



# Potato Progress

Research and Extension for Washington's Potato Industry

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## Columbia Basin Accumulated Heat Units for 2007

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Perhaps it was just impatience, but it seemed like the potatoes took for ever to emerge this year. Potatoes typically emerge between 25 and 40 days after planting in the Basin. Of course, this is dependent on many factors. Soil moisture and temperature 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 into an increase in yield.

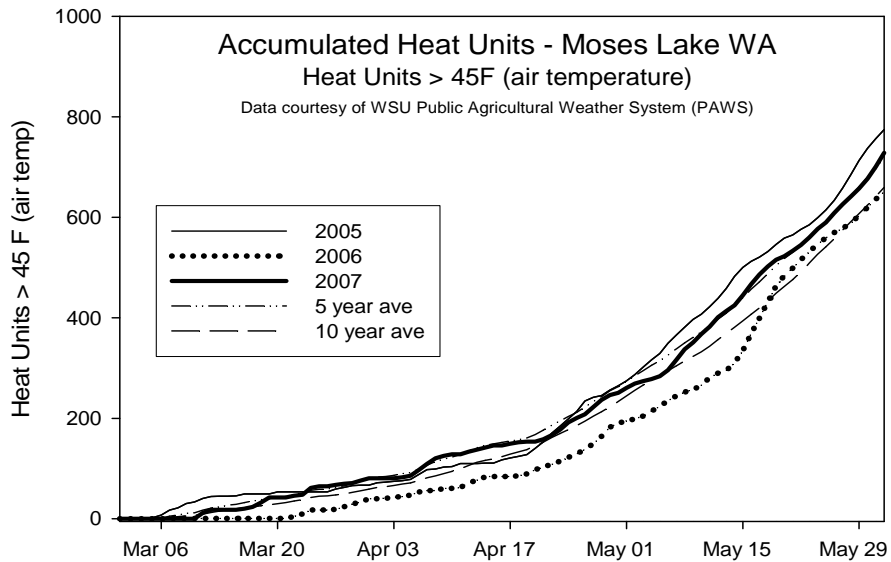
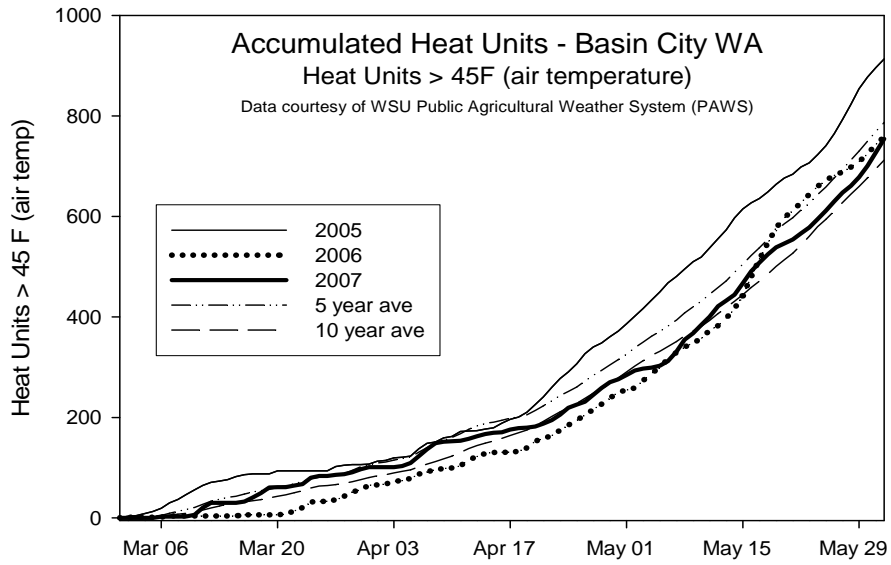
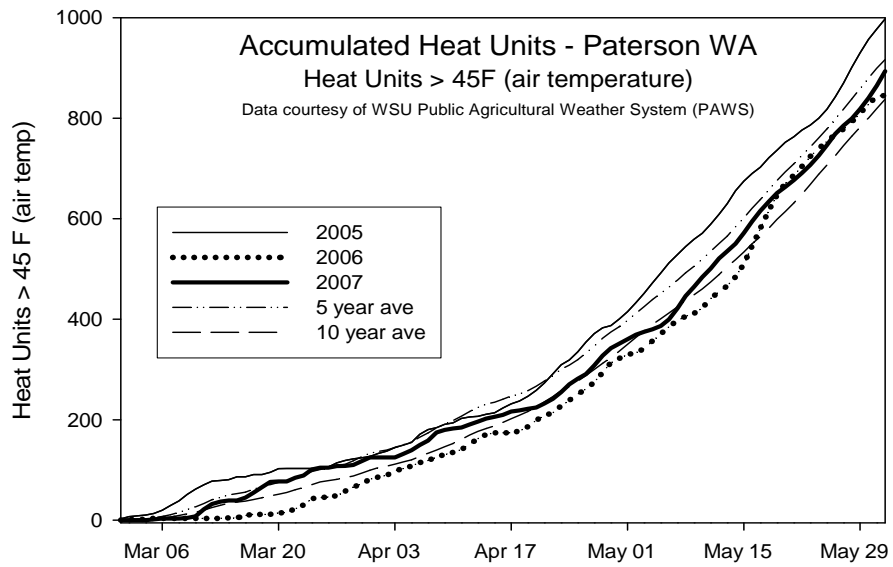
Accumulated heat units, also known as day-degrees and degree-days, are often used to demonstrate or predict sprout emergence. They are calculated by taking the average daily temperature from each day and subtracting the growing base temperature (45 F). The heat units for each day are then added over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

### What happened in 2007?

Based on the commercial seed lot samples we receive each year, the bulk of the planting in the Basin seems to happen between April 1 and April 20. In the lower half of the Columbia Basin, accumulated heat units fell below the 5 year average starting in the middle of April and didn't catch up by the end of May (see figures below). However, the heat units tracked closely to the 10 year average and were still higher than in 2006. In the northern half of the Columbia Basin, heat units tracked closer to the 5 year average and were typically above the 10 year average.

In short, this year's planting-to-emergence interval during the bulk of our planting was slightly below normal in the lower half of the Basin, and close or slightly above normal in the upper half of the Basin. One question to ponder: "Does the large difference between the 5 and 10 year average indicate GLOBAL WARMING?" I'm not going there. Best wishes for the remainder of your growing season!



# WSU Potato Field Day – June 29, 2007

Located at WSU Othello Research Unit

(6 miles East of Hwy. 26/17 Junction, On Booker Rd, ¼ Mile South of Hwy. 26)

8:30 - 9:00 am Coffee and rolls

9:00 - 10:20 am Visit Seed Lot Trial

## Concurrent Session I: Potato Cultural Practices Field Tour

- 10:30 am **PVMI – It is Not Another Potato Virus!**  
*Jeanne Debons* – Potato Variety Management Institute, Bend, OR
- 10:45 am **Emergence & Establishment Problems in Summit**  
*Rick Knowles, Lisa Knowles, and Nora Fuller* - WSU, Pullman
- 11:00 am **From Seed Production to French Fries – Management of Newly Released Cultivars**  
*Rick Knowles, Mark Pavek, Lisa Knowles, Zach Holden, Nora Fuller*, – WSU Pullman
- 11:15 am **A95109-1. A Replacement for Norkotah? Strengths, Weaknesses and Cultural Management**  
*Zach Holden, Mark Pavek, Rudy Garza, Josh Rodriguez* - Washington State University, Pullman
- 11:30 am **Tracking the Petiole Nitrate Concentrations of Eight Cultivars – How Do They Compare?**  
*Mark Pavek, Zach Holden, Rudy Garza, Josh Rodriguez* – WSU, Pullman
- 11:40 am **Defining Nitrogen Rates to Maximize Profits from Alturas and A93157-6LS**  
*Chris Hiles, Mark Pavek, Zach Holden, Rudy Garza, Josh Rodriguez* – WSU, Pullman
- 11:50 am - 1:30 pm **HOSTED LUNCH**

## Concurrent Session II: Potato Pest Management Field Tour

- 10:30 am **Cultural & Chemical Management of Pink Rot (*Phytophthora erythroseptica*) in the C. Basin**  
*Tom Cummings, Dennis Johnson* - WSU, Pullman
- 10:45 am **Bacterial Diseases of Potatoes-What is the Impact on Production?**  
*Brenda Schroeder* - WSU, Pullman
- 11:05 am **Developing Disease Management Tactics for Powdery Scab**  
*Dennis Johnson, Tom Cummings* - WSU, Pullman
- 11:20 am **The Diverse Community of Beneficial Insects (and Spiders) in Potatoes**  
*Bill Snyder* - WSU, Pullman
- 11:35 am **Diseases of Insects and Their Use in Biological Control**  
*Ricardo Ramirez, Bill Snyder* - WSU, Pullman
- 11:55 am - 1:30 pm **HOSTED LUNCH**

## Concurrent Session III: Potato Pest Management Workshop

- 10:30 am **The Significance of Herbicide Residue in Non-Target Species**  
*Bill Cobb* – Cobb Consulting Services, Kennewick
- 11:00 am **Multi-Faceted Bio-Control Methods Against *M. Chitwoodi* & the Colorado Potato Beetle**  
*Donna Henderson, Katerina Riga* – WSU-Pullman & Prosser
- 11:15 am **How to ID Key Potato Pests – Potato Tuberworm, Aphids, and Beet Leafhoppers**  
*Sylvia Rondon* – OSU, Hermiston
- 11:30 am **An Update on Vydate for Nematode Control**  
*Nick David, Phil Hamm* – OSU, Hermiston
- 12:00 pm **A Synthetic Bait for Wireworms? Ongoing Studies at the Wapato Laboratory**  
*Dave Horton, Peter Landolt* – USDA-ARS, Wapato
- 12:30 - 1:30 pm **HOSTED LUNCH**

# Recycle Your Pesticide Containers

## DON'T:

- Do not burn, bury, or dump on property.
- Do not put plastic lids back on empty containers. This inhibits the ability to perform required container inspections.

## DO:

- Rinse containers until no residue remains. Best to do when mixing and loading material.
- Drain so that they dry inside and out, and leave no apparent odor.
- Remove slip-on labels and label booklets. Glued on labels may remain on container.
- Remove hard plastic lids and discard.
- Remove most of the foil seal. A small amount is acceptable.
- Remove lids and metal bails from five gallon buckets. Lids from buckets are accepted if metal ring and rubber gasket are removed. Five gallon containers and smaller are accepted whole.
- Plastic drums are required to be rinsed so they are decontaminated as well. Remove bungs (lids) and store upside down so they will drain out completely. Once this is accomplished, the drums can be accepted whole for recycling, they do not need to be cut into pieces as was required a few years ago.
- Visit <http://www.nwagplastics.com/preparation.php> for pictures of acceptable v. unacceptable containers.

\*\*Proper disposal is either recycling (preferred) or a landfill.\*\*

## Northwest Ag Plastics 2007 Pesticide Container Recycling Schedule:

Please refer to <http://www.nwagplastics.com/schedule.php> for a complete calendar.

Phone #: 509-457-3850

Date	Time	Location
June 4	8:00am	29125 SE Duthie Rd., Fall City
June 4	1:00pm	Mt. Vernon
June 5	8:00am	Lynden
June 5	8:00am	Mt. Vernon
June 6	8:00am	Conway/Mt. Vernon
June 7	8:00am	Tacoma
June 7	1:00pm	Shelton
June 8	8:00am	Chehalis Area
June 13	8:00am	Reardon / Davenport / Wilbur
June 14	8:00am	Odessa
June 15	8:00am	Moses Lake
June 15	1:00pm	Moses Lake
June 18	9:00am	Warden
June 18	1:00pm	Warden Airport

Date	Time	Location
June 19	8:00am	Warden
June 20	8:00am	Othello Airport
June 21	8:00am	Royal City
June 21	1:00pm	Royal City
June 22	8:00am	Royal City
June 26	8:00am	Palouse
June 26	1:00pm	Garfield
June 27	8:00am	Pullman
June 28	8:00am	Eltopia
June 28	9:00am	Ellensburg
June 28	1:00pm	Kittitas
July 2	8:00am	Benton County
July 3	8:00am	Benton County
July 5	8:00am	Oregon Sites

Additional Link(s):

Far West Agribusiness Association: [www.fwaa.org](http://www.fwaa.org); Phone #: 509-465-5055