

INSECT MONITORING REPORTS

Report for Sept. 15-21, 2011

POTATO TUBERWORM: Potato tuberworm (PTW) moths were collected in five of our network traps this week; two traps near Pasco with 5-6 moths/trap, one near Burbank, WA with 5 moths/trap, one south of Kennewick with 1 moth/trap, and one close to the Oregon border with 27 moths/trap. Low numbers of PTW moths are also being trapped along the Columbia River in Oregon. No moths have been collected lately in the north Columbia Basin. These trap catches are not very large for this time in the growing season. We were catching more moths this time last year. A graph showing the average PTW moth counts in the Columbia Basin this season has been added to this webpage (see below).

Management Recommendations: If you grow potatoes in the Columbia Basin south of Connell, it would be a good idea to put out your own PTW pheromone traps to monitor the situation. PTW infestations are highly localized, and it is risky to conclude too much from traps that are miles away from your own fields. Information about setting up traps and identifying the moths can be found in the article, "*Tuberworm Monitoring with Pheromone Traps*". Unfortunately, we do not have enough information to translate counts from trapping into a risk assessment. It is clear, however, that more moths in traps equal more risk. The traps should be checked weekly. If the moth counts increase from week to week, then control measures may be warranted before harvest. Cultural methods reported to reduce PTW damage include 1) eliminating cull piles and volunteers to reduce overwintering stages of PTW; 2) maintaining soil moisture (apply 0.1" per day) after vine kill to prevent soil cracking; 3) minimizing the time between desiccation and harvest; and 4) maintaining more than 2" of soil over tubers during the season, and covering hills with 1-2" of soil after vine kill. Insecticide spray programs beginning 4-8 weeks before harvest have been successful in reducing tuberworm in potato tubers. For a list of products recommended for PTW control go to *IPM Guidelines for Insects and Mites in ID, OR, and WA Potatoes*.

APHIDS: Large populations of wingless green peach aphids can be found in many fields that are still green and growing in the Basin. Aphids were found in 9 of the 18 fields (50%) we sampled this week; mostly wingless forms. Only a few winged aphids were collected this week. Of course, the aphid-virus threat for potatoes in the Columbia Basin is mostly over. The exception is those few fields that are still green, actively growing, bulking, and scheduled for a late harvest.

Management Recommendations: Early recognition and control of aphids is the best tactic in limiting the spread of potato leafroll virus (PLRV). PLRV infections are less common compared to a decade ago, but PLRV continues to be seen occasionally in the Basin. This virus causes a tuber symptom called net necrosis in some cultivars that is unacceptable in processing potatoes. To minimize the spread of virus, university-based recommendations are to treat late-season storage potatoes as soon as non-winged aphids are detected. The low tolerance for net necrosis by processors and the high vectoring capacity of aphids, explains the very low treatment threshold for aphids in potato fields destined for storage and processing. Higher action thresholds may be appropriate for cultivars that do not develop net necrosis when infected with PLRV, and for potatoes that will not be stored. Many foliar insecticides are labeled

for the suppression of aphids in potatoes; for a list of products recommended for late-season potatoes go to ***IPM Guidelines for Insects and Mites in ID, OR, and WA Potatoes***.

POTATO PSYLLIDS and ZEBRA CHIP: Potato psyllids are small insects that can be problematic in potatoes, mostly because they can transmit a bacterium (*Candidatus Liberibacter*) which causes a disease known as zebra chip. Zebra chip (ZC) is a new disease for the Columbia Basin of WA and OR; it has previously been reported in TX, CA, CO, KS, NE, NM, and WY (mostly on chipping potatoes). This disease reduces both yield and tuber quality and has led to serious economic losses in some regions. Potato plants affected by ZC at an early stage may show leaf curling, purpling in the upper plant, bushy-appearance, and aerial tubers. Early on they may look like plants infected with potato leafroll virus, and later they may look like plants with purple top disease or psyllid yellows. More importantly, ZC can cause a necrotic symptom in the tuber. The necrosis has a characteristic “net-like” appearance when cut that first appears on the stem end of the tuber, but can progress through the tuber. If you have plants with symptomatic foliage, you should dig tubers and check for necrotic symptoms. Even a low incidence of bacteria-carrying psyllids can cause widespread infection. Nymph and adult stages of the psyllid pick up the bacterium when feeding on an infected plant. Once a psyllid picks up the bacterium, it is always a carrier. It can transmit the bacterium to potato plants in as little as 6 hours of feeding. The potato psyllid apparently does not overwinter in the Columbia Basin, but migrates from the south and arrives in the lower Basin in early July (based on trap data). Adult potato psyllids resemble miniature (0.5”) cicadas and are often referred to as “jumping plant lice”. They are quick, frequent movers, and are difficult to catch. Psyllid nymphs are small, green, and have a flattened, scale-like appearance. They are slow-moving and can be found on the underside of the leaves. Unfortunately, potato psyllids are not easy to monitor with traps. They are not attracted to yellow, and there is no pheromone currently available to attract potato psyllids. For more information, read the recent report issued by Silvia Rondon and Phil Hamm with OSU Hermiston, “***Essential Information about Zebra Chip in the Columbia Basin: Infection, Late Season Control, and Storage***”. The report includes several photos of the potato psyllid (egg, nymph, and adult stages), and foliar and tuber symptoms of ZC.

BEET LEAFHOPPERS: Beet leafhoppers are important pests because they transmit BLTVA, a phytoplasma that causes purple top disease in potatoes. Most BLTVA infections occur early in the season, during May-July, so most chemical treatments for BLH are applied at-planting and/or in May, June, and sometimes in July. It can take a while for purple top symptoms to develop, but if your potatoes were infected with BLTVA you should be seeing the symptoms of purple top now. Symptoms may include leaf curling with purple coloration, aerial tubers, chlorosis, and early senescence. This disease does not cause a necrotic tuber symptom. Potato cultivars vary in susceptibility to purple top. Ranger, Umatilla, and Norkotah are considered highly susceptible; Russet Burbank is susceptible; and Alturas and Shepody are moderately susceptible.