



# Potato Progress

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

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## Updates on Potato Psyllid and Zebra Chip (ZC)

### Potato Psyllids Found in Columbia Basin Potatoes

More potato psyllids have been found in the potato crop this week in Washington and Oregon. No potato psyllids have been found in the Idaho potato crop yet this season. Adult psyllids also continue to be found in non-agricultural areas living on bittersweet nightshade. Samples of psyllids from both hosts are being tested for the Liberibacter that causes ZC, and none has yet tested positive from anywhere in the Northwest.

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## Remember: Field Days Next Week!

Below is the list of research field days taking place the last week of June this year. I hope many of you can attend one or more of them!

### University of Idaho, Kimberly

Snake River Pest Management Research Tour, June 28, 8:30 am – 1 pm.

### University of Idaho, Aberdeen

Snake River Pest Management Research Tour, June 27, 8:30 am – 1 pm.

### Oregon State University, Hermiston

Potato Field Day, June 27, 8 am – noon.

### Washington State University, Othello

Potato Field Day, June 28, 8:30 am – lunch time.

## Accumulated Heat Units for 2012: Back to Normal?

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Compared with the cold, wet spring in 2011, 2012 Columbia Basin heat units have been mostly typical and follow the 10 year average closely (Figure 1). Last year's emergence for potatoes planted around March 15 were delayed by as much as 14 days compared to the 10 year averages. This year, emergence was definitely more typical (data not shown).

In a typical year, ambient (above-ground) heat units  $>45^{\circ}\text{F}$  across the Columbia Basin begin to accumulate rapidly near the middle of April (Figure 1). This year the heat units started to accumulate rapidly during late April; well above the five year average and similar to the ten year average.

As one might expect, heat units declined slightly as the data collection sites moved north – Paterson to Moses Lake. Despite that, the patterns across sites remained similar. Soil moisture and temperatures are most commonly cited as the major factors that contribute to potato sprout growth and emergence rate. Additional factors include seed size and health, sprout health, sprout/eye location on the mother seed tuber, soil fertility, cultivar, mother-tuber physiological age, volume and mechanical resistance of soil, and seed tuber dormancy. Rapid sprout emergence can promote early-season disease resistance in potato shoots and stems and allow plants to capture solar radiation early in the season. It is important to note, however, that early emergence does not always equate to an increase in yield.

Accumulated heat units, also known as day-degrees and degree-days, are often used to demonstrate or predict sprout emergence. They are calculated by taking the average daily temperature from each day and subtracting the growing base temperature ( $45^{\circ}\text{F}$ ). The heat units for each day are then added over time to provide accumulated heat units (see figures below). Although potatoes can form sprouts near  $40^{\circ}\text{F}$ , growth is extremely slow. To calculate accumulated heat units, we used a base temperature of  $45^{\circ}\text{F}$  because it is generally more conducive for vegetative growth.

The amount of heat units required in the soil for sprouts to break the soil surface depends on all the factors above and changes for each situation. In general, the faster heat units are accumulated, the quicker plants will emerge. The figures below were calculated with above-ground (ambient temp) heat units because soil temps for all time periods were not available. Above-ground heat units are still relevant because soil temps gradually warm as the average daily air temperatures increase.

Our hopes are for a production year more typical than last, warm, but not too warm. Best wishes for a great crop year!

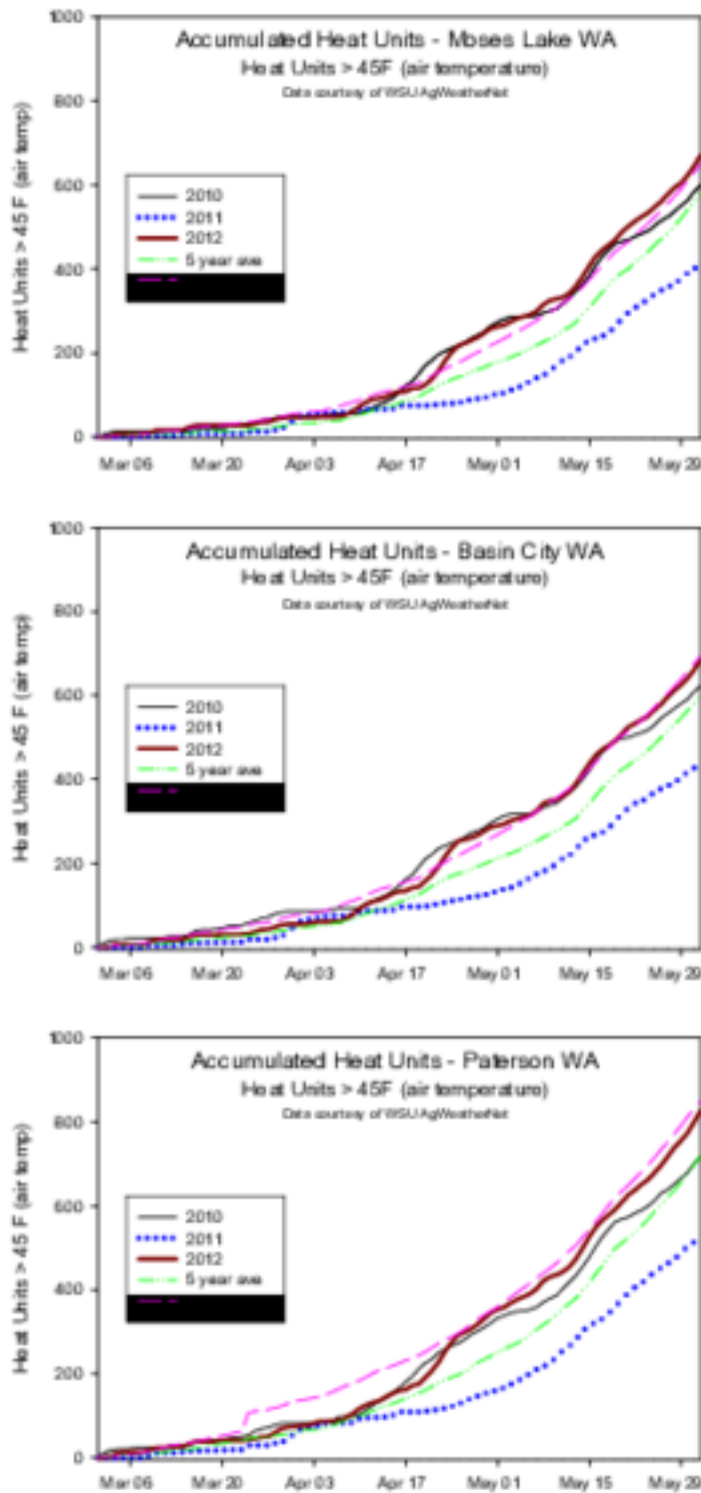


Figure 1. Accumulated ambient (above-ground) heat units >45° F for three WA locations.



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**HAREC Potato Field Day**

**June 27, 2012**

**8:00am – Noon**

8:00 – 8:30 Registration and welcome

8:30 – 8:50 From winter to summer: Should we expect record insect outbreaks? Silvia Rondon, Oregon State University

8:50 – 9:10 Potato psyllid update in the lower Columbia Basin. Alex Murphy and Silvia Rondon, Oregon State University

9:10 – 9:30 Seed Borne ZC ...what is going on in screen house plantings. Jordan Eggers, Oregon State University

9:30 – 9:50 What we have found from Zebra Chip field surveys. Phil Hamm, Oregon State University

10:10 – 10:30 Disease issues in Seed lots 2012. Jesika Holcomb, Oregon State University

10:30 – 10:50 Phosphorus use in potatoes. Don Horneck, Oregon State University

10:50 – 11:10 Integrated management of PVY. Barry Jacobsen, Montana State University

11:10 – 11:30 What monitoring water will tell you nitrogen. Gibb Evans and Gina Gray, IRZ

11:30 – 11:50 Update of Syngenta Product registrations. Chris Clemens, Syngenta Crop Protection

Noon Lunch provided courtesy of Syngenta Crop Protection