



HERMISTON AGRICULTURAL RESEARCH & EXTENSION CENTER

Pivotal Moments

A Quarterly Newsletter for
Friends of HAREC



WINTER 2018

From the Director

Philip B. Hamm, Director Professor Emeritus, Plant Pathology

Welcome to Issue 3 of "Pivotal Moments", a quarterly newsletter from the Hermiston Agricultural Research and Extension Center (HAREC). We hope you enjoy a few highlights of the work being done.

It is hard to imagine another year has gone by and planting season is again just around the corner! However, before looking forward, let's take a moment and look back.

Newly hired agronomist, Dr. Ray Qin, & horticulturist, Dr. Scott Lukas, "experienced" their first field season. Thanks to many supporters across Oregon, the Legislature provided funding for these two positions in

2016, along with many other positions across the state.

Anna Browne & Angie Treadwell also joined the faculty at HAREC in 2016. Anna works with the 4-H program and Angie provides nutrition education. Both are very involved with our communities & schools.

Lora Sharkey & Larissa Ritzer joined the staff in the main office. All of these new hires bring great opportunities to further serve our stakeholders and I am so pleased they are part of HAREC.

One can't forget the 2017 addition of BMCC's new Precision Irrigated Agriculture facility built on HAREC's campus. We look forward to the years ahead as OSU & BMCC collaborate to help train those who will be working on regional farms and beyond. Thanks to the voters of the region that supported this and other new BMCC facilities.

Our ability to fulfill HAREC's mission also received a boost & will continue into 2018 with the remodeling of several buildings which will help to increase much-needed laboratory space. The majority of funds for these projects have been provided by non-state dollars.

Speaking of 2018, notice the picture in the newsletter showing students grafting a tree over 100 years ago. Oregon State University started 150 years ago this year and much will be done to celebrate this milestone, even at HAREC. So look for more information in future issues of PIVOTAL MOMENTS.

You are always welcome to visit, just let me know when you would like to see the facility. It truly is a great place. This is due to our very supporting stakeholders and our exceptional staff.

Look Who's Turning 150!



OSU Horticulture students grafting a tree. Far right is Professor George Coote (1842-1908). This photo, circa 1892, is from Oregon State University Libraries.

Oregon State University is celebrating its 150th Anniversary in 2018. Oregon's Land Grant institution was first established as Corvallis College on October 27, 1868. Now known as Oregon State University, it is one of only two, U.S. universities to have the prestigious designation as a Land Grant, Sea Grant, Space Grant and Sun Grant institution.

Events will be held statewide to celebrate this landmark occasion. OSU's Sun Grant Festival is April 9-20th.

Please visit the OSU150 website for highlights, events and to see how you can participate:
<http://oregonstate.edu/150>

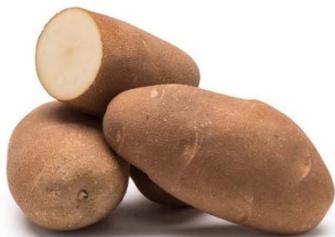
The Sea Grant Festival will be held February 12 – 23. Events will take place in Corvallis, Portland, Newport and various coastal locations.

You can reserve your spot for limited space events by going to: <http://communications.oregonstate.edu/sea>

OSU Releases Two New Potato Varieties: Castle Russet & Echo Russet

By Vidyasagar Sathuvalli, Ph.D.
Assistant Professor, Potato Breeding & Varietal Development

Oregon State University, in collaboration with University of Idaho, Washington State University and USDA-ARS, has jointly released two new potato varieties, Castle Russet and Echo Russet for the PNW potato industry.



Castle Russet

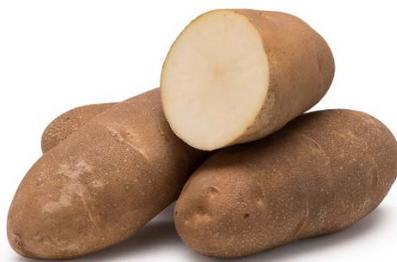
Castle Russet is a medium to late maturing variety with high full-season yield of oblong-long, heavy-russeted tubers with higher dry matter content and cold sweetening resistance than those of standard potato varieties.

Castle Russet is extremely resistant to all strains of potato virus Y (PVY), corky ring spot (CRS) disease caused by tobacco rattle virus (TRV) and potato mop top virus (PMTV). Castle Russet has greater resistance to *Fusarium* dry rot, common scab, and most internal and external defects than Russet Burbank, although it is susceptible to Hollow heart and possesses moderate levels of Glycoalkaloids.

Castle Russet has moderate dormancy with good fry quality when stored between 40 °F and 48 °F. Castle Russet's high late season yields of U.S. No. 1 tubers; tippy appearance and good culinary qualities make it a suitable candidate for fresh market production.

Echo Russet named after the city 'Echo,' in Umatilla county, is a medium to late maturing variety with long, large russeted tubers. Total yields are similar to those of Russet Burbank and Ranger Russet, however Echo Russet produced significantly greater yields than Russet Norkotah. Echo Russet produced significantly greater US No. 1 yields when compared with the standard varieties.

Echo Russet has high protein, high specific gravity, light fry color, low acrylamide level, and few internal and external tubers defects. This variety is resistant to *Fusarium* dry rot, *Pectobacterium* (syn. *Erwinia*) soft rot, and common scab.



Echo Russet

Echo Russet exhibits moderate resistance to Verticillium wilt, early blight, potato virus Y (PVY), potato leafroll virus (PLRV), potato mop top virus (PMTV), and corky ring spot.

The preponderance of resistances to major diseases gives Castle Russet

and Echo Russet, a great potential for organic production and sustainable farming systems.

Smith DiCarlo Stepping into Success

Sandy DeBano's PhD student, Lauren Smith DiCarlo, is making strides to finish her defense scheduled for June 2018. Lauren was partially supported by HAREC's first USDA National Needs Fellowship Grant for graduate student training.

In addition to her research and regular coursework, Lauren also completed a relatively new program at OSU, the Graduate Certificate in College and University Teaching.



Offered through the Graduate School, the 18-credit program provides advanced course work & experiential learning opportunities to those planning to pursue careers in teaching in higher education settings, or who plan to pursue careers in other fields that may require similar facilitation skills.

Her hard work has definitely paid off; she's already had an interview and an offer for a "real job".

Congratulations Lauren!

Irrigated Agricultural Entomology Program

By **Silvia Rondon, Ph.D.**
Professor
Extension Entomologist Specialist

Josephine Antwi joined OSU-HAREC in September 2015 as a Postdoctoral Scholar working with Dr. Silvia Rondon in the IAEP.



Antwi received her Ph.D. in Entomology from Texas A&M University (TAMU) College Station under the supervision of Drs. Greg Sword and Raul Medina.

Her Ph.D. dissertation used a basic science approach to understand how factors such as ecology & life history traits influence insects such as cotton fleahopper and the sugarcane aphid.

Evidence was found that host plants and microbes, respectively, can influence insect population structure and crop production and that these factors should be considered in pest management programs. As an

undergraduate, she was passionate about conservation biology. Her undergraduate thesis on forest butterflies was “fantastic” because it gave her the chance to spend time outdoors in the lush forests of Ghana- Josephine said.



Working on this butterfly system also gave her the opportunity to work in a molecular ecology lab where she investigated the population genetic structure of three butterfly species in Ghana earning her M.S. degree under the supervision of Dr. Janice Bossart.

Under Rondon’s mentorship at HAREC, she has been able to apply her insect ecology experience and continue to learn more through research and extension activities.

Josephine’s study investigates the effect of Lygus bugs on potatoes; their effect on yield and their role in the epidemiology of purple top disease in potatoes.

Findings from her research suggest that Lygus bugs carry the pathogen that causes purple top disease, but their role in pathogen transmission is still being investigated.

This study allowed her to go out with the IAEP crew to scout for Lygus bugs

on commercial potato fields. She also designed and implemented a field experiment under controlled field conditions and learned “a great deal about potato production.”

Participation in IAEP extension and outreach activities including Field Days, Farm Fairs and Career Days has been part of her experiences at HAREC.



“It has been fun interacting with kids of all ages,” during the Insect-4-Kids program organized by IAEP. “The excitement on a child’s face when they interact with live insects, or see the diversity of insects in our collecting boxes, or learn for the first time, that people like me study insects as a professional will always be a rewarding experience for me.”

When Josephine is not working with insects or talking about insects, she spends her time cooking, baking, and if the mood is right, dancing.

Yes, entomologists can also dance.



Invertebrate Ecology Update

By **Sandra DeBano, Ph.D.**
Associate Professor

We're finishing up a busy year in the Invertebrate Ecology Laboratory. We continue to settle in to our newly remodeled laboratory & are taking full advantage of the increased capacity that comes with it.

David Wooster finished a 6-month laboratory experiment examining aggressive behavior in a crayfish that is currently invading eastern Oregon – the rusty crayfish.



David is seeking to understand why this species is such a good invader by studying its behavior, morphology, and diet. The diet work is the result of a new collaboration with Ken Frost, (OSU HAREC) who is using molecular techniques to identify the types of food found in crayfish guts.

The results of this project can help inform efforts aimed at controlling this noxious species and the resulting damage it does to aquatic ecosystems.

Sandy continues her work with collaborators in the US Forest Service on projects focused on how land management and restoration influences pollinators in riparian areas.

In addition, Sandy is starting a new collaborative project with Scott Lukas (OSU HAREC), Lesley Morris (OSU ANRP-EOU) and The Nature Conservancy on how grazing, fire, and exotic weeds influence native bee populations in the Zumwalt Prairie.

Graduate students Katie Arstingstall & Scott Mitchell successfully finished the first quarter of their master's program and will be coming back to Hermiston over winter break to work on their projects and plan their coming field seasons. Katie received her first grant from the Oregon Zoo's "Future for Wildlife Program" for her work on using metabarcoding techniques to understand which plants are most important as food for native bees. Both students also submitted abstracts for presentations at the Oregon Chapter of the Wildlife Society in Portland this year.

Sandy enjoyed putting together a session focused on pollinators at Farm Fair this year – the morning session included talks on honey bees, managed solitary bees, & native bees, & provided lots of timely information on ways to avoid bee poisoning and to enhance pollinator habitat on the farm and in the garden.



In addition, Andony Melathopoulos (OSU Extension) and Sarah Kincaid (ODA) offered an interactive afternoon

workshop on native bees that had local community members actively engaged in learning about native bees, including how to identify and monitor them.

Testing that Students Love - Potato Tasting

By **Angie Treadwell, RD, LD**
SNAP-Ed Program Coordinator



Stan Li, Bill Brewer, Angie Treadwell, Alissa Daltoso, Diana Romero, Sagar Sathuvalli, Moises Aguilar.

HAREC and SNAP-Ed staff were joined by Bill Brewer, Executive Director of the Oregon Potato Commission, at Windy River Elementary on December 12, 2017.

During their holiday feast, students and their families had a chance to sample Yukon Gold and Purple Pelisse potatoes grown at HAREC.

The potatoes were prepared using the Food Hero Potato Pals recipe. Students completed surveys to tell us about the taste and appearance of the two potato varieties. Results were very positive!

Interactions like these are providing opportunities to share information about nutrition and agriculture within our local communities. We are grateful to our local schools for welcoming us.

Check out the recipe:
<http://foodhero.org/recipes/potato-pals>

Need answers?

We have great online resources available.

Ask an Expert: <http://extension.oregonstate.edu/extension-ask-an-expert>

OSU Extension Publications: <https://catalog.extension.oregonstate.edu/>

Please Like, share & follow our Facebook™ page.

<https://www.facebook.com/OSU.HAREC/>

Contact our office to receive e-mails for field days & other events of interest.



January		
1st	New Year's Day - Office Closed	
1st	Hermiston Resolution Run, 10 AM	Hermiston Riverfront Park
4th	Oregon Statewide Potato Breeding Meeting Contact: Sagar Sathuvalli, 541-567-6337	Corvallis, OSU Crop & Soil Science
9th	Core Pesticide Safety Training Contact: Clive Kaiser, 541-938-5597	Milton-Freewater
15th	Martin Luther King Jr Day - Office Closed	
22nd	Tri-State Potato Meeting Contact: Sagar Sathuvalli, 541-567-6337	Kennewick, Three Rivers Convention Ctr
23rd - 25th	Washington Oregon Potato Conference Conact: http://www.potatoconference.com	Kennewick, Three Rivers Convention Ctr
February		
12th - 23rd	OSU Sea Grant Festival	Statewide Events
13th	Private Applicator Pesticide Pre-Exam Training Contact: HAREC Office 541-567-8321	Hermiston, HAREC - BMCC PIAC
Coming		
April 9-20	OSU150 Sun Grant Festival	

OSU Master Gardener Training Offered for 2018

Applications are now being accepted for the Umatilla County Master Gardener training sessions. Deadline: January 10th, 2018. Courses Dates: January 10th - March 24th. Course Fee: \$145.00, Payable to OSU Extension Service
Contact: Colleen Sanders, 541-278-5403
E-mail: colleen.sanders@oregonstate.edu



<http://oregonstate.edu/150/app>
Download the OSU150 App and earn points by taking quizzes, going on a scavenger hunt and to discover more about OSU.

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*A Quarterly Publication
Hermiston Agricultural Research & Extension Center
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**Hermiston Agricultural Research & Extension Center
Mission Statement**

To advance scientific knowledge in agriculture, natural resources and biofortified crops, and support and educate our diverse local clientele and community in the areas of irrigated agriculture, plant breeding, natural resources, human health and youth development.



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Hermiston Agricultural
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