

Section VII
Vector of Plant Pathogens

DEVELOPMENT OF NET NECROSIS IN 'RUSSET BURBANK' TUBERS
IN RELATION TO TIME OF PLANT INOCULATION WITH POTATO LEAFROLL
VIRUS AND STORAGE PERIOD OF TUBERS

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A study was conducted to determine the effect of time of inoculation of potato plants with potato leafroll virus and storage duration of harvested tubers on incidence of tuber net necrosis. The field phase consisted of randomized plots of 'Russet Burbank' potatoes that were infested with viruliferous aphids at 0, 50, 72, 85, 106, 127 and 148 days postplant and replicated four times. All plots were sprayed with Monitor 2-4 days after each inoculation date. Harvested tubers from each plot were sized into 2-4, 4-8, 8-12 and 12+ oz., and each size was evenly divided into four subsamples for evaluation after four storage durations. Tubers from one subsample was immediately evaluated for net necrosis by visual symptoms, and verified for infection by ELISA. The three remaining subsamples were placed in storage and one subsample was removed at monthly intervals for similar evaluations.

Tubers from plants inoculated 50 days postplant had significantly lower percentage of net necrosis than those from other inoculation dates. Net necrosis increased significantly with storage duration. However, significant inoculation date x storage duration interaction existed which showed that net necrosis in tubers from plants inoculated 50 days postplant did not increase with time in storage, while net necrosis in tubers from other inoculation dates increased with time in storage. Inoculation date x tuber size and storage duration x tuber size interactions were not significant. However, the mean percentage of net necrosis of all treatments decreased with increase tuber size.