INSECT MONITORING REPORTS
Report for June 8-14, 2011

BEET LEAFHOPPERS: Beet leafhopper (BLH) populations are beginning to increase. Watch for BLH populations to continue to build over the next several weeks. Click on the map below to view recent data for the region. Note that all of the traps for BLH functioned normally this week.

Pest Description and Management Recommendations: The BLH is the only known vector of BLTVA, a phytoplasma that causes purple top disease in potatoes. Infected plants show a range of symptoms, including leaf curling and purpling, aerial tubers, chlorosis, and early senescence. Purple top is managed by controlling BLH and thereby preventing the spread of BLTVA. There are a lot of leafhopper species in the Columbia Basin, but only the BLH spreads BLTVA. The BLH is wedge-shaped, ranges in color from pale green to gray or brown, and lacks prominent spots or markings on the head and body. It is one of the smallest leafhopper species found in the Basin (only 0.12 inches long). BLH prefer to live and reproduce on weeds including kochia, wild mustards, and Russian thistle. Potatoes are not a favorite host for BLH, but it does not take long for an infected BLH to transmit BLTVA to potato plants when it is on the move and searching for something good to feed on. In the Columbia Basin, the first spring generation of BLH usually begins to migrate in late May and early June, with a peak flight in late June. Populations from late June to early August are generally the largest, with 2 to 3 overlapping generations of BLH. A final generation usually matures in October, but by then we are not too concerned about BLH spreading BLTVA to potatoes. The area surrounding Mattawa, WA tends to be a hot spot for BLH with some of the largest populations. On the other hand, the areas east of Moses Lake, Warden, and Othello tend to maintain some of the smallest populations of BLH.

Now is an important time to monitor BLH populations, because younger potato plants are considered to be more susceptible to BLTVA infection than more mature plants. Yellow sticky traps placed near potato fields are one way to monitor BLH populations. We recommend that growers deploy at least two traps near each of their potato fields. Populations can be spotty, so the more traps near a field, the more likely an infestation will be detected. More information about setting up traps and identifying BLH can be found in the article, “Beet Leafhopper Monitoring with Yellow Sticky Cards”. It is also helpful for growers to follow regional trapping results. The long-distance movement of BLH is poorly understood, so growers should consider the possibility of BLH moving quickly from highly infested areas to less infested areas. 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 the weed hosts of BLH in areas surrounding potato fields is an important cultural management approach. 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 foliar insecticides are labeled for use on potatoes to control leafhoppers. 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.

The jury is still out on whether systemic insecticides applied at planting will control BLH and limit transmission of BLTVA. Some potato growers have observed poor results with insecticides applied at planting, and attribute this to an inadequate level of insecticide in the plant by the time of the season that BLH are active (especially June and later). Results may vary depending on the product used, application rate, soil and environmental conditions, and insect pressure. There is new research (Schreiber, 2008-2010) suggesting that systemic at-planting insecticides with longer residual activity applied at the maximum allowed rate may provide adequate early season control of BLH. 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 *2011 PNW Insect Management Handbook*.

POTATO TUBERWORM: There were no potato tuberworm moths found in survey traps this week.

APHIDS: A small number of aphids were found in 11 of 37 fields we surveyed across the Basin this week. The counts were very low in most of these fields, averaging only 0.2 aphids per plant. Most of the aphids were winged green peach aphids; only 2 of 37 fields had any wingless aphids colonizing plants. It is important to note that these aphids were found all over the Columbia Basin, i.e. in fields near Warden, Connell, Royal City, Mattawa, Basin City, Eltopia, Pasco, and Patterson. This means that potato growers across the Basin should be checking their fields regularly for aphids.

Management Recommendations: Early recognition and control of aphids is the best tactic in limiting the spread of potato leafroll virus (PLRV). 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. It is important to keep in mind, however, that aphids spread other viruses and can cause direct injury to plants when aphid densities are high. 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***. When selecting an insecticide it is important to know the use restrictions (PHI, season limits, etc.), follow guidelines for insecticide resistance management, and consider the impact on natural enemies.

BIG- EYED BUGS: Big-eyed bugs were found in 29 of 37 fields we surveyed across the Basin this week. These are beneficial insects known to eat pests including aphids and the eggs and larvae of Colorado potato beetle. These are good insects to have in your potato fields. Unfortunately, big-eyed bugs are very susceptible to broad-spectrum insecticides. Dr. Bill Snyder, WSU Entomologist, and his team have observed that big-eyed bugs are six times more abundant in fields sprayed with selective pesticides (like Fulfill and Success) compared to fields treated with broad-spectrum insecticides (like Monitor).