Potato Progress

Research & Extension for the Potato Industry of Idaho, Oregon, & Washington

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The 98th Annual Meeting of the
Potato Association of America

Date: Tuesday July 29, 2014 (or attend the whole conference, July 27-31)
Location: The Davenport Hotel, Spokane, Washington

POTATO GROWERS, PRODUCERS, and INDUSTRY: you are invited to attend the 98th annual meeting of The Potato Association of America at The Davenport Hotel, Spokane, WA, July 27-31, 2014. This is a rare opportunity for the Northwest Potato Industry -- Washington only hosts this event once every 10-15 years. The annual PAA meeting is an event where scientists from around the world address many current potato research and production topics. We have scheduled a special one-day registration, referred to as 'INDUSTRY DAY' on Tuesday, July 29 for growers, producers and all support industry personnel. Growers and industry personnel are also welcome to register for the whole conference. See the website for more information regarding the annual meeting:

http://www.cm.wsu.edu/ehome/paa2014/133932/

Industry day talks will be focused on applied research topics. There will be presentations about several important potato diseases and their control, fertilizer usage and production management, potato storage and temperature stress, as well as many other applied topics. Check the website for an updated program as the conference nears. This is a unique opportunity to talk with many of the world's premier potato scientists and hear about the newest research discoveries.

Early-bird registration for this one-day event is $125 for growers and industry; the registration includes breakfast, lunch, an evening BBQ, snack breaks, and the entire speakers' sessions during the day. Price increases to $155 after May 2. Growers and industry personnel who wish to register for the whole conference must pay the whole conference registration fees (early-bird = $465 for PAA members or $565 for non-members, see description on web for more information). Be sure to book your hotel room early as The Davenport fills quickly in the summer. This is a great chance to increase your knowledge of the crop we all enjoy…POTATOES! See you there.

2014 WA Commercial Potato Seed Lot Pick up &Trial Information

Info also available each year at: **www.potatoes.wsu.edu**

Commercial potato seed samples are requested for the 2014 Washington Seed Lot Trial. **Two hundred whole (single drop) seed is an acceptable sample size, or 50 lbs of 4 oz single drop seed.**

Requested: 50 lbs of 2-4 oz whole seed, no seed treatments We want a representative sample - if applicable, include a representative amount of ROTTEN TUBERS!

(Seed over 6 oz is not acceptable)

A representative sample is needed. Sampling the first (or last) 300 seed from the truck is not likely to provide a representative sample of the lot. Sample tags may be obtained by visiting the Potato Commission in Moses Lake or calling at 509-765-8845.

Your assistance with collection and drop off of seed samples is needed. Seed samples may be taken to the WSU Othello Research Unit (509-488-3191); located on Booker Road ¼ mile south from State Highway 26 and about five miles east of Othello. For sample pick up and any questions regarding the seed lot trials please call:

South Basin: Tim Waters (509-545-3511), Mark Pavek (509-335-6861), or Zach Holden (509-335-3452).

North Basin: Carrie Huffman Wohleb (509-754-2011), Mark Pavek (509-335-6861), or Zach Holden (509-335-3452).

In the North Basin, one seed "drop-off" has been established. It is located at Qualls Ag Labs (Mick Qualls, 509-787-4210 ext 16) on the corner of Dodson Road and Road 4; come to front office between 8 am and 5 pm. Please call the numbers below to arrange additional pick up sites. Samples will be picked up at 2:00 pm the day before each planting date (below) to be included. Growers planting in early March should drop their samples off at the Othello Research Center or store the samples and call the numbers below for pick up. For all alternative pick up locations or questions please call Mark Pavek at 509-335-6861 or Zach Holden at 509-335-3452.

PICK UP DATES ARE ONE DAY PRIOR TO THE PLANTING DATES BELOW

The remaining seed lot planting dates for 2014 are:

2nd	April 8
3rd	April 22
4th (Late)	May 6

2014 Potato Field Day - Thursday June 26

This year's virus reading of the seed lots will take place on June 10 and 24.

Management of Beet Leafhopper and Purple Top (BLTVA) in Potatoes

Alan Schreiber, Agriculture Development Group, Inc.
Andy Jensen, Northwest Potato Research Consortium

This is the 2nd excerpt from the "Integrated Pest Management Guidelines for Insects and Mites in Idaho, Oregon & Washington Potatoes" which was introduced in the last issue of *Potato Progress*.

A serious epidemic of a "potato yellows" disease, also called purple top, occurred in potato fields throughout the Columbia Basin in 2002. The beet leafhopper-transmitted virescence agent (BLTVA), a bacteria-like organism called phytoplasma, has been shown to be the cause of this disease. The only known vector for this disease is the beet leafhopper (BLH).

BLTVA can cause a wide range of symptoms in potatoes, including leaf curling and purpling, aerial tubers, chlorosis, and early senescence (Figure 1). Most BLTVA infection occurs early in the season, during May and June, although damaging infections may occur in July or even August. Potato is not a preferred host for BLH and it will not spend much time on the crop (however it does spend enough time to transmit BLTVA.) Beet leafhoppers live and reproduce mostly in weeds on non-irrigated ground. Favorite food plants include wild mustards, kochia, and Russian thistle. BLTVA is transmitted to potatoes every year but is extremely severe in years when beet leafhopper numbers are highest.

Figure 1. Two adjacent plants with purple top symptoms.

Monitoring with Yellow Sticky Traps

Because potatoes are not a preferred host of the BLH, in-field sampling is difficult. We recommend monitoring for leafhoppers using yellow sticky cards around field margins. At least two traps should be deployed per field. This is because BLH populations can be very spotty. More traps make it more likely that an infestation will be detected. For a complete guide on monitoring beet leafhoppers with yellow sticky traps, see:

http://nwpotatoresearch.com/PR/Insect-Trapping-Guides.cfm

How to Interpret BLH Trap Catch Numbers

Unfortunately, nobody knows how many BLH on sticky traps next to a potato field are enough to warrant treatment of that field. What we do know is that exposure to large populations of BLH during the first 8 weeks or so of plant growth is a bad thing. So all we can do today is offer guidance on what a "large population" is, as detected with yellow sticky cards. We have been conducting region-wide trapping of BLH for several years now, and we can turn to our data for some guidance. Our highest number of BLH caught on a single trap in a week was 471. A more typical weekly catch during a peak of BLH activity is 100. A common scenario for a well-placed trap is to see very few (less than 10 per week) BLH until sometime in mid- or late May. A peak will quickly occur, rising from very low counts to 40 or 50 per week and then to about 100 per week, and then the third week will see very few BLH caught. It is this rapidly peaking flight that is important to detect.

Management of BLTVA in Potatoes

Cultural control.

There is still little research-based knowledge on cultural control techniques for purple top caused by BLTVA. We do know some things about BLH, though, that lead to a few suggestions: favored hosts of BLH during later spring and summer are young kochia plants and Russian thistle. Preventing or eliminating large tracts of these weeds near potato fields will reduce BLH numbers in the area.

Research since 2002 has found that a significant percentage of the BLH in the Columbia Basin are infected with BLTVA (close to 37%). This means that risk from BLTVA infection increases in proportion to the number of BLH.

Insecticidal control.

For the past several years, BLH control programs consisted of foliar applied insecticides. Application intervals should be no longer than 14 days if BLH are active in your area. Intervals less than 7 days are probably not necessary. Early in the season plants can grow very rapidly sometimes doubling in size every 7 days. If BLH flights are occurring during a period of rapid growth, applications should occur at the shorter intervals, particularly for contact insecticides such as pyrethroids.

Consider your overall insect program. Before selecting an insecticide for controlling leafhoppers, think about the impact your selection will have on the rest of your program. Some insecticides have season limits, and use of a product for leafhoppers early in the season may restrict usage later in the season. Most products have a limit on the number of applications that can be made in a season. Often a product can be applied 2 to 4 times. Growers should take care not to use all of the applications for a product too early in a season thereby precluding its use later in the season.

Do not apply Assail, Actara, Endigo, Brigadier, Belay, Admire Pro, or Leverage for leafhoppers if you have already applied Admire Pro, Gaucho, Belay, Platinum or Cruiser at planting due to resistance management concerns. Pyrethroid containing insecticides such as Asana, Baythroid, Ambush and

Pounce, or Leverage, Endigo, Hero, Brigadier, and Voliam Xpress, which contain pyrethroids, are tempting choices for control of leafhoppers due to good efficacy against leafhoppers, low price, and broad spectrum. However, broad spectrum products such as pyrethroids also remove beneficial insects that keep pests such as aphids and mites under control. One to three applications of a pyrethroid can result in aphid and mite outbreaks. Pyrethroid-containing products have a role in potato insect management programs, but careful consideration should be given to their use for leafhopper control.

Residual Control. BLTVA can be transmitted by a vector that can be difficult to detect, making management of the insect and disease challenging. The greatest likelihood of success in preventing transmission of BLTVA is through the use of longer residual insecticides applied at the beginning of leafhopper flights and maintaining a residue of insecticides on potato foliage that is sufficient to kill leafhoppers. In general, an application should have a period of residual activity of 10 to 14 days, otherwise the number and expense of applications required to maintain control would become prohibitive. Depending on the duration of leafhopper flights and timing of applications, two applications providing 20 to 28 days of control may provide a sufficient interval of control. If plants are actively growing during this time, a contact insecticide, such as pyrethroids, Imidan and Sevin, will not provide control for foliage produced after application. For actively growing plants reduce the intervals of application for a contact insecticide. Because leafhoppers in other cropping systems are considered easy to control, it is tempting to use below labeled rates of insecticides; a not uncommon practice in the Midwest for non-disease transmitting leafhoppers. Reducing the rate of any insecticide will reduce the period of residual activity. Do not use below labeled rates of insecticides for control of leafhoppers potentially transmitting BLTVA.

Efficacy. Leafhoppers are considered to be relatively easy to control. Many insecticides will kill leafhoppers, but other considerations reduce the utility of several of them.

Method of Application. In many situations growers choose chemigation to avoid the cost of application; however in this scenario use of chemigation with non-systemic products may result in substantially reduced insecticide levels on the foliage. Due to our lack of knowledge on effect of method of application on efficacy, do not apply insecticides for BLH in potatoes via chemigation unless you are confident the application will result in adequate deposition of insecticide residues on the foliage. Obtaining adequate coverage, particularly with contact insecticides, is critical.

Various specific issues related to insecticides and BLH management are discussed in detail in the complete document, "Integrated Pest Management Guidelines for Insects and Mites in Idaho, Oregon & Washington Potatoes," found online at:

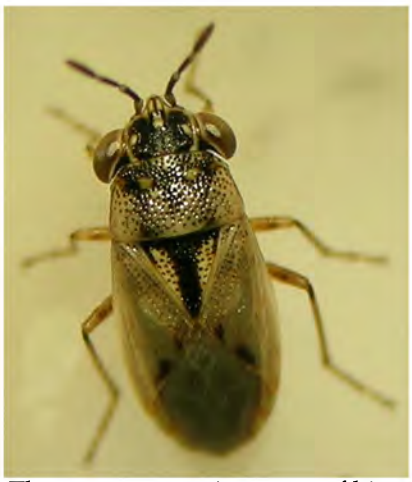
http://www.nwpotatoresearch.com/IPM-Home.cfm

and

http://www.schreiberagricultureresearch.com/

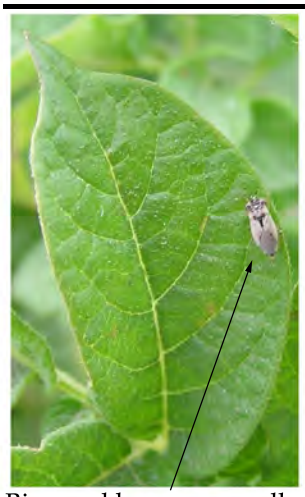
Predators: Big-Eyed Bugs

See also: http://www.nwpotatoresearch.com/

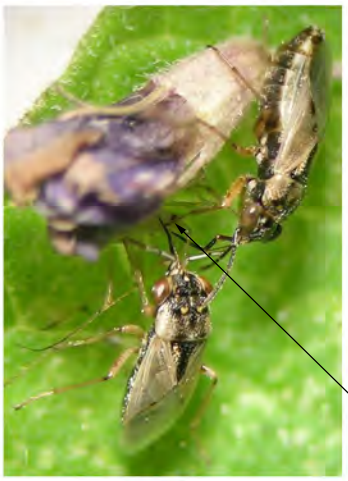


There are two major types of big-eyed bugs in potatoes. The lighter type on the left is far more common than the black one.

Young big-eyed bugs look a lot like adults, but don't have wings.



Big-eyed bugs are small, a little bigger than aphids.



These big-eyed bugs shared an aphid, sucking out the fluids.

Big-eyed bugs sometimes feed on plants when prey is scarce. This allows them to stay in a field until more prey is present.

Big-eyed bug biology

1. Big-eyed bugs are present throughout the Northwest, and are common in or near most potato fields.
2. Adult big-eyed bugs are present in early spring and colonize potato fields early.
3. They are sensitive to many insecticides -- care must be taken to preserve them.
4. Big-eyed bugs are generalist predators, feeding on almost any insect small enough for them to catch, but they are a major predator of aphids in potatoes.

Idaho Potato Commission (Phone: 208-334-2350)