

Newsletter

November-December 2021



Garfield
County

WASHINGTON STATE UNIVERSITY
EXTENSION



Welcome to the WSU Garfield County Extension Newsletter!

This is an electronic newsletter highlighting events and topics of interest to residents of Garfield County and the surrounding area. This newsletter can also be viewed on our website: <https://extension.wsu.edu/Garfield/>

Do you have an event or subject you would like added to our newsletter or website? Would you like to be removed from our Extension Newsletter email list?

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(closed 12:00-1:00)

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Identification of *Brucella* protein Could Lead to Infection Treatment

By Josh Babcock, College of Veterinary Medicine
October 14, 2021

<https://news.wsu.edu/news/2021/10/14/>

The bacteria that causes brucellosis needs to steal food from their hosts' bodies to survive, and Washington State University researchers may have identified an accomplice: a protein in the host cell.

Brucellosis is one of the world's most widespread zoonotic diseases, meaning it can transfer from animals to humans, though it is rare in the United States. Its symptoms include fever, weight loss, and joint pain, and in severe cases, it can cause central nervous system and heart inflammation. While antibiotics can treat brucellosis, relapses are common, and due to the threat of antibiotic resistance, researchers are looking for new, affordable control strategies.

According to the study published in The EMBO Journal, a recently characterized protein – BspF – appears to reorganize a pathway that is believed to provide nutrients required for the bacteria to grow inside the host cell. The finding could lead to interventions to mitigate the bacterial growth.

“Once inside the cell the bacteria need to acquire food from somewhere, and the cell is not a supermarket; everything is hidden in certain ways,” said Professor Jean Celli of WSU's Paul G. Allen School for Global Health in the College of Veterinary Medicine. “We believe this particular protein is manipulating specific cell functions to steal nutrients required for the bacteria to grow and multiply.”

Brucellosis, also known as Mediterranean fever, is caused by the bacterium *Brucella abortus*. Endemic in Africa, Asia, Europe, and South America, brucellosis can be spread through unpasteurized dairy products and close animal contact, cattle serving as the primary host.

Much of the research the past three years was led by Elizabeth Borghesan, a graduate student in the Celli lab, but the work on this protein was a nine-year endeavor.

In WSU's biosafety level 3 laboratory, Borghesan took immune cells, also known as macrophages, from live mice. Then, to explore the function of different proteins, she cultured those cells and infected them with different strains of *Brucella* that were



missing specific proteins. A strain of *Brucella* missing no proteins served as a control.

Using a reliable method to delete genes, Borghesan and her colleagues directly removed the gene coding for the protein and used fluorescence microscopy to determine the absent protein's function.

Without the protein, bacterial growth was significantly slowed.

“When we removed the protein, we initially saw that the bacteria were unable to replicate as well as when the protein was present. Growth was not completely inhibited, but it definitely grew slower or was unable to grow as well as the control,” Borghesan said.

The protein is the second of some 12 bacterial proteins that have been discovered in the Celli lab. The first protein was found to be essential in creating a “nest” for the bacterium once inside the cell.

Celli, who has dedicated his entire career to *Brucella*, wishes he could see all the known proteins' functions characterized in his lifetime.

He said if the functions of the different proteins were known, then researchers could genetically target a select few and disrupt the bacterium's lifecycle inside the cell.

“The bacterium needs the cell to replicate, but if you can prevent the bacteria from using the cell, then you have a way to counteract and prevent that replication,” Celli said. “And if you can do that, you should be able to mitigate the disease.”

2021 WSU and UI Integrated Pest Management Update

Friday, December 10, 2021 from 9 am to Noon, and 1:00-3:00 pm

(5 WA, ID and OR Pesticide License Re-certification Credits have been applied for, 1 credit per lesson)

- **Invasive & Noxious Weed Management Obligations & Strategies for Landowners**, Doug Finkelnberg, University of Idaho, Cropping Systems Extension Educator
- **Management of Pulse Crop Diseases in the Pacific Northwest**, Dr. Lyndon Porter, WSU Prosser
- **Identification and Management of Insect Pests on the Farm - Legumes, Wheat and Canola**, Dale Whaley, Integrated Weed Management/ Agriculture, WSU Douglas County Extension
- **Asian Giant Hornets & Cereal Aphids**, Dr. Arash Rashed, University of Idaho Entomologist
- **Identification and Management of Wheat Diseases**, Dr. Tim Murray, WSU Extension Plant Pathologist

2 Ways to participate:

In person attendance at the Clarkston Campus of WWCC, 1470 Bridge Street in Clarkston. We will be meeting in the Lecture Hall. Masks required. No food allowed.

OR Virtual Participating using Zoom

ZOOM LINK: <https://wsu.zoom.us/j/93979992050>

Please see the link below to set up a Zoom account if you do not have one: <https://confluence.esg.wsu.edu/display/KB/Zoom+-+Joining+Meetings+and+Best+Practices>

No pre-registration required.

Garfield County Weed Board Meeting

Thursday , December 9th., 2021 @ 1:30

Meeting will be held in the county commissioners room in the Garfield County Court House. Cost share for 2021 and the budget for 2022 will be discussed.

PNW Winter Wheat Production Down 40%, Lowest Since 1991

From the National Agricultural Statistics Service
Wheat Life: November 2021

Washington planted 1.75 Million acres of winter wheat for 2021, down 50,000 acres from 2020. Harvested area, at 1.69 million acres, was down 60,000 acres from 2020. Winter wheat production in Washington was 71 million bushels, down 47% from last year with yield estimated at 42 bushels per acre.

Idaho planted 710,000 acres of winter wheat for 2021, down 10,000 acres from 2020. Harvested area, at 640,000 acres, was down 20,000 acres from 2020. Winter Wheat production in Idaho was 45.4 million bushels, down 32% from last year with yield estimated at 71 bushels per acre, down 30 bushels per acre from 2020. Oregon planted 720,000 acres of winter wheat for 2021, down 20,000 acres from 2020. Winter wheat production in Oregon was 31.7 million bushels, down 32% from last year with yield estimated at 45 bushels per acre, down 19 bushels per acre from 2020.

Washington planted 580,000 acres of spring wheat in 2021, up 30,000 acre from 2020. Harvested area, at 540,000 acres, was down 5,000 acres from 2020. Spring wheat production in Washington was 16.2 million bushels, down 51% from last year with yield estimated at 30 bushels per acre, down 31 bushels per acre from 2020. Idaho planted 510,000 acres of spring wheat in 2021, unchanged from 2020. Harvested area, at 485,000 acres, was down 10,000 acres from 2020. Spring wheat production in Idaho was 30.6 million bushels, down 32% from last year with yield estimated at 63 bushels per acre, down 28 bushels per acre from 2020.



3 SIMPLE REMEDIES FOR A STRESSED-OUT MIND

<https://healthy.kaiserpermanente.org/washington/health-wellness/mental-health/tools-resources/stress-management/3-stress-remedies>

When you're stressed out, it's difficult to stay open to ideas that might help make things better. Here are three simple ways to immediately slow a stress reaction and feel more calm and focused so you can think straight.

1) Slow down. Literally. Whatever you're doing—walking, talking, typing, even driving—start doing it at a slower pace. Brain activity copies what the body is doing, so if you move slower, your mind starts to move slightly slower, too, and the flurry of stressed-out thoughts start to calm down.

2) Soften your body. The body tenses up during stress. You often don't notice it happening, but that's how you end up with tight, achy shoulders or a stiff neck at the end of a hard day. Take moments throughout your day to actively soften your body—adjust the way you're standing or sitting, move around a bit, stretch your arms overhead or bend and sway. If you're slouching, try sitting up straight. Stretch your chest. Roll your shoulders and your head.

3) Be mindful of a simple task. Any simple task. One thing we know about the way the brain works, is that when you focus one thing at a time, you can't also be thinking about all the other things worrying you. Try focusing on any one thing: washing the dishes, eating something mindfully, walking slowly, tuning in to a friend talking. Even just a few brief moments of focus will give your stressed brain a break.

CANNING IN WINTER CAN BE A BLAST

Adapted from April Reese Sorrow and Elizabeth L. Address, Ph.D., National Center for Home Food Preservation, https://nchfp.uga.edu/tips/winter/canningwinter_jellyhotsauce.html March 2004

Elizabeth Address is the Director of the Center for Home Food Preservation, which is hosted by the College of Family and Consumer Sciences at the University of Georgia. She said recipes available from the Center using juice concentrates and canned vegetables enable canners to preserve in winter. "There are recipes perfect for people yearning to can in the winter," Address said. "You don't always have to can with fresh fruits and vegetables. Some of those preserves also make nice holiday gifts."

Orange Jelly from Frozen Juice

This recipe calls for frozen concentrated juice and powdered pectin and creates a delightful, flavorful orange jelly for toast or biscuits on dreary winter mornings or late afternoons.

You'll need for five to six half-pint jars:

- 12 oz. concentrated orange juice, thawed
- 2½ cups water
- 4½ cups sugar
- 1 box powdered regular pectin



Begin by sterilizing your canning jars. To sterilize jars, boil empty, washed and rinsed jars for 10 minutes in water. The easiest way to do this is to stand empty jars upright on a rack in a boiling water canner filled with clean water. Keep jars hot until they are filled.

Measure sugar and set aside. Mix juice and water in a saucepan and stir in powdered pectin. Bring to a full boil over high heat, stirring constantly. Once boiling, stir in all sugar. Stir and bring to a full boil that cannot be stirred down. Boil hard for one minute, stirring constantly.

Remove from heat; skim off foam quickly. Pour hot jelly immediately into hot, sterile jars, leaving ¼-inch headspace. Wipe rims of jars with a dampened clean paper towel; adjust two-piece metal canning lids. Process in a boiling water canner for 5 minutes (10 minutes if 1,000- 6,000 ft altitude; 15 minutes if over 6,000 ft). Allow jelly to cool, undisturbed, for 12 to 24 hours and check seals. You can remove screw bands after the food has cooled if the lids are sealed.

Canning can be a fun and delicious activity to add flavor and spice to the winter months. For more winter recipes, specific process times for your altitude or tips on year-round preservation visit the Center for Home Food Preservation Web site at: https://nchfp.uga.edu/how/can7_jam_jelly.html



INFORMATION FROM WSU GARFIELD COUNTY MASTER GARDENER Barb DeHerrera

Gardening On A Shoestring Budget

First, where did the saying “on a shoestring” even originate? And would all our readers even know what it means? On a shoestring to me means getting by with very little money and making do with what resources you have or can find, hopefully for free. [Merriam-Webster](#) online dictionary says this: the term shoestring [is linked] to a small amount of money and to the custom of early, itinerate peddlers. The wandering peddlers would sell or trade small items such as needles, pots, and shoelaces—which was the most popular item. These traveling trinket sellers made a meager income as they charged little for their wares. Some believe this is the origin of the connection of the term "shoestring" to a small amount of money. Further, Merriam-Webster found the first use of the word as an adjective in 1859. Ok, now that we know that, let's see what ideas we can come up with to garden with limited resources, either by necessity or by desire.

We work with our 3rd grade students, one of the ideas we try to get across is to grow something! We will give you the seed, you find anything laying around to plant them in. You do not need a dedicated garden space or even a garden pot, any old, discarded cooking pot or large can will do. Just plant, water, tend it and see what you can produce. Put it in the sun, a window, the front or back steps, just someplace with light will work. We teach them they cannot expect to grow potatoes in a small container, but you can grow a few carrots! You get the idea. Something to get them excited about gardening.

Now for some ideas for you to think about over our La Nina winter. In the past, many homes had a garden spot, during WWII, these were called Victory Gardens. So, if you live in a place that has had a residence since that time, most likely it had a garden spot. Maybe it has been paved over or is now part of a lawn, but you may be able to revive that place. Look for a place in the backyard, maybe the corner. It may be that place that has been cleared of rocks.

Finding cost effective seeds can be a challenge. Many experienced gardeners seed-save; check to see if you can obtain seeds from them. Some communities have a seed-swap, Asotin County Master Gardeners have this every spring, watch for information on this. Check out online seed companies' sale or discount tabs. If you find seed in a discount store, the general rule is, the larger the seed, the longer it may remain viable. For example, carrot seeds are very small, their seeds that are 4-5 years old may have a poor germination rate.

Make your own containers if you have no garden space. Cans, wooden boxes, discarded cooking pots, plastic bottles, or gallon jugs. Make sure to put drain holes in the bottom for drainage. A discarded tire will also serve as a place to grow what you wish. Look at discarded items with gardening in mind. As for my garden, I have some very interesting vertical gardening supports made from odds and ends around the place! A bit of wire and discarded twine holds many small scraps of wood together. And the beans don't seem to care what the support looks like.

Potting soil you can make: one part each of garden soil, sand, and compost or rotted manure (emphasis on rotted; green manure or fresh stuff may be full of active weed seeds). If you have no resources to purchase, maybe ask around for a bit of good soil; look around your living area if you have a house. Sometimes, soil next to a fence line, under a tree, or close to the house can yield some decent quality soil for gardening. You can start your own compost in a tote and some worms, I will let you research that on your own.

There you go, gardening on a shoestring. Don't let lack of resources stop you from gardening, whether it is food or flowers, get started now on planning for a spring growing season!

HAPPY GARDENING!
Your WSU Garfield County Master Gardeners.



**Do you love gardening?
Enjoy sharing your knowledge with others?**

Become a Master Gardener
Asotin, Garfield, Walla Walla, Whitman, and Nez Perce Counties

For information contact:
WSU Asotin County Extension
janice.reed@wsu.edu
509-243-2009



2022 Master Gardener Training Class Begins January 18

- ◆ Tuesdays, 1 to 4 pm
- ◆ In person classes at Clarkston Campus of Walla Walla Community College
1470 Bridge Street, Clarkston, WA
- ◆ Classes also offered via Zoom. In person Zoom locations to be determined.
- ◆ Cost for classes is \$130.
- ◆ Online training course required to become a Master Gardener. Additional fee.

**Please contact your local WSU Extension office for more information
and registration materials.**



For Garfield County Fair Winners

Click Here

Or go to

<https://www.co.garfield.wa.us/fairrodeo>



POMEROY FFA UPDATE



Article by Kyle Kimble & Kristina Knebel

Kendall Dixon was 9th in the Nation with her Agri-science Fair Project on Steer Hair Growth Supplements. Pomeroy FFA had to cancel our trip to the Northern International Livestock Exposition (NILE) due to illness. Although, the Pomeroy FFA members did attend local and State FFA Land Evaluation Career Development Events this fall. The Soils and Land Evaluation CDE helps students gain an understanding of the most basic need for all agricultural pursuits- healthy land on which to grow crops or raise livestock. Participants identify and evaluate soil samples for various indicators, grade plots of land for slope and drainage, and work to determine what type of activity the land would be best suited for. The State contest for these FFA members was held November 3rd in Columbia County. There were 26 teams from around the state that competed in this event. While Pomeroy was not one of the top 8 teams, the members gained a lot of valuable knowledge that they plan to apply in the contests next year.

Above: Kendall Dixon - 9th in Nationals.
Below from Left to Right: Rylan Hays-Carnahan, Natalia Larios, Trace Roberts, Haliee Brewer, Shiloh Williamson, & David Tejero



4-H UPDATE

PARTICIPATION IN 4-H: The main focus of 4-H is to help members acquire life skills such as problem-solving, communication, confidence, independence, resilience, and compassion through learning-by-doing projects and activities. Youth collaborate with adult and teen mentors to complete hands-on projects, which they often exhibit at a local Fair.

4-H Enrollment Information: You must have reached your 8th birthday by October 1, 2021. You may enroll online at [4-H Online](#). Please follow the updated [Family Enrollment Help Guide](#). If you have any further questions, please call the WSU/Garfield County Extension Office, 509-843-3701.

4-H CLUBS: WSU Extension offers projects in nearly any area in which you are interested, including sewing, cooking, crafts, photography, robotics, sheep, goats, dogs, swine, horse, beef, poultry, rabbits and many others.

OUR CURRENT CLUBS AND CONTACTS:

Blue Ribbon Livestock – Tina Warren: 843-3640, jt_warren@msn.com

Creative Kids – Jamie Hames: 208-790-3667, jamielredgerwood@gmail.com

Garfield County Livestock – Sherry Ledgerwood 843-3438, asotin6@gmail.com

Lucky Horse Shoe – Sara Lunsford: 208-413-8167, Sriley442@gmail.com

Pomeroy Country Kids 4-H – BJ Cannon: 843-5014, bcannon@psd.wednet.edu

4-H'ers are...

4X

more likely to give back to their communities

2X

more likely to Make healthier choices

2X

more likely to participate in STEM activities



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Did you know Boutique Diets in Dogs & Heart Disease are Linked?

Adapted article by Dr. Ryan Baumwart & Dr. O. Lynne Nelson, April 30, 2021 for full article visit: <https://hospital.vetmed.wsu.edu/2021/04/30/boutique-diets-and-heart-disease/>

Many dog owners have switched their pets to grain-free, exotic -ingredient, vegetarian, vegan, or home-prepared diets over the past decade. The trend toward these “boutique diets,” however, has coincided with an increase in reports of dogs with dilated cardiomyopathy. Dilated cardiomyopathy is a disease of the heart muscle that results in weakened contractions and poor pumping ability. As the disease progresses, the heart chambers become enlarged, valves may leak, and signs of congestive heart failure develop. While the disease is not always severe enough to cause symptoms, in other cases it can be life-threatening or even fatal. Recent studies have identified differences in blood metabolites of dogs eating some boutique diets compared to standard diets. Dogs with dilated cardiomyopathy that have been eating the diets described above may reverse the condition if it is caught early or if they respond favorably to a change in diet.



If your dog does not have a medical condition requiring alterations in specific dietary ingredients, we recommend feeding a diet made by a well-established manufacturer that contains standard ingredients and has a record of long-term nutritional research. If your dog has been diagnosed with dilated cardiomyopathy and is eating a boutique-type diet, we recommend changing the diet and measuring whole blood and plasma taurine levels. If levels are low, dietary supplements should be added. Echocardiography should be performed in 3, 6, and 12 months to assess for improvement in heart function after diet change on all dogs of the same household eating the non-standard diet. Dogs with medical conditions that requires a non-standard diet, we suggest a diet made by a well-established manufacturer that has undergone extensive Association of American Feed Control Officials (AAFCO) feeding trials. Your veterinarian can help you choose an appropriate diet for your dog’s medical condition.

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Helping You Put Knowledge To Work