

May 2017

Announcements

MAY

3 Soilbourne Wheat Mosaic Virus Plot Tour, Pikes Peak Rd, Walla Walla, 5 p.m. Discussion on biology, identification, disease resistance, and variety blends by OSU and WSU experts. For more information contact Christina Hagerty at 541-278-4396 or christina.hagerty@oregonstate.edu.

8-12 Milton-Freewater Jr. Show, Milton-Freewater Posse Grounds. Support local 4-H & FFA members as they display their talents and efforts. www.mfjrshow.com.



6 Master Gardeners Return to Downtown Farmers' Market, 4th and Main. Market is open through October on Saturdays and Sundays from 9am-1pm. Look for the Master Gardeners' booth on Saturdays to get weekly gardening tips and advice on plant problems.

13-14 Free Tire Recycling, Walla Walla County's Gravel Lot on Tausick Way, Walla Walla (Across from the Sports Complex). Open to Walla Walla County Residents only, must provide proof of residency. Limit of 10 tires per residence. Contact Nina at 524-2616 for additional information.



31 Governor's Summit on Career Connected Learning, 10 a.m. - 1:30 p.m. WWCC Room 2023. Business and community leaders will learn about career-connected learning successes, and participate in a facilitated discussion to create local solutions. Contact Dave Stockdale at dave.stockdale@wwcc.edu information on page 6.

JUNE

6 WSU Horse Heaven Hills Variety Tours, Horse Heaven, 8 a.m. For more information, contact Ryan Higginbotham, 509-641-0549 or <http://variety.wsu.edu>.

11-12 Waitsburg Jr. Show, Waitsburg. Come support local youth as they have the opportunity to compete and show their talents.

21 WSU Variety Tours, Walla Walla (Cereals), 1 p.m. For more information, contact Paul Carter, 509-382-4741 or <http://variety.wsu.edu>.

22 WSU Variety Tours, Dayton (cereals & legumes) Dayton, 8:00 a.m. For more information, contact Paul Carter at 509-382-4741 or visit <http://variety.wsu.edu/>.

JULY

14-15 Northwest Junior Sheep Exposition, Moses Lake WA, Grant County Fairgrounds. Participants learn how to select fast gaining lambs that are heavily muscled and will finish properly. **Entry deadline is May 1 for market lambs and June 15 for breeding and prospect lambs.**

Premium books are entry forms available at: <http://extension.wsu.edu/grant-adams/wp-content/uploads/sites/39/2017/03/NWJsheepexpo2017.pdf>. For more information, contact Sarah Smith at 509-754-2011 or smithsm@wsu.edu.



Updates

STRIPE RUST UPDATE, April 6, 2017

Adapted from Xianming Chen

Stripe Rust is widely occurring in the Pacific Northwest. On April 5, wheat fields in Whitman, Garfield, Columbia, Walla Walla, Benton, Franklin, and Adams counties in Washington and Umatilla County of Oregon were checked for stripe rust. Winter wheat ranged from Feekes 2 to 7. Stripe rust was found in all of these counties when 80% of 70 fields were checked. For most fields, it did not take very long to spot rust on leaves.

Stripe rust is more active in the Walla Walla (Washington) and Pendleton (Umatilla County, Oregon) areas. In our experimental nursery north of Walla Walla, back to March 8, it took quite bit time to find rust in the spreader rows, yesterday we saw rust of 100% incidence, more than 40% severity on low leaves, and appearing on top leaves. Many fields in these areas



have been sprayed with fungicides.

So far, stripe rust is widespread in the Pacific Northwest. Weather conditions will continue to favor stripe rust infection and development in April, and we will have another year of severe epidemic. HTAP resistance is not expected to fully function until night temperatures are consistently above 50°F and day-time temperatures above 65°F. The general recommendations are the same as those made in the previous stripe rust update. For winter wheat, fungicide application at the herbicide application time is needed for fields planted with varieties rated 4 and above in the Seed Buyers Guide. For fields planted with varieties with 1-3 ratings, fungicide application is recommended only if rust is above 5% incidence (not off-type plants). Second application of fungicides may be needed three to four weeks after the first application when active stripe rust pustules start appearing. For spring wheat, resistant varieties should be selected. Fungicide application may be needed if rust appears in the fields.

PROPOSED RULE CHANGES FOR RESTRICTED USE HERBICIDES



The Washington State Department of Agriculture is considering rule changes affecting the use of restricted use herbicides. The possible rule changes were agreed upon by a workgroup consisting of various

agricultural sector representatives and representatives from WSU. The existing rules covering restricted use pesticides are extensive, complex, and confusing. For example, there are over 50 different established areas in Eastern Washington, each with their own restrictions. Some of the existing rules are over 50 years old and lack relevancy in today's agriculture. For example, current rules require nozzles with a minimum orifice diameter, but current nozzle manufacturers and pesticide labels refer to the size droplet spectrum produced by a particular nozzle type at a specific pressure. Current rules also limit spray pressures below that needed by modern nozzle types such as air induction nozzles. The purpose of the proposed changes is primarily to repeal redundant and very outdated rules. The proposed new rules do not impose any additional regulatory requirements and the WSDA does not believe the changes will pose any increased risk to sensitive crops. The WSDA is seeking public comment on the proposed rule changes before filing an official rule-making proposal sometime in the fall of 2017.

[The Preproposal Statement of Inquiry](#) provides details on how interested parties can provide comments on the proposed rule changes to the Washington State Department of Agriculture. [The Explanation of Possible Rule Changes](#) explains the proposed rule changes and why the changes are deemed beneficial. This is a good faith effort to simplify and update rules related to the application of restricted use herbicides. Please consider providing your thoughts on the proposed rule changes to the Washington State Department of Agriculture.

For questions, contact Drew Lyon by phone at 509-335-2961 or by email at drew.lyon@wsu.edu.

Agriculture

TAKE PRECAUTIONS TO AVOID PESTICIDE DRIFT

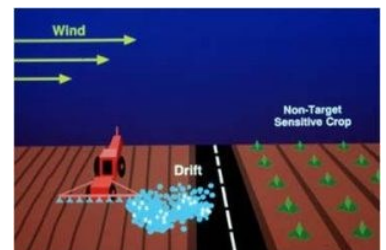
WSDA Pesticide Compliance Services

Every spring pesticide drift incidents affect workers and neighbors in tree fruit growing areas. We are reaching out to you, as a licensed Private Applicator, to seek your help in preventing pesticide drift.

We urge all applicators to follow all pesticide label instructions carefully and in ways that prevent off-target drift to workers, neighbors, or sensitive sites. To ensure pesticides do not drift beyond the intended treatment area, follow these practices:

- Read the label on the pesticides being applied and follow all precautions and restrictions for safe handling, necessary protective equipment, buffers, the effect on crops and more. Be especially diligent near sensitive areas such as highways, homes, schools and other occupied dwellings.

- Properly calibrate equipment according to tree size, shape and time of year. Use proper nozzles, nozzle configuration, proper air and water volumes and pressure to keep the spray on-target.



- Evaluate conditions such as wind speed, wind direction, and temperature. Remember that dead calm conditions when there is no air movement (inversion conditions) is an especially bad time to spray.

- Turn off outward-pointing nozzles at row ends and outer rows during airblast applications.

- Do not direct the spray above trees or vines

during airblast applications (limit the plume).

- Stop applying if conditions change in ways that increase the risk of drift or if anyone approaches the area without proper protection. Within the farm's property boundaries, no one except properly trained and equipped handlers can be in the application exclusion zone (100 feet for airblast applications) during the application.

Though not currently required by law, an additional step has proven to be very helpful in preventing exposure incidents; Before making an application, communicate your spray plans to neighboring farms and scout the areas bordering the target site for unprotected workers or other persons.

Thank you for your attention to following these steps to help prevent pesticide drift.

Health

NATURAL PLANT DEFENSE COULD FIGHT CANCER, PROTECT CROPS

Adapted by Seth Truscott, WSU

A natural defense that helps plants ward off insect predators, discovered at Washington State University, could lead to better crops and new treatments for cancer and Alzheimer's disease.

Sachin Rustgi, adjunct assistant professor at the WSU Department of Crop and Soil Sciences, detailed the interaction of enzymes called proteases, and their inhibitors, along with the role they play in plant health and development, in the latest [Proceedings of the National Academy of Sciences](#). The discovery could pave the way for advances in medicine and agriculture.

"By understanding this relationship, we can regulate it for our health and agricultural needs," Rustgi said. "We can make enzymes available, or trap them when they're not beneficial."

A fine balance

As the building blocks of our bodies, proteins play important roles in plant and animal health. Special enzymes called proteases destroy proteins, and must be carefully controlled to avoid problems like disease and early aging.

Rustgi explored the relationship between a protease called RD21 and its inhibitors, Serpin1 and WSCP, in plants.

Predator defense

"When they first start growing, young plants are quite vulnerable," said Rustgi, who first set out to study seedling defense, working with colleagues at Grenoble Alpes University and Jean Monnet University in France.

They found that when a seedling emerges from soil, inhibitors shut down and protease levels rise. When an

insect tries to eat the plant, the protease attacks its digestive enzymes, causing the insect to seek a different meal.

Proteases inhibitors also influence plant resistance to disease and drought.

"Diseases that kill plants can be avoided by over-expressing these inhibitors," said Rustgi. Proteases can also cause crops such as wheat, barley and corn to mature faster and avoid drought.

Safer drugs for human diseases

Better understanding of protease activity could also affect human health, Rustgi said. The discovery brings insights into cancer progression, and could lead to new therapies for cancer and other diseases.

"These proteins are similar in structure in animals and plants," he said. "Most medicines for cancer and aging diseases are protease inhibitors. Understanding of how these proteins interact could lead to artificial inhibitors, and ultimately, safer medicines."

Rustgi, currently at Clemson University, researched this natural defense system while working at WSU with co-author Diter von Wettstein, R.A. Nilan Distinguished Professor.

Their project was supported in part by the National Institute of Food and Agriculture and the Life Sciences Discovery Fund, established by Washington's Governor and Legislature to foster growth of life sciences.



Researchers explored protease-inhibitor interaction in mouse-ear cress.

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Gardening

PREPARING YOUR GARDEN SOIL

Marianne C. Ophardt, WSU Extension Faculty

Seed companies and garden product marketers have noted that more and more gardeners are growing their own vegetables. While it's still too early to plant most things in the garden, now is a great time to start getting the garden ready for planting.

Gardeners are known for complaining about two things they can't do much about, the weather and their garden soil. Local gardeners are no exception. If we aren't complaining about the wind, then we're complaining about the heat, or maybe even the rain in the spring!



When it comes to soils, there's quite a bit of variability in our region. Some gardeners have a silty loam and others like me have a fine sand. If you aren't familiar with these terms, they refer to the texture of the soil and the size of the soil particles. Sandy soil has relatively large

soil particles, silt has small particles, and clay has extremely small soil particles. There are very few clay soils in our region.

The larger the soil particle size, the more easily water enters the soil and the more quickly it dries out. The smaller the particles, the slower water enters and the slower it dries out. Also, the smaller the particles, the greater the soil's ability to retain nutrients. Whatever your soil's texture, you're pretty much stuck with these physical properties. Complaining won't help, but adding organic matter can.

In our shrub-steppe area, there isn't much organic matter in the soil when we first start farming or gardening a piece of land. By adding fresh organic matter, we provide food for soil organisms. These organisms, including bacteria, fungi, insects, and worms, feed on the organic matter. Their feeding activity glues soil particles together. This improves the soil structure, creating a more crumbly soil that is easier to work and one that water enters more easily.

The ideal soil is one that's dark and crumbly soil with good "tilth." Even the very best local gardeners will have a hard time attaining and maintaining this ultimate goal, because organic matter disappears quickly under our arid climate conditions. However, that doesn't mean we shouldn't try!



Organic matter is indeed wonderful stuff. As you get the garden ready to plant in the spring, it's a good time to add organic matter to the soil. Many gardeners add compost to their garden soil in the spring. While compost doesn't provide much food for the soil organisms and contribute to soil tilth, it does help improve soil conditions. Water will enter the soil more easily and you won't have to water as frequently.

Compost is a great way to recycle yard waste and is a good soil amendment, but fresh organic matter is even a better soil builder because the decay organisms are active in the soil. Fall is the best time for adding fresh organic matter to the soil. Two of the most common fresh organic matter sources are herbicide and weed-free grass clippings and fallen leaves. The organisms have all fall, winter and early spring to work on breaking down the organic matter.

There are other sources of organic matter that gardeners might consider incorporating into their garden soil or their compost piles. I'm often asked about adding sawdust, wood chips, moldy straw, and animal bedding mixed with manure. These are called "high carbon" or "brown" materials. The soil microorganisms involved in decay require nitrogen. When you add high carbon materials to the soil, the microorganisms use the available nitrogen in the soil for the decomposition process. This produces a nitrogen deficiency in the soil until the materials are fully broken down. To grow healthy plants, additional sources of nitrogen have to be applied to compensate for the nitrogen deficiency brought about by the high carbon organic matter. Because they break down so slowly and create a problem with nitrogen deficiency, it's best to avoid adding high carbon organic matter to the garden or the compost pile.

Finally, a word to the wise... when adding organic matter to the soil, use no more than one-third by volume. If you spade or till to a depth of six inches, only add a two-inch layer to the top before you mix it in with the soil.



Family Living

PLANT AND EAT A RAINBOW OF VEGETABLES AND FRUITS



Planting season is right around the corner, and it's a great time to plan for eating a rainbow.

"Vegetables and fruits in a rainbow of colors give the nutrients needed for

good health," says Janet Hackert, regional nutrition and health education specialist for University of Missouri Extension.

"Red strawberries will all too soon be blooming and growing," Hackert says. Before we know it, raspberries, tomatoes and watermelons will sprout. All of these provide vitamin C. Tomatoes have the added boost of lycopene, which may reduce the risk of prostate cancer, she says.

Vitamin C helps heal cuts, fight infection, and keep teeth and gums healthy. It also helps our bodies absorb iron better, especially the iron found in other plant sources, like spinach and beans. A half cup of strawberries contains 70 percent of the vitamin C many Americans need in a day, Hackert says, and a quarter of a cantaloupe contains 93 percent. "Also rich in vitamin C are spinach, potatoes, peppers, cabbage, cauliflower and kohlrabi."

Orange, yellow and dark green vegetables and fruits are likely to be rich in vitamin A. "Vitamin A is significant in eye health, especially for helping eyes adjust to the dark," she says. Vitamin A also helps keep hair and skin looking healthy and helps protect against infection. "A small handful of baby carrots or a half cup of carrot sticks has 383 percent of the amount of vitamin A that most Americans need in a day!"

To get more vitamin A in your diet, be sure to include sweet potatoes, pumpkins, yellow squashes, spinach, broccoli and other dark green vegetables, like collard greens and kale, when making your planting decisions or grocery list. These dark green options also offer vitamin K, potassium, lutein and zeaxanthin. Potassium helps maintain a healthy blood pressure and aids in muscle contraction. Lutein and zeaxanthin contribute to healthy eyesight.

Blueberries provide their own set of nutrients,

including vitamins A, C and K, potassium and a wealth of antioxidants that help prevent certain cancers, eye diseases and varicose veins, and may help with diabetes, high cholesterol and Alzheimer's disease.

Purple grapes are one purple option, but it is not the only one. "There are purple varieties of tomatoes, carrots and cabbage, to name just a few," Hackert says.

Add some or all of these tasty and nutritious options to your rainbow garden or on your plate today.



Master Gardeners

PLANT CLINICS & FARMER'S MARKET

Visit the Walla Walla Extension office on Tuesdays and Thursdays from 9:00 to 11:00 a.m. and 2:00 to 4:00 p.m. Bring in your home garden or lawn questions or problems and speak to a Master Gardener. Problem plant samples may be left at any time during office hours and a Master Gardener will look at the specimen during clinic hours and contact the home owner with recommendations.

Master Gardeners will also have a booth at the Downtown Farmer's Market on Saturdays beginning May 6th. Visit with our Master Gardeners and pick up free tip sheets on a variety of gardening topics.



4-H

The annual 4-H Super Saturday was held on March 18th in Saint Patrick's Community Building. Many local volunteers presented workshops on a variety of topics.

April's presentation contest was a great success. More than 100 youth participated in the April 4-H contest. 4-H members will have the opportunity to return for a contest in May to improve their presentations.



Come support the accomplishments of our 4-H youth! On May 8th-14th, 4-H members will be participating in the Milton-Freewater Junior Show and on June 10th-12th they will be exhibiting at the Waitsburg Junior Show.

Family Fitness

DIETARY SUPPLEMENT FACT SHEET

Adapted from Tammy Kliethermes, University of Missouri Extension

What is a dietary supplement?

- Any product intended to supplement the diet, which contains at least one of these ingredients: vitamins, minerals, herbs or other botanicals, amino acids, metabolites or combinations of these ingredients.
- Usually taken in pill, capsule, tablet or liquid form.
- Labeled as “dietary supplement.” Not for use as a meal replacement.



Do I need a dietary supplement?

If any of the below apply to you, ask your physician or registered dietitian about taking a supplement:

- your busy lifestyle keeps you from eating the recommended number of servings from the food groups
- you are on a very low-calorie weight loss diet (1200 calories daily);
- you are elderly and not eating as much as you should;
- you are a strict vegetarian;
- you can't drink milk or eat cheese and yogurt;
- you are a woman of childbearing age who doesn't eat enough fruits, vegetables, beans and grains;
- you are pregnant or lactating.

How are dietary supplements regulated?

Loosely. Under the 1994 Dietary Supplement Health and Education Act (DSHEA):

- Marketers are responsible for making sure that their product is safe, and any claims about their products are true.
- All ingredients must be listed on the label.
- Dietary supplements are not regulated for safety or effectiveness before going to market, and do not need Food and Drug Administration (FDA) approval prior to sale.

Bottom Line:

- Get nutrients from foods first. Foods contain many helpful compounds that are not present in supplements. Besides, who wants to swallow a pill when you can eat delicious, nutritious foods?


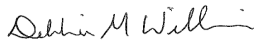
Because dietary supplements are not tested for safety and effectiveness before going to market, some may not contain the ingredients stated on the label.

Announcement

Business Owners Invited to Join Governor's Career Connected Learning Summit May 31

Do you own a small or medium-sized business and want to hire young people to join your team? Maybe you're a large employer and need skilled workers right now? You're encouraged to attend the state's first Summit on Career Connected Learning on May 31. Career connected learning can be anything from apprenticeships and internships to job shadows or business people visiting a local classroom. At the Summit, Governor Jay Inslee, along with business and education leaders will address next steps to provide more Washington young people work experience and real-world skills that can help your business thrive. Join us at one of over 25 regional sites across the state and meet with others in your local area to help young people prepare for key positions you need filled.

The Career Connected Learning Summit will be simultaneously hosted from the Microsoft headquarters and streamed live to regional sites. During the catered lunch, a facilitated discussion will encourage us to explore and make positive changes at the local level. The Regional Summit will be located at **Walla Walla Community College Room 223 on Wednesday, May 31 from 10 a.m. to 1:30 p.m.** Register at: <http://www.washingtonstem.org/GovernorsSummit>.


 Celebrating 100 Years of Extending Knowledge

 Debbie M. Williams
 County Extension Director

Extension programs and employment are available to all without discrimination. Evidence of noncompliance may be reported through your local Extension office.