



# Potato Progress

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

Andrew Jensen, Editor. [ajensen@potatoes.com](mailto:ajensen@potatoes.com); 509-760-4859

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## Potato Research and Extension Field Days, 2012

Each year the research and extension centers around the Northwest host field days for the agriculture industry and the public. These are opportunities to meet the scientists who support your industry, to learn about what they do, and to offer your feedback. Below is a list of several of these coming up this growing season. These are the events relevant to potatoes.

### Idaho

University of Idaho, Kimberly

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

Twilight Tour, July 18.

University of Idaho, Aberdeen

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

University of Idaho, Parma

TBA

Miller Research, Rupert

August, TBA

### Oregon

Oregon State University, Ontario

Malheur Experiment Station Weed Control Tour, June 14, 8:30 am

Malheur Experiment Station Summer Farm Festival and Annual Field Day

Oregon State University, Hermiston

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

### Washington

Washington State University, Othello

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

Washington State University, Mount Vernon

Research and Extension Center Field Day, July 12.

USDA Agricultural Research Service, Prosser

Field Day, Paterson, July 17, 8:30 am – noon.

# Potato Psyllid Identification Workshops Scheduled

Zebra chip (ZC) and potato psyllid are on a lot of our minds this spring. To help industry prepare for psyllid monitoring and scouting, several training sessions have been scheduled. The workshops in Washington and Idaho will have an open format, and we ask people to come any time that fits their schedule during each session. This will allow more personal attention and access to specimens and samples as people come and go. The workshops in Oregon require pre-registration. To register for the Oregon events, please contact Annette Teraberry ([Annette.teraberry@oregonstate.edu](mailto:Annette.teraberry@oregonstate.edu)) or 541-567-8321.

Dates, times, and locations for these sessions are:

## Washington

May 1, 1:30 – 4 pm, Moses Lake, Potato Commission office, 108 S Interlake Rd.

May 2, 9:30 – noon, Pasco, Franklin County Extension office, 404 W. Clark Ave.

## Idaho

May 15, 9:30 – noon, Parma Research and Extension Center, 29603 U of I Lane, Parma

May 16, 9:30 – noon, Miller Research LLC, 426 East 200 North, Rupert

May 17, 9:30 – noon, Idaho Falls R & E Center, 1776 Science Center Dr.

## Oregon

April 17, 9:00 – 10:00 am, Hermiston Ag. Research and Extension Center, 2121 South First Street





May 8, 9:00 – 10:00 am, Hermiston Ag. Research and Extension Center, 2121 South First Street

**(NOTE date change from our last issue)**



# Potato Research at the USDA-Agricultural Research Service, Prosser, WA

One purpose of Potato Progress is to help industry members and research/extension scientists to connect and get to know something about each other. Below is a first installment of a series of pieces showing a little about the work done with potatoes in Prosser by USDA-ARS scientists.

POTATO VARIETY IMPROVEMENT (NP 301)			
			
Duroy Navarre Geneticist (100%) 509-786-9261	Charles Brown Geneticist (100%) 509-786-9252	James Crosslin Plant Pathologist (100%) 509-786-9253	Lyndon Porter (2012 on) Plant Pathologist (50%) 509-786-9237

**1. Working towards the eradication of Potato Cyst Nematode (Navarre):** We are developing methods that can be used for eradication of PCN and complement the ongoing fumigation efforts of APHIS. Trap crops and hatching factors can be used to stimulate a “suicide hatch” of the nematodes. Trap crops with enhanced root growth could be more effective for eradication. Partial purification of “hatching factors” from potato root exudates suggests more than 10 are present.

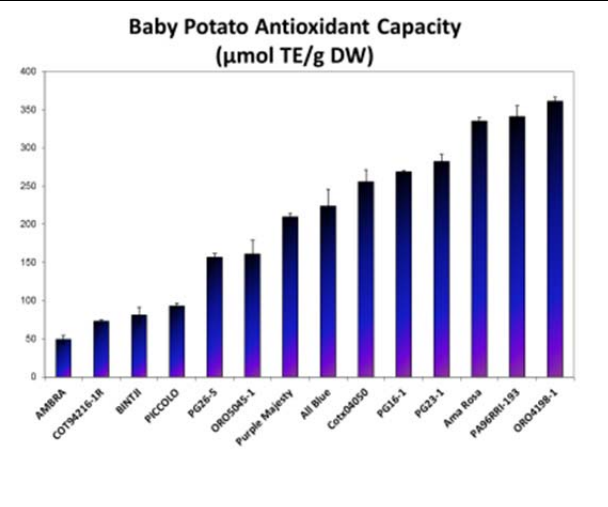
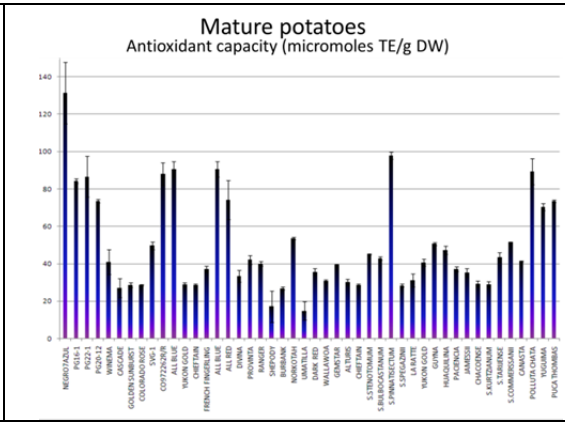


**Fig. 1.** *S. sisymbriifolium* modified to have greater root growth. On the left are two wild type plants showing typical root growth. On the right are two genetically modified plants. All plants were grown in pots in the greenhouse, then the soil washed away from the root. Modified plants have such a solid mass of root growth that the rootball is self-supporting in the absence of any soil.

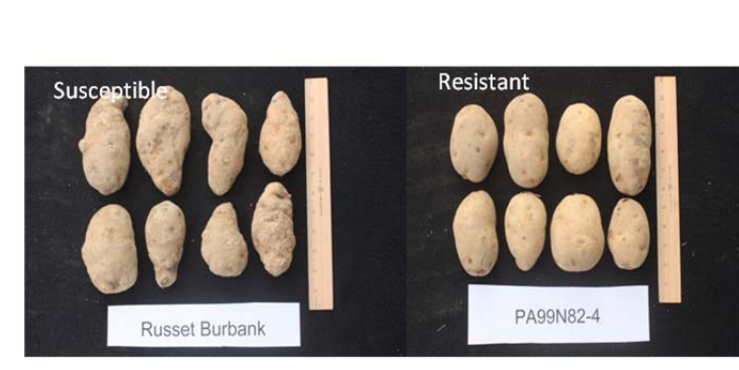


**2. High-throughput analytical techniques for potato improvement (Navarre):** We developed high-throughput HPLC/LCMS methods that allow us to evaluate 100s of compounds in tubers. This year we are extending this to GCMS to be able to measure hundreds of additional compounds. These techniques facilitate development of superior potatoes and are especially being used for nutritional enhancement.

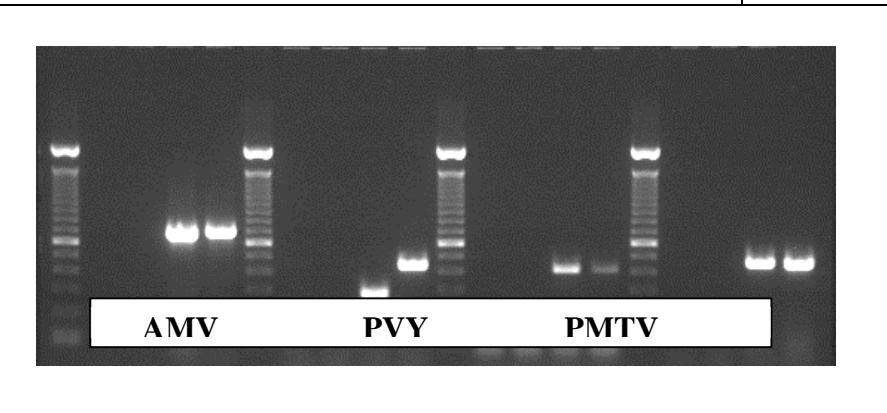
**3. Assessing the nutritional potential of potatoes (Navarre):** We are developing potatoes with higher amounts of phytonutrients such as antioxidant phenolic compounds and have identified lines that are easily competitive with other vegetables. Folate deficiency is responsible for birth defects and other diseases. Screening over 80 genotypes identified some natural potatoes that would qualify to be labeled as “good sources” of folate and we have made transgenic lines with > 8-fold increase in folate content.



**4. High-phytonutrient baby potatoes (Navarre):** We found that immature potatoes contain higher amounts of some phytonutrients and retain high amounts after cooking. Some baby potatoes contain higher amounts of antioxidants than spinach or broccoli. A collaborator’s human feeding study showed purple baby potatoes reduced blood pressure. Baby potatoes could appeal to consumers as a nutritious, gourmet product and provide a growth opportunity for the industry and help restore the healthful image of potatoes.



**5. Columbia root-knot nematode in the Columbia Basin (Brown):** Using wild species sources of resistance, we have developed advanced clones that do not require fumigation to produce an undamaged crop. The resistance is simply controlled and effective against the entire range of root knot nematodes. The resistance functions by restricting nematode entrance into the tubers.



**6. Rapid technique for simultaneous identification of several viruses (Crosslin):** Many viruses infect potatoes. Accurate identification is essential. We developed a simple protocol and standardized reagents that work for detection of eleven viruses of potatoes. These methods greatly simplify virus testing.