	<h1 style="text-align: center;">Potato Progress</h1> <p style="text-align: center;">Research & Extension for the Potato Industry of Idaho, Oregon, & Washington</p> <p style="text-align: center;">Andrew Jensen, Editor. ajensen@potatoes.com; 509-760-4859 www.nwpotatoresearch.com</p>
<p>Volume XVIII, Number 7</p>	<p style="text-align: right;">11 June 2018</p>

2018 Washington State Commercial Seed Lot Profile and Potato Field Day Preview

Mark J Pavek, Zach J Holden, Tim Waters, Carrie Wohleb, 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 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 producers. The associated potato field day provides potato buyers and sellers an opportunity to observe and discuss performance of seed lots of common interest. 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 55 years (1961-78, 1982-2018). 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 “2018 Washington Commercial Seed Lot Trials” at www.potatoes.wsu.edu.

WA growers submitted 309 seed lots into the 2018 WA Commercial Seed Lot Trial, compared with 315 in 2017 (Figure 1, bars). WA acreage for 2018 is unknown at this time, but it typically fluctuates between 155,000 and 170,000 (Figure 1, dotted line).

Montana and Idaho provide WA growers with the majority of seed potatoes, followed by Canada (CAN), WA, OR, ND and all “Other” locations (Figure 2). The composition of the 2018 Seed Lot Trial included 19% “Other” (newer and/or non-mainstream varieties), 18% Umatilla Russet, 17% Russet Burbank, 12% Clearwater Russet, 11% Ranger Russet, 9% Russet Norkotah and RN strains, 8% Shepody, and 7% Alturas (Figure 3). The 2018 “Other” category was composed of 33 (compared with 31 in 2017 and 40 in 2016) new, non-mainstream varieties, or specialty varieties, ranging from newly-released varieties like Payette Russet to older specialty varieties like Chieftain. Clearwater Russet seed lots continue to increase as McDonalds® has accepted this variety for its French fries. Clearwater accounted for 12% in 2018, 7% of the seed lots in 2017, 6% 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 28 Years

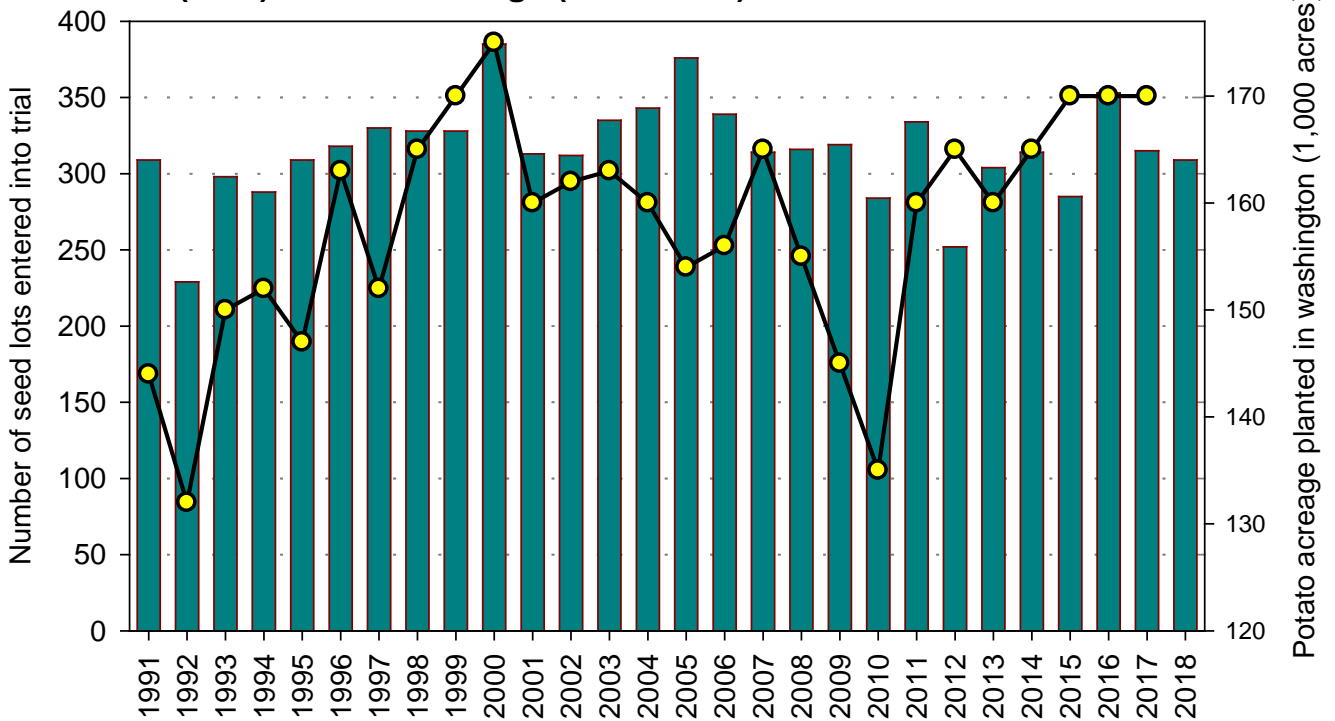
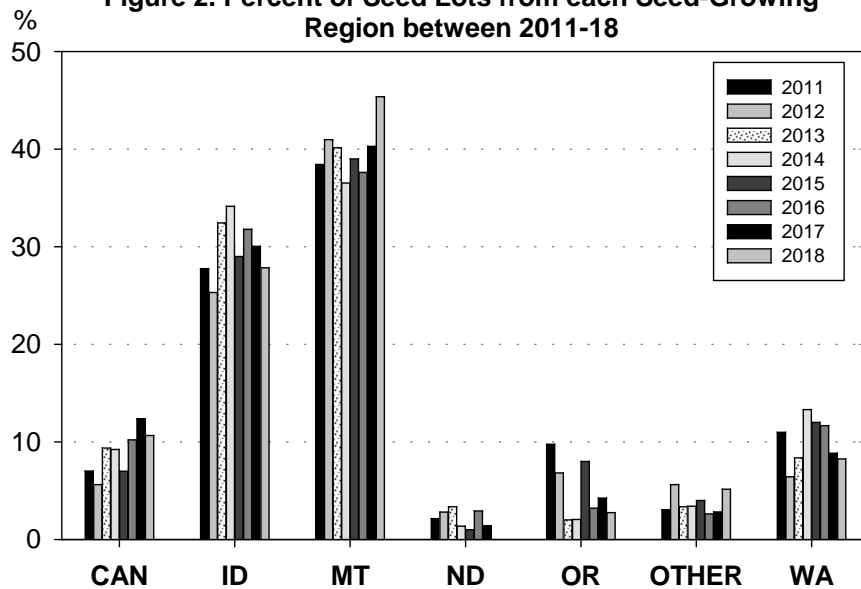


Figure 2. Percent of Seed Lots from each Seed-Growing Region between 2011-18



Non-U.S. developed potato variety seed lot entries have been steadily increasing over the past 6 years. Forty-three non-U.S. developed potato varieties were entered into the 2018 seed lot trial, accounting for 14% of all seed lots entered in the trial (data not shown). Varieties developed by the Northwest Potato Variety Development Program/PVMI accounted for 51% (48% in 2017) of the seed lots entered into the 2018 trial and included: Alturas, Clearwater Russet, Defender, Highland Russet, Mountain Gem Russet, Payette Russet, Ranger 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 2018, there were 43 (Figure 4).

Figure 3. Percent of Seed Lots by Variety between 2011-18

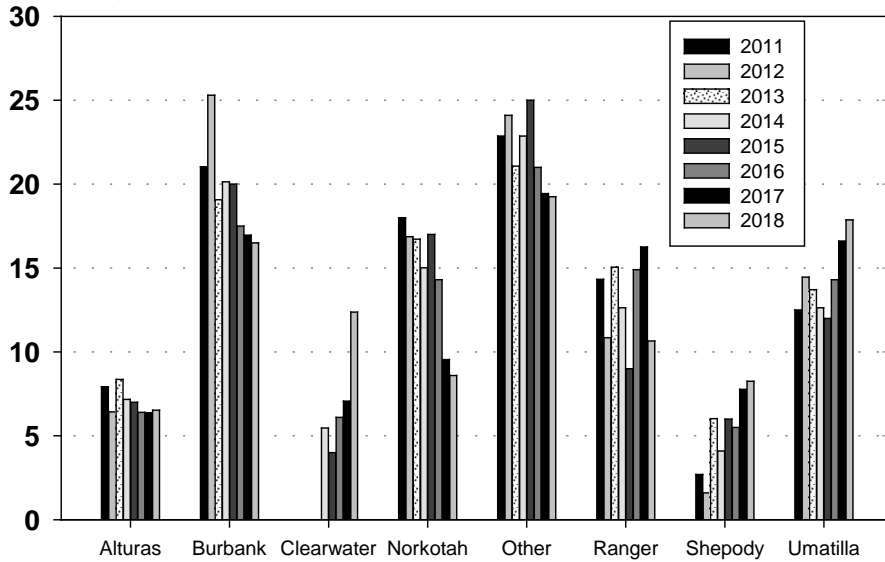
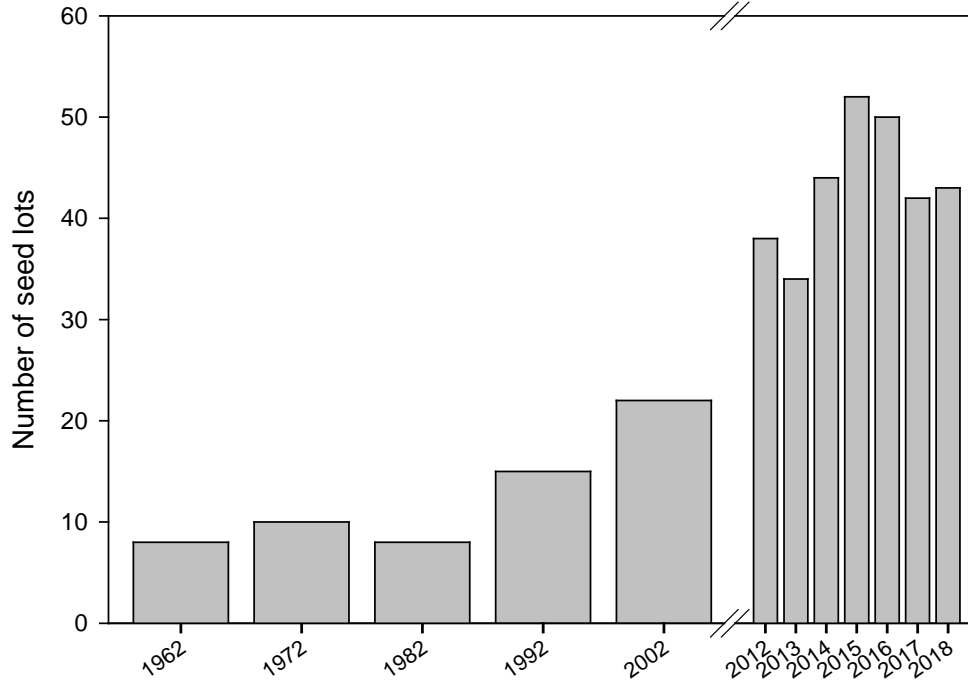


Figure 4. Number of Potato Varieties and Variety Strains entered into the WSU Seed Lot Trial Since 1962



The potato field day will begin at 8:30 am on THURSDAY, June 21 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: 1.0 Crop Management credit, 1.0 Soil and Water 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 21, 2018

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

8:55–10:00 **PVY DEMO: 20 Potato Varieties Inoculated with 3 Strains of PVY: O, N-Wi and NTN**
Mark Pavek (WSU-Pullman), *Stewart Gray* (Cornell Univ, Ithaca, NY) and National SCRI Team
Commercial Seed Lot Trial Disease Results and Viewing, *Mark Pavek* – WSU Pullman

Concurrent Session I: Potato Cultural Practices Field Tour

10:00 **Growing period effects on yield & postharvest quality**
Lisa Knowles and Rick Knowles– WSU, Pullman

10:15 **Plant growth regulator trials to improve production efficiency**
Graham Ellis, Lisa Knowles and Rick Knowles– WSU, Pullman

10:30 **Insect pest monitoring in Columbia Basin potato fields**
Carrie Wohleb – WSU, Grant/Adams Counties

10:45 **Neonicotinoid longevity in potato plants & do Lygus cause economic damage**
Tim Waters – WSU, Benton/Franklin Counties

11:00 **Potato production, biologicals, humic acids, foliar's soil amendments and MH30**
Colton Thurgood, Z Holden, R Garza, J Rodriguez, F Atilano, M Pavek – WSU, Pullman & Othello

11:10 **Defining cultural management of Mountain Gem Russet and Castle Russet**
Alejandro Cruz, Z Holden, R Garza, J Rodriguez, F Atilano, M Pavek – WSU, Pullman & Othello

11:20 **Direction of Planting: Does it really matter?**
Mark Pavek, Z Holden, R Garza, J Rodriguez, F Atilano – WSU, Pullman & Othello

11:30 **Automating irrigation management with Lindsay Corporation's FieldNET**
Josh Egan and Chuck Powell – Lindsay Corporation

11:45 **Improved irrigation management of potatoes by identifying water use patterns of common varieties** *Francisco Gonzalez, M Pavek, Z Holden* – WSU, Pullman

12:00 pm – 1:00 pm **HOSTED LUNCH**

Concurrent Session II: Potato Pest Management Field Tour

10:00 **Recent information on tuber necrotic viruses (PVY, PMTV and TRV)**
Stewart Gray – Cornell University, Ithaca, NY

10:15 **Seed tuber-borne Potato Virus Y and tuber growth cracks**
Debra Inglis – WSU, Mt Vernon

10:30 **Biology of PVY transmission by various types of aphids**
Andrew Jensen – NW Potato Consortium, Lakeview, OR

10:45 **The economic consequences of PVY on Russet Burbank and Russet Norkotah potatoes**
Chris McIntosh – Univ. of Idaho, Moscow

11:00 **Recombinant strains of PVY – where they come from and why are they changing?**
Alex Karasev – Univ. of Idaho, Moscow, ID

11:15 **History of PVY resistance breeding up to present day strategies**
Charles Brown– USDA-ARS, Prosser

11:30 **Update on two soil-borne viral diseases: Mop top and Rattle, and their management**
Hanu Pappu – WSU, Pullman

11:45 **Improving Lygus Control in the Columbia Basin**
Silvia Rondon – OSU, Hermiston

12:00 pm – 1:00 pm **HOSTED LUNCH**
CCA and pesticide recertification credits have been applied for (WA, OR, & ID)