PVY incidence and aphid populations in the San Luis Valley

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We are in the 2nd year of our study in the SLV, which aims to understand the effects of crop diversity on PVY spread and aphid communities. This project involves sampling potato fields and testing for PVY using TAS-ELISA biweekly, and trapping and identifying aphids weekly. For PVY sampling, we take tissue from 20 plants per field and flag them so that we can test the same plants throughout the season to detect any PVY spread. We are collaborating with Agro Engineering for aphid trapping and identification. We are using a combination of trapping methods to monitor aphid populations - 30 yellow pan traps at 10 locations and four suction traps at four of these locations. We will publish our findings in the Agro Engineering newsletter, but if you would like additional information do not hesitate to contact us.

PVY Incidence

Nine potato fields were sampled on June 23rd/24th. A total of 7 out of 9 fields tested positive for PVY, and 4 of these fields showed an increase in PVY incidence. Incidence in all fields ranged from 0% to 40%, with the average incidence per field at 11.7%. Our most recent sampling date was Wednesday (July 7th), and we are in the process of testing those samples.

Aphid Vector Populations

A total of 197 aphids representing 12 different species were found in pan and suction traps from June 9th – 23rd. The Corn Root Aphid (Protaphis middletonii) was, again, the most abundant species. The corn root aphid commonly hosts on the roots and stems of various weeds. It is not known whether or not the Corn Root aphid is a vector of PVY, but it is a known vector of another plant virus in melons. For more information on corn root aphid please see: https://ipmworld.umn.edu/seed-root-stem

Because vector populations have been relatively low in the past few weeks, it is reasonable to believe that the high PVY incidence observed so far this season is due to the planting of seed that was infected by aphid spread from the 2020 season. There were extremely high numbers of pea
aphids (*Acyrthosiphon pisum*) in 2020, and this species is known to vector PVY. Vector populations seem to be low currently, but will almost certainly increase as the season progresses.

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