

Section VI.  
Vectors of Plant Pathogens

**Management of PVY and Vectors in Idaho Potatoes**

Juan Manuel Alvarez, Aberdeen R&E Center  
1693 S 2700 W; University of Idaho, Aberdeen, ID 83210.  
[jalvarez@uidaho.edu](mailto:jalvarez@uidaho.edu)

*Potato Virus Y* (PVY including strains O and all new N variants) is the most economically important virus affecting potato production in the US and causes severe economic losses to seed and commercial potato growers in North America. Increasing levels of PVY infection have been observed in the Pacific Northwest (PNW) potato fields in spite of the use of high-grade, virus-free planting material. PVY can be transmitted in a non-persistent manner by at least 50 different species of aphids. Since acquisition and inoculation occur in minutes following epidermal probes by the aphid, vectors do not need to colonize potatoes to transmit PVY. Some growers in the PNW claim that they can manage PVY by controlling aphids with insecticides. Because of the virus-transmission mode, it is difficult to believe that insecticide applications for aphid control would effectively decrease the disease transmission. Therefore, we conducted an insecticide efficacy trial at the University of Idaho Kimberly R&E Center to test whether the disease incidence could be reduced with insecticide applications. Eleven insecticide treatments were evaluated. Potato leafroll virus infection was also evaluated. The lowest cumulative number of aphids during the 12 weeks of sampling was present in the SPT/Provado treatment. This treatment was especially efficient at eliminating green peach aphids during the week of the highest peak of aphids (July 17). Four other treatments had low cumulative numbers of green peach aphids: Monitor, SPT/Provado/Baythroid, Fulfill, and Platinum. None of the insecticides seem to prevent transmission of PVY. Combination of SPT with Provado resulted in less PLRV-infection than in combination with Bathyroid. SPT, Fulfill, Vydate, and Platinum kept the PLRV infection at 0% in the last sampling. The highest yield was produced in the Monitor treatment and the lowest in the untreated control. Also, winter tests on harvested tubers will be conducted early in 2008.