



Potato Progress

Research & Extension for the Potato Industry of
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2016 Washington State Commercial Seed Lot Profile and Potato Field Day Preview

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Poor quality potato seed will impact commercial grower income. Major quality factors are disease, virus, herbicide damage, frost damage, and seed-piece handling. Commercial potato growers in Washington State typically purchase their seed potatoes from regions outside of Washington. For quality control, it is essential that each seed lot be grown under controlled conditions for approximately 70 days and evaluated by professionals. The Seed Lot Trial provides Washington potato growers, seed suppliers, and handlers a side-by-side comparison of seed lots utilized by Washington commercial potato producers. The associated potato field day provides potato buyers and sellers an opportunity to observe performance of seed lots of common interest and discuss results. To improve field disease diagnostic skills, WSU, USDA and potato industry personnel from across the western U.S. exchange ideas and share expertise on field diagnosis of disease symptoms and other seed tuber quality factors.

Washington State University has conducted the Commercial Seed Lot Trial in cooperation with the Washington State Potato Commission and industry for 53 years (1961-78, 1982-2016). We incorporate a virus/disease reading training session into our program as a routine requirement prior to the first field reading. The goal of the training session is to improve our plant-reading accuracy by training the unexperienced and fine-tuning the expert. Plant disease experts from across the NW, including the Washington, Montana, and Oregon potato seed certification teams, continue to assist in the seed lot readings as well as the proof-readings. The results will be available under "2016 Washington Commercial Seed Lot Trials" at www.potatoes.wsu.edu.

WA growers submitted 353 seed lots into the 2016 WA Commercial Seed Lot Trial, compared with 285 in 2015 (Figure bars). WA acreage for 2016 is unknown at this time, but it typically fluctuates between 155,000 and 165,000 (Figure 1, dotted line).

Montana and Idaho continue to provide WA growers with the majority of their seed lots, followed by Canada, WA, OR, ND and all "Other" locations (Figure 2). The composition of the 2016 Seed Lot Trial included 21% "Other" (newer and/or non-mainstream varieties) 17% Russet Burbank, 14% Russet Norkotah and RN strains, 14% Umatilla Russet, 15% Ranger Russet, 6% Alturas, 6% Shepody and 6% Clearwater Russet (Figure 3). The 2016 "Other" category was composed of 40 (compared with 43 in 2015 and 29 in 2014) new, non-mainstream varieties, or specialty varieties, ranging from newly-released varieties like Payette Russet to older specialty varieties like Yukon Gold. Clearwater Russet seed lots continue to increase as McDonalds® might accept, or already has accepted, this variety for its French fries. Clearwater accounted for 6% of the seed lots in 2016 and 4% in 2015 (Figure 3).

Figure 1. Number of Potato Seed Lots Entered into the WSU Seed Lot Trial (bars) and WA Acreage (dotted line) Across the Past 26 Years

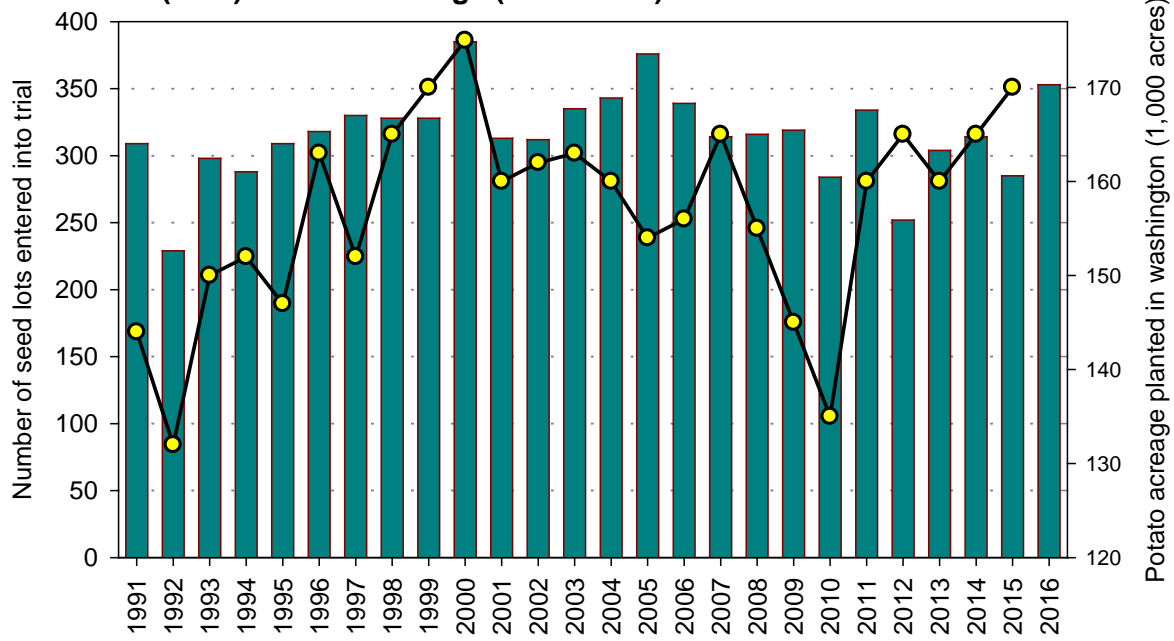
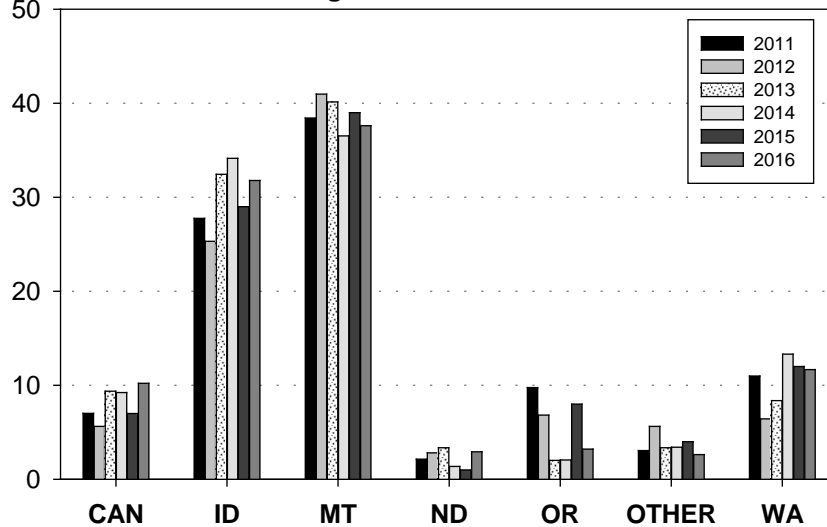


Figure 2. Percent of Seed Lots from each Seed-Growing Region between 2011-16



Non-U.S. developed potato variety seed lot entries have been steadily increasing over the past 5 years. Thirty-nine non-U.S. developed potato varieties were entered into the 2016 seed lot trial, accounting for 11% of all seed lots entered in the trial (data not shown). Varieties developed by the Northwest Potato Variety Development Program/PVMI accounted for 44% (30% in 2015) of the seed lots entered into the 2016 trial and included: Alturas, Bannock Russet, Classic Russet, Clearwater Russet, Defender, Highland Russet, Huckleberry Gold, Modoc, Payette Russet, Ranger Russet, Targhee Russet, Umatilla Russet, and Yukon Gem. The most significant change in the WA seed lot profile in the past 50 plus years has been the increase in the number varieties WA growers are planting. In 1962, 8 varieties were entered into the seed lot; in 2016, there were 50 (Figure 4).

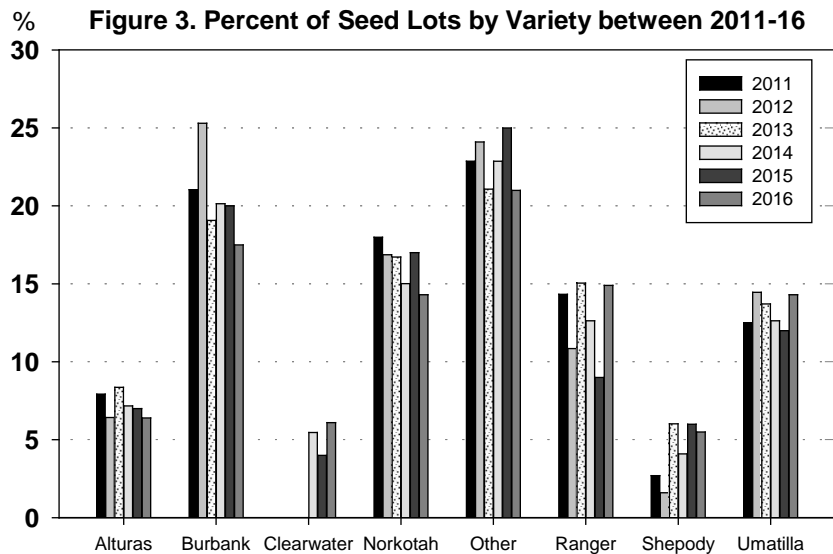
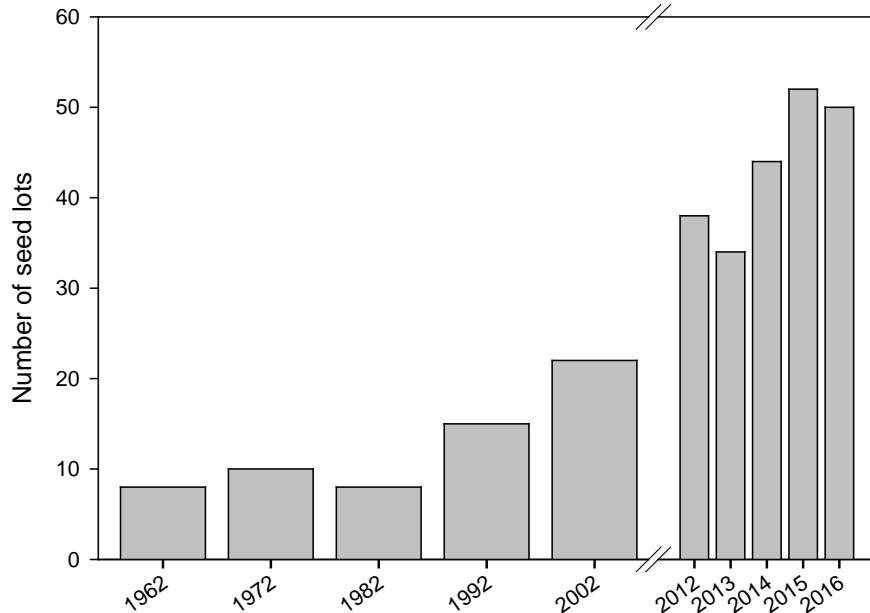


Figure 4. Number of Potato Varieties and Variety Strains entered into the WSU Seed Lot Trial Since 1962



The potato field day will begin at 8:30 am on THURSDAY, June 23 at the WSU Othello Research Farm (see program below). In addition to viewing the seed lots, you will be able to participate in one of two concurrent sessions. Sessions I and II will allow you to view a sample of this year's in-field research. Both sessions will offer CCA recertification credits; however, only session II (pest management tour) will offer WA, OR, and ID pesticide recertification credits. A hosted-lunch, offered between 12:00 and 1:00 pm, will complete the field day. The agenda, seed lot information, and a map to the research center can be found on our website: www.potatoes.wsu.edu.

Pesticide License Recertification Credits Applied For:

Commercial Seed Lot Trial Disease Results and Viewing

WA, ID, OR: 1 credit

CCA: 1 Integrated Pest Management credit

Concurrent Session I: Potato Cultural Practices Field Tour

WA, ID, OR: 0 credit

CCA: 2.0 Crop Management credit

Concurrent Session II: Potato Pest Management Field Tour

WA, OR, ID: 2 credits

CCA: 2.0 Integrated Pest Management credits

WSU Potato Field Day – Thursday June 23, 2016

Located at WSU Othello Research Unit – 1471 W Cox Rd, Othello
(6 miles East of Hwy. 26/17 Junction, On Booker Rd, ¼ Mile South of Hwy. 26)

8:30–8:55 am Coffee and donuts

8:55–9:10 **National Tuber Necrotic Virus Project PVY DEMO: 42 Potato Varieties Inoculated with 3 Strains of PVY: O, N-Wi and NTN** *Jonathan Whitworth* (USDA-ARS, Aberdeen, ID) and *Alex Karasev* (Univ. of ID, Moscow), *Mark Pavek* (WSU-Pullman)

9:10–10:00 Commercial Seed Lot Trial Disease Results and Viewing, *Mark Pavek* – WSU Pullman

Concurrent Session I: Potato Cultural Practices Field Tour

10:15 **Updates on the 2016 Insect Monitoring Program and WSU Potato Pest Alerts**
Carrie Wohleb – WSU, Grant/Adams Counties

10:30 **Phosphorus Management in the Columbia Basin: Are Current Strategies Practical?**
Chandler Dolezal, M Pavek, R Knowles, Z Holden, L Knowles, R Garza, J Rodriguez – WSU, Pullman

10:45 **Clearwater Russet Cultural Management** *Kathryn Bolding, Mark Pavek, Rick Knowles, Zach Holden, Lisa Knowles, Chandler Dolezal, Rudy Garza, Josh Rodriguez* – WSU, Pullman

11:00 **Manipulating plant establishment, tuber set, size & shape with growth regulators**
Rick Knowles, Lisa Knowles, Cody Dean, Derek Herman Graham Ellis, MJ Pavek – WSU, Pullman

11:15 **In-season stress & retention of postharvest quality**
Rick Knowles, Lisa Knowles, Graham Ellis, Derek Herman, MJ Pavek – WSU, Pullman

11:30 **Screening of Tri State Germplasm for Disease Resistance and Nutrient Quality**
Chuck Brown, Roy Navarre, Rich Quick, Launa Hamlin, Joanne Holden, – USDA-ARS Prosser

11:45 **WSU Potato Research & Ext. 2016: 40 Field Trials in Othello Alone**
M Pavek, Z Holden, R Knowles, L Knowles, D Johnson, T Waters, C Wohleb, I Burke, C Brown, R Navarre – WSU, Pullman

12:00 pm – 1:00 pm

HOSTED LUNCH

Concurrent Session II: Potato Pest Management Field Tour

10:00 **Preventing Metribuzin Resistance: Targeted Herbicide Programs in Potatoes**
Rachel Zuger, Ian Burke – WSU, Pullman; *Pam Hutchinson* - Univ. of Idaho, Aberdeen

10:15 **The Potential Effects of Weeds and Seed Treatments on Verticillium Wilt of Potato**
David Wheeler, Zack Frederick, D. Johnson, and T. Cummings – WSU, Pullman

10:30 **Outlook and Management Issues for Late Blight, Early Blight, Bacterial Stem Rot, and Sclerotinia Stem Rot** *Dennis A. Johnson* – WSU, Pullman

10:45 **Searching for Lygus bugs in potatoes in the Pacific Northwest**
Silvia I. Rondon and Josephine Antwi – OSU, Hermiston

11:00 **Detection and Control of Potato Pests in the Columbia Basin**
Tim Waters – WSU, Benton/Franklin Counties

(field tour moves inside or people can attend the remainder of the cultural management tour)

11:20 **SPECIAL MINI-WORKSHOP PERSONAL PROTECTIVE EQUIPMENT (PPE): PPE Demonstrations and Ramping Up for the 2017 Worker Protection Standard Requirements** *Tom Hoffmann* (WSDA) *Bob Kenner* (Norco), *Matthew Blua* (WSPC)

12:20 pm – 1:00 pm

HOSTED LUNCH

CCA and pesticide recertification credits have been applied for (WA, OR, MT, & ID)