and greenhouse conditions. Virus antigen in both plant species was found to be unequally distributed between root and foliage based upon enzyme-linked immunosorbent assay (ELISA). C. bursa-pastoris is susceptible to PLRV, but unlike S. altissimum, it is a relatively poor source of inoculum for the GPA. Two C. bursa-pastoris biotypes differ significantly in PLRV antigen titer in both leaf and root tissue as determined by ELISA. The PLRV isolate tested induces primary leafroll symptoms in potato, Solanum tuberosum L. var. Russett Burbank, and net necrosis in a variable proportion of the resulting tubers.