



Potato Progress

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

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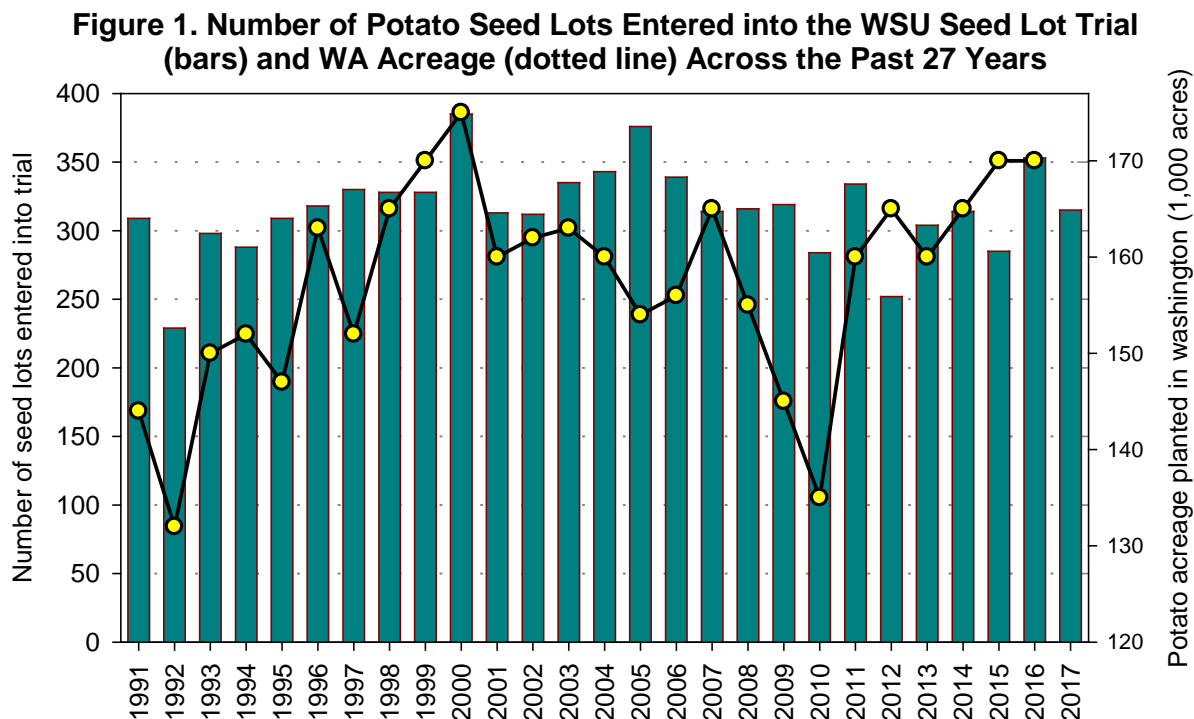
2017 Washington State Commercial Seed Lot Profile And Potato Field Day Preview

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Washington State University

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 seed-growing regions which typically lie 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 result. 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 54 years (1961-78, 1982-2017). 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 "2017 Washington Commercial Seed Lot Trials" at www.potatoes.wsu.edu.

WA growers submitted 315 seed lots into the 2017 WA Commercial Seed Lot Trial, compared with 353 in 2016 (Figure bars). WA acreage for 2017 is unknown at this time, but it typically fluctuates between 155,000 and 170,000 (Figure 1, dotted line).



Montana and Idaho continue to provide WA growers with the majority of their seed lots, followed by WA, CAN, OR, ND and all “Other” locations (Figure 2). The composition of the 2017 Seed Lot Trial included 19% “Other” (newer and/or non-mainstream varieties) 17% Russet Burbank, 17% Umatilla Russet, 16% Ranger Russet, 10% Russet Norkotah and RN strains, 8% Shepody, 7% Clearwater Russet, and 6% Alturas (Figure 3). The 2017 “Other” category was composed of 31 (compared with 40 in 2016 and 43 in 2015) new, non-mainstream varieties, or specialty varieties, ranging from newly-released varieties like Mountain Gem Russet to older specialty varieties like Yukon Gold. Clearwater Russet seed lots continue to increase as McDonalds® has accepted this variety for its french fries. Clearwater accounted for 7% of the seed lots in 2017, 6% in 2016, and 4% in 2015 (Figure 3).

Non-U.S. developed potato variety seed lot entries have been steadily increasing over the past 6 years. Thirty-nine non-U.S. developed potato varieties were entered into the 2017 seed lot trial, accounting for 10% of all seed lots entered in the trial (data not shown). Varieties developed by the Northwest Potato Variety Development Program/PVMI accounted for 48% (44% in 2016) of the seed lots entered into the 2017 trial and included: Alturas, Bannock Russet, Classic Russet, Clearwater Russet, Defender, Highland Russet, Modoc, Mountain Gem Russet, 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 2017, there were 42 (Figure 4).

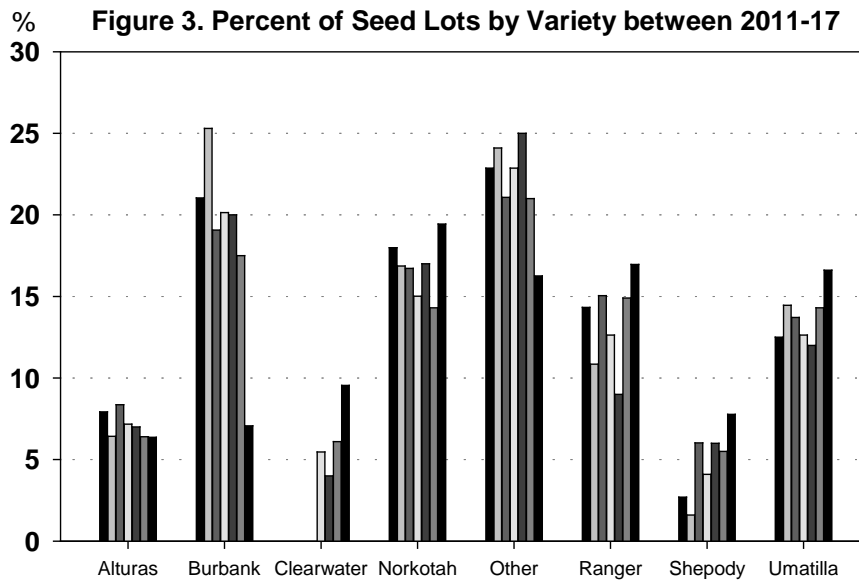
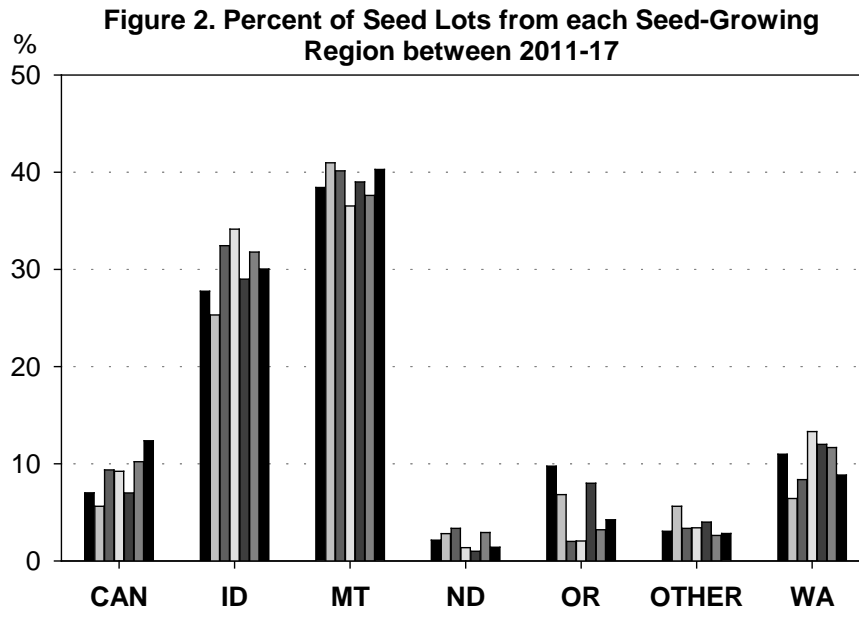
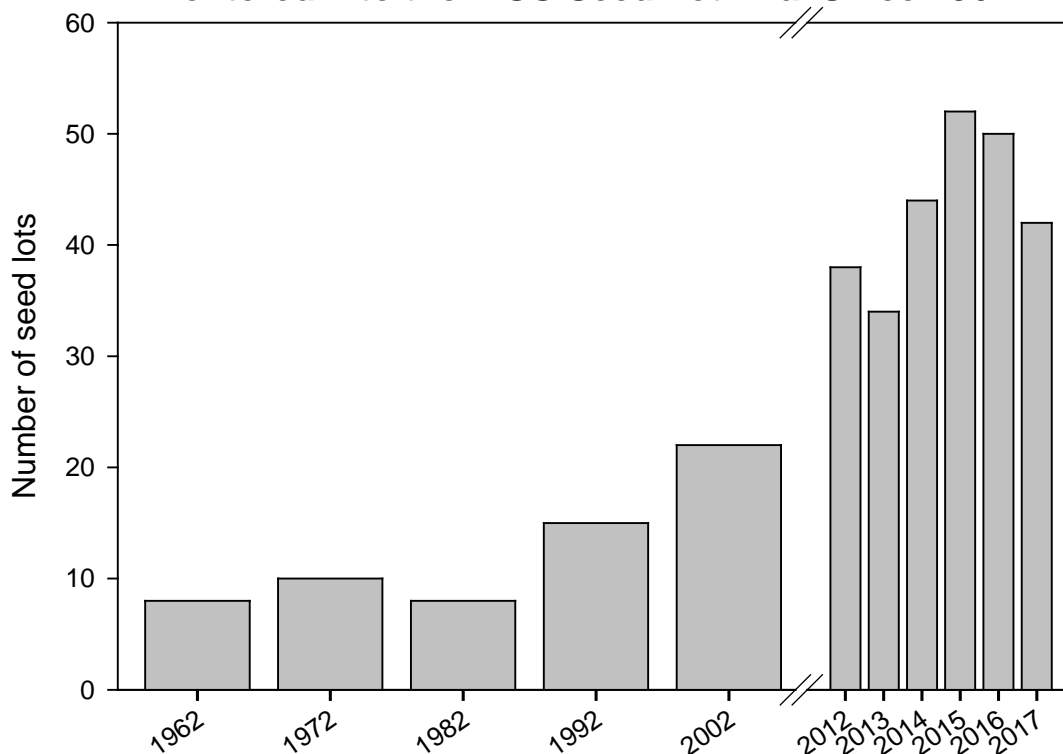


Figure 11. Number of Potato Varieties and Variety Strains entered into the WSU Seed Lot Trial Since 1962



The potato field day will begin at 8:30 am on THURSDAY, June 22 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 22, 2017

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

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

Concurrent Session I: Potato Cultural Practices Field Tour

- 10:00 **Enhancing French Fry Yields by Manipulating Tuber Size Distribution & Shape**
Cody Dean, Lisa Knowles and Rick Knowles– WSU, Pullman
- 10:10 **Can Planting Date Affect Storability & Process Quality?**
Lisa Knowles, Graham Ellis and Rick Knowles– WSU, Pullman
- 10:20 **Factors Affecting Durable Retention of Cold Sweetening Resistance**
Graham Ellis, Lisa Knowles and Rick Knowles– WSU, Pullman
- 10:30 **Innate Update: What the Traits Mean for Growers and Which Lines Have Been Deregulated**
John Pierre – Simplot Plant Sciences, Boise
- 10:45 **Upgrading Potato Evapotranspiration Crop Coefficients, Strategic H₂O Deficits on Potato, Scrutinizing Alternative Agricultural Inputs**, *F Gonzalez, M Pavek, Z Holden* – WSU, Pullman
- 11:00 **Remotely Managing, Monitoring, and Controlling your VRI System through FieldNET**
Chuck Powell and Josh Egan – Lindsay Corporation
- 11:15 **Makah Ozette Fingerling Potato**
Joann Reckling of Tranquil Farms– Tranquil Farms, Oregon City, Oregon
- 11:30 **What's in a Potato and its Relationship to Human Nutrition and Disease Resistance in the Potato Plant**, *Roy Navarre, Chuck Brown, and Kylie Swisher*, – USDA-ARS Prosser
- 11:45 **Refining Cultural Management to Match Modern Potato Production Needs**
M Pavek, Z Holden, R Garza, J Rodriguez, F Atilano – WSU, Pullman & Othello
- 11:45 pm – 1:00 pm **HOSTED LUNCH**

Concurrent Session II: Potato Pest Management Field Tour

- 10:00 **WSU Potato Pest Alerts - What are We Expecting this Season?**
Carrie Wohleb – WSU, Grant/Adams Counties
- 10:15 **Populations of *Verticillium dahliae* that Infect Potato and Rotation Crops**
David Wheeler, D. Johnson, and T. Cummings – WSU, Pullman
- 10:25 **Update on the Current and Expected Potato Disease Situation in the Columbia Basin**
Dennis A. Johnson – WSU, Pullman
- 10:35 **A Diverse Population of *Colletotrichum* (cause of black dot) Infects Potato with Varying Results in the Columbia Basin**, *Daniel Farber and Dennis Johnson* – WSU, Pullman
- 10:45 **Insecticide Selection for Managing Insect Pests of Potato**
Tim Waters – WSU, Benton/Franklin Counties
- 11:00 **Effects of PVY Strains on Tubers in Storage**
Alex Karasev, M. Andros, L. Woodell, Ken Frost, and Nora Olsen – Univ. of Idaho and OSU
- 11:15 **Pale Cyst Nematode: Implications for the Potato Industry**
L.M. Dandurand, M. Morra, C. Brown, P. Hutchinson – Univ. of Idaho and USDA
- 11:30 **New Technology Allows Growers to Monitor and Record Pesticide Chemigation Applications Electronically in Lieu of Human Observation** *Bryan J. Gran* – Surefire Ag Systems
- 11:45 pm – 1:00 pm **HOSTED LUNCH**

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

University of Idaho Pest Management Tours

Please join us for the UI Snake River Pest Management Tour. Both tours begin at 8:30 am with registration starting at 8:00 am. The tours will include industry sponsored lunches.

- **June 20:** The Kimberly R & E Center tour will look at weed control trials in spring wheat, sugar beet tolerance to ethofumesate and non-registered herbicides, weed control in dry bean with narrow rows and seeding rates, tillage effects on weed control in dry bean, and safflower tolerance to sulfentrazone. Insect management studies include zebra chip disease infection timing and development, potato psyllid insecticide evaluation, potato psyllid behavioral response to resistant potato germplasm, sugar beet germplasm response to sugar beet root maggots, and aphid effects on sugar beet. In addition, disease diagnostics, spore detection methods, and weather models to predict disease developing in wheat, barley, potatoes, beans, and sugar beet will be presented, including how these can be used to inform the use of fungicides. This will include the demonstration of the Burkard MVI Cyclone sampler.
- **June 21:** The Aberdeen R & E Center tour will look at several weed control trials in potato that include targeted herbicide programs, Sonalan tank mixtures for weed control, comparison of metribuzin formulations, potato variety tolerance trials, PCN trap crop update, and herbicide mechanism of action plots. In addition, updates on potato and cereal diseases, weeds in other crops, and quinoa will be presented.

Idaho State Department of Agriculture Pesticide Applicator Recertification Credits and Certified Crop Advisor credits (Kimberly) will be available.

Oregon State University Potato Field Day, Hermiston

June 21, 2017

7:45 – 8:15 am	Registration with Coffee and Donuts
8:15 – 8:30 am	Introductions, Meet and Greet, Director, Phil Hamm, OSU
8:30 – 8:50 am	Update on Oregon Potato Breeding and Variety Development – Sagar Sathuvalli, OSU
8:50 – 9:05 am	Columbia Root-knot Nematode Resistance Research at OSU – Sapinder Bali, OSU
9:05– 9:20 am	Identification of Genetic Resistance to Columbia Root Knot Nematode and Verticillium Wilt in Potato for Soil Health – Ryan Graebner, OSU
9:20 – 9:40 am	Nematode Management Update: What to Do for the Rest of 2017 and Preparing for 2018 – Russ Ingham, OSU
9:50 – 10:10 am	Nitrogen Requirement for New Potato Varieties in the Columbia Basin of Oregon – Ray Qin, OSU
10:10 – 10:30 am	New Pivot Tracks for Optimum Crop Management – Tim Weinke and Greg Cook OSU
10:30 – 10:45am	Lygus in Potatoes: Identification, Biology and Management – Josephine Antwi and Silvia Rondon, OSU
10:45 – 11:00 am	Chemical Control of Lygus – Ira Thompson and Silvia Rondon, OSU
11:00 –11:25 am	Rhizoctonia and Pythium Control Strategies - Joshua Adkins, Syngenta
11:25 – 11:50 am	Preview of Plant Pathology Trial Work and Updates on Potato Disease Issues – Kenneth Frost, OSU
11:50 – 12:05 pm	Impact of Potato Virus Y on Tuber Symptoms, Quality in Storage, and Fry Color – Markus Andros, Nora Olsen and Kenneth Frost. OSU

Lunch provided courtesy of Syngenta Crop Protection.

Pesticide credits for 2 Oregon, 2 Washington, and 4 CCA credits will be available.