

Aphid monitoring in east Idaho helps seed potato growers

AT A GLANCE

Since 2019, the southern Idaho aphid monitoring network has informed seed potato growers of timing and number of winged aphid peaks in regions where seed potatoes are grown.

The Situation

Numerous species of aphids transmit potato virus y (PVY), a rapidly acquired and transmitted virus that is particularly challenging for the seed potato grower. Just 1% incidence in a seed crop renders it ineligible for re-certification, meaning it cannot be increased again as a seed crop the following year. Targeting the aphid vectors of this virus with insecticides alone leads to inconsistent results and sometimes may increase the incidence of the virus in daughter tubers.

Understanding when winged aphids are moving into potato fields can help growers determine, for example, optimal planting areas with low aphid pressure, when to begin and end weekly applications of mineral oil tank mixed fortnightly with aphid-behavior modifying pesticides, when to plant border crops to serve as “cleaning stations” for virus-contaminated aphid mouthparts, and when to terminate the seed crop.

A previous monitoring effort was coordinated by the Idaho Crop Improvement Association (ICIA), but ICIA and growers recognized that information garnered was limited by the type of trap (tall, fixed, electric-powered suction traps that were typically away from seed potato fields) that was better suited for monitoring aphid



A 2-gallon yellow bucket filled with water placed near a seed potato field to capture winged aphids.

movement on a larger, regional scale. Additionally, ICIA lacked sufficient personnel to consistently provide weekly reports.

Our Response

In 2019, we proposed the development of a refined network to be overseen by the University of Idaho that expanded on ICIA’s valuable efforts. The new network incorporates the use of field-based 2-gallon yellow bucket water traps that support field-based monitoring. In addition to U of I and ICIA personnel, grower and industry cooperators are also recruited to help deploy and service traps. An award-winning training video on how to deploy and service traps facilitates grower and industry cooperation.

Every week from early June through mid-September, aphids are collected from traps located at over 20 sites around south-central and southeast Idaho and brought to the laboratory in Idaho Falls where they are counted and then preserved for species identification at a later date. Interested stakeholders receive a weekly report with the number of winged aphids found at each site.

Program Outcomes

One hundred and fifteen subscribers receive weekly emailed reports of winged aphid captures to help them determine when to initiate aphid management strategies to minimize transmission of PVY.

Fifteen subscribers responded to a recent survey requesting information on how the monitoring network was used. All respondents indicated knowledge of the network. Twelve respondents identified two or more uses of the network, and only one did not use the network data for any reason.

- 14 used the network to determine which areas have high aphid pressure, to optimize field selection, link with PVY risk or both.
- 9 relied on the network to identify when to apply management measures.
- Suggestions for improvement included adding more sites, monitoring earlier, incorporating heat maps and educating clientele on how the information can be used.

The training video, housed on the College of Agricultural and Life Sciences [YouTube channel](#), has received over 300 views since 2021.

The Future

The southern Idaho aphid monitoring network will continue to provide weekly updates of winged aphid captures, insights into timings of peak aphid flights and ideal crop termination times that avoid late-season aphid peaks, and information on optimal seed isolation locations based on lower aphid numbers. Additionally, the aphid monitoring team will explore the possibility of including more locations and incorporating heat maps in weekly reports, as funding allows.

Cooperators and Co-Sponsors

The Idaho Potato Commission has provided significant support for this program every year since 2019. A small portion of this work is also supported by the Extension Implementation Program [award no. 2024-70006-43754] from the USDA National Institute of Food and Agriculture since 2021. The Idaho Crop Improvement Association houses the most current report on their [website](#). The University of Idaho has developed an [interactive website](#), Idaho Pest Monitoring, that includes both current and archived information on winged aphid captures from the southern Idaho aphid monitoring network along with other monitoring efforts.

FOR MORE INFORMATION

Kasia Duellman, Extension Seed Potato Specialist • University of Idaho Entomology, Plant Pathology and Nematology • 208-757-5476 • kduellman@uidaho.edu

Justin Hatch, Extension Educator • University of Idaho Extension, Caribou County • 208-547-3205 • jlhatch@uidaho.edu

David Callister, Extension Educator • University of Idaho Extension, Butte County • 208-527-8587 • dcallister@uidaho.edu

Jason Thomas, Extension Educator • University of Idaho Extension, Minidoka County • 208-436-7184 • jasont@uidaho.edu

86-25-kduellman-aphid-monitoring • 12/25