

INSECT MONITORING REPORTS

Report for May 4-10, 2011

BEET LEAFHOPPERS: Beet leafhoppers (BLH) were found at only one site in the trapping network for the Columbia Basin of Washington this week; one BLH in a trap north of Pasco. A few sites on the Oregon side of the Columbia River had some BLH this week, but the numbers were very low. Click on the map below to view recent data for the region.

Recommendations: The beet leafhopper 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. This disease can significantly reduce yields. 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 one of the smallest leafhoppers found in the Basin (only 1/8th inch). It is wedge-shaped, ranges in color from pale green to gray or brown, and lacks prominent spots or markings on the head and body. 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. BLH flights are usually earlier in Mattawa compared to other parts of the Basin. On the other hand, the areas east of Moses Lake, Warden, and Othello tend to get a later start and maintain some of the smallest populations of BLH.

Yellow sticky traps placed near potato fields are one way to monitor BLH populations. We recommend that growers deploy at least two yellow sticky 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 information. 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. Traps should be checked regularly (at least weekly). 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. Now is an important time to monitor BLH populations because studies have demonstrated that younger potato plants are more likely to become infected with BLTVA than mature plants. Researchers have also shown that 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.

Eliminating the weed hosts of BLH in areas surrounding potato fields is probably the most important cultural management approach for BLH. BLH can also be controlled with insecticides. A number of foliar insecticides are labeled for BLH. These are most often applied in May, June, and sometimes July in the Columbia Basin. Insecticides with long residual activity (10-14 days) are preferred. If you apply a non-systemic, contact 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 and spreading BLTVA (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. 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: Not yet, but coming soon.