INSECT MONITORING REPORTS
Report for June 7, 2013

BEET LEAFHOPPERS (BLH): **Beet leafhoppers were found at most of our trapping sites across the Columbia Basin this week. The traps in the northwest part of the Columbia Basin (Mattawa, Royal City, George) had the highest BLH counts. Go to the pest data mapping section below to see all of the BLH trap counts for this week. These counts are much larger than we were seeing at this time in 2012 and 2011.**

Beet leafhoppers are important pests because they transmit BLTVA, a phytoplasma that causes purple top disease in potatoes. In the Columbia Basin, the first spring generation of BLH usually migrates towards potato fields in late May and early June, with a peak flight in late June. Yellow sticky traps placed near potato fields are one way to monitor BLH. Information about setting up traps and identifying BLH can be found in the article, "*Beet Leafhopper Monitoring with Yellow Sticky Cards*". Treatment thresholds based on BLH numbers on traps have not been established, but we know that the risk of infection increases as BLH populations become large. If the numbers on traps build up to 40 or more BLH per week, then it is probably time to be concerned. A typical weekly catch during peak BLH activity is 100. Eliminating weed hosts (wild mustards, Russian thistle, kochia) in areas surrounding potato fields is an important cultural management approach for BLH. Potato growers may also select cultivars that are less susceptible to purple top (Ranger, Umatilla, and Norkotah are considered highly susceptible; Russet Burbank is susceptible; and Alturas and Shepody are moderately susceptible). A number of insecticides are labeled for use on potatoes to control leafhoppers. Systemic at-planting insecticides, especially those with longer residual activity applied at the maximum allowed rate, have been shown to provide some early season control of BLH. Results may vary depending on the product used, application rate, soil and environmental conditions, and insect pressure. Foliar insecticides may also be used to control BLH. These are usually applied in May, June, and sometimes July. Insecticides with long residual activity (10-14 days) are preferred. If you apply a non-systemic insecticide, it may be necessary to shorten the application interval during periods of rapid plant growth to ensure adequate plant coverage. Remember to always read and follow instructions on the pesticide label. For more information about managing BLH, visit *IPM Guidelines for Insects and Mites in ID, OR, and WA Potatoes* and the *2013 PNW Insect Management Handbook*.

POTATO PSYLLIDS: **We set up yellow sticky traps in more fields this week to monitor potato psyllids. If you want to set up your own traps, read *Psyllid Monitoring with Yellow Sticky Cards.* This week we found a potato psyllid on a yellow sticky trap in a potato field north of Basin City; this is the same field where we found a potato psyllid two weeks ago. Another potato psyllid was found on a yellow sticky card in a field in the Bruce area. Both psyllids have been submitted for testing to see if they carry the bacterium (Lso) that causes zebra chip, but the psyllid that was tested a couple of weeks ago was not a carrier. We suspect that potato psyllids are coming from bittersweet nightshade plants in wetland areas near these fields. Potato psyllids in the PNW are known to overwinter on this perennial nightshade species, which is commonly found near waterways. We often find it in the Columbia Basin growing under and on Russian olive trees.**

Potato psyllids are important pests mostly because they can transmit a bacterium (*Candidatus* Liberibacter *solanacearum*) to potatoes that causes zebra chip disease (ZC). This disease reduces both yield and tuber quality and has lead to serious economic losses in some regions. ZC was first detected in potato fields in the Columbia Basin in 2011, and occurred again in 2012. Yellow sticky cards are recommended for detecting psyllid migration into an area. The cards should be placed inside the field, near the field edge, and just above the canopy level. It is best to have five or more yellow sticky cards around the field. Another method for sampling adult psyllids is to use an inverted leaf blower with a mesh net secured to the end of the cylinder (see photo on the sidebar). This method is better for detecting low population densities than the sticky cards. Operate the machine (in vacuum mode) above the potato plants for at least 5 minutes, 5-10 feet from the edge of the field, and then carefully remove the net from the end of the cylinder. It helps to transfer the insects from the net to a plastic bag that you can seal, and then look for the tiny winged adults. If you place the bag in the freezer for a while, you can slow the buzzing insects down which will make it easier to scan the bag. Other life stages of the psyllid may be found by collecting several leaves (mid-plant) from the outer rows of the field, and then scanning the underside (with a hand-lens) for the tiny nymphs and eggs. It is also recommended to scout for psyllids in cull piles and volunteer potatoes. For more information about psyllids, including insect identification, monitoring, and control recommendations, read *Biology and Management of Potato Psyllid in Pacific Northwest Potatoes* and *Potato Psyllid Vector of Zebra Chip Disease in the Pacific Northwest*.

APHIDS: **Potato growers should be monitoring fields for aphids. This week we found a small number of winged aphids moving into potato fields in various parts of the Basin, and a few wingless aphids in two potato fields in Franklin County. If you applied a systemic insecticide at planting, such as imidacloprid, thiamethoxam, or clothianidin, you can usually expect 80-100 days of residual control.**

Aphids are important pests because they transmit several important potato viruses, especially potato leafroll virus (PLRV) and potato virus Y (PVY). Green peach aphids are the most important vector of PLRV, which has caused substantial yield and tuber quality losses in the Columbia Basin. PLRV causes net necrosis in some cultivars, an unacceptable tuber defect in processing potatoes. PVY can also result in significant yield losses, and some strains cause tuber defects. Potato growers should monitor fields for aphids at least once a week, because early recognition and control of aphids is the best tactic in limiting spread of potato viruses. Current recommendations are to treat long-season storage potatoes as soon as wingless aphids are detected. Low tolerances have been established because even a low incidence of seed borne PVY and PLRV can spread rapidly if aphids go unchecked.

POTATO TUBERWORM (PTW): **Moths were found at two locations this week. One trap near the WA/OR border had 6 PTW moths, and one trap just north of Pasco had 5 PTW moths. It is too early in the season to warrant control measures.**

Potato tuberworm (PTW) was first recognized as an important pest of potatoes in the southern Columbia Basin in 2003. PTW larvae feed on tubers causing damage that renders them unmarketable. Potato growers with fields south of Connell, WA are recommended to pay close attention to regional trapping data, and should deploy pheromone traps. Infestations of PTW

are highly localized, and it is risky to conclude too much from traps that may be several miles away. Information about setting up traps and identifying PTW moths can be found in the article, "*Tuberworm Monitoring with Pheromone Traps*". Trap counts from mid-season to harvest are particularly important to watch. Pre-harvest control measures may be warranted in fields where PTW moths in pheromone traps are found to be increasing every week, especially in August-October.

BENEFICIAL INSECTS: **Big-eyed bugs were found in most of the potato fields we monitored this week. We also found a few damsel bugs, minute pirate bugs, and green lacewings in some fields. These are all beneficial insects that are known to feed on insect pests including aphids and the eggs and larvae of Colorado potato beetle.**