

Announcements

MARCH

17 4-H & FFA Youth Beef Field Day, Lewiston Livestock Market, 8:00 a.m. – 3:00 p.m. This interactive youth field day provides the latest information on raising beef projects for youth, parents and leaders. Forms are available at: <http://extension.wsu.edu/asotin/wp-content/uploads/sites/17/2018/02/Beef-Field-Day-Flyer-2018.pdf?x64076>. \$8/person includes lunch. For information contact Mark Heitstuman at heitstuman@wsu.edu or 509-243-2009.



24 Super Saturday, Walla Walla, St. Patrick's Community Bldg., 408 West Poplar, 9:00 a.m. – 2:15 p.m. Youth in grades 1-12 are welcome. You do not have to be in 4-H to attend. Pre-registration required. See 4-H section for details.

24 4-H & FFA Youth Swine Field Day, Asotin County Fairgrounds, 8:00 a.m. – 3:00 p.m. Health care, feeding & nutrition, selection, fitting & showing and more. \$8/ person includes lunch. **Pre-registration due by March 16**, forms available at: <http://extension.wsu.edu/asotin/wp-content/uploads/sites/17/2018/02/Swine-Field-Day-Flyer-2018.pdf?x64076>. For more information, contact Mark Heitstuman at heitstuman@wsu.edu or 509-243-2009.

24 Working Forests for Landowners, Columbia County Fairgrounds Youth Building 9 a.m.-4 p.m. Learn to accomplish management goals, protect the health and beauty of their forests, protect financial investments, and reduce risk. \$10/ person or \$20/ family before March 20th. Lunch can be purchased for \$10. More info at <http://forestry.wsu.edu>.



APRIL

3 Palouse Region Agricultural Invasive Species and Exotic Pest Workshop, Pullman, WA. Talks on priority pests significant to the region. Register at: <http://bit.ly/2EKBLil>.

28, 29 April Fools Boer Goat Weekend, Southwest Washington Fairgrounds, Chehalis, WA. 12:00 p.m. **Prospect Wether Jackpot classes** for youth, two sanctioned **ABGA shows**, special Youth



Showmanship Class, and ABGA-registered goat inspection by ABGA judges. Educational seminars & raffle. For more information, <http://www.cascadebga.org>.

Updates

STRIPE RUST UPDATE

Xianming Chen

Based on the weather conditions in November and December 2017, stripe rust in the 2018 wheat growth season will likely be in the low epidemic level range (0-20% yield loss). According to the forecast models, highly susceptible winter wheat varieties would have **6%** yield loss and currently grown varieties would have less than **3%** yield loss. If this forecast is close to the real disease level, the early fungicide application at the time of herbicide application for winter wheat would not be necessary. Based on the past experience, the early prediction made in January is sometimes close to the real situation, but is never better than the prediction in March based on the entire winter weather conditions. Therefore, we will make another prediction in early March. For the entire report go to: <http://irrigatedag.cw.wsu.edu/wp-content/uploads/sites/64/2018/01/2018-Stripe-rust-info.pdf>.

THE 2017 WSHGA AND WSU ALFALFA VARIETY TRIAL IS AVAILABLE

Check out the 2017 Alfalfa Variety Trial Winners at <http://wa-hay.org/wp-content/uploads/2018/01/Variety-Trial-Report-2017-1.pdf>. This year the Washington State Hay Growers Association invested in getting first cut alfalfa quality on all entries, so be sure to check out the last 9 tables for all this information. The value of protein, energy, fiber, fiber quality have all been determined on a per ton as well as per acre for each variety.

Farming & Livestock

TILLAGE: WHEN LESS IS MORE

Adapted from Karen Hills

Though severe erosion can quickly deplete topsoil, rebuilding topsoil is an extremely difficult and slow process, so conserving this resource is imperative. Soil erosion is one of the biggest challenges in agricultural production in the inland Pacific Northwest. Conventional tillage can lead to soil degradation and erosion by wind and water, which can cause concerns for air and water quality, respectively. Conservation tillage—a tillage system which retains residues from the previous crop on the surface, resulting in at least 30% coverage of the soil surface after the planting of the next crop—can *dramatically* reduce soil erosion. It also offers other benefits, such as improvements in soil quality (Figure 1) and reduced fuel use, allowing it to be widely adopted in some parts of the region. There are many types of conservation tillage used in the Pacific Northwest, which offer different levels of protection of the soil, all the way up to no-till, which results in minimal soil disturbance and maximum retention of soil residue. These differences in practices, as well as other factors, have led to variations across the region in how effective (and profitable) conservation tillage has been. Fortunately, a new resource is available that digs into these differences and why they occur.



Figure 1. Two spadesful of soil, showing different levels of soil aggregation, in conventional and reduced tillage. Soil aggregation is one measure of soil quality. (Source: Bista et al. 2017; Photo credit: R. Ghimire)

I had the opportunity to play a role in editing this new resource, [Advances in Dryland Farming in the Inland Pacific Northwest](#). Written by researchers, *Advances* is a synthesis of research completed over the last 15 years in dryland farming systems. It is a resource for producers, agricultural service providers, students and others who may not have the time and access to read and interpret dozens of research studies on each topic themselves.

In the *Advances* chapter on [Conservation Tillage Systems](#), I was fascinated to learn that conservation tillage has succeeded in some areas, yet has been less successful (or less profitable) in others. Lead author Prakriti Bista and her co-authors discuss how the popularity of conservation tillage is aided by government programs, advances in equipment technology, and the development over time of reduced and no-till strategies appropriate for our diverse dryland systems. They also emphasize that an investment in equipment for conservation tillage can be expensive, so producers need to ensure that such an investment will pay off, through some combination of reduced fuel usage, conservation payments, and increased yield. A survey of growers in 33 different counties in Washington, Idaho, and Oregon showed that more than 70% were using no-till or another form of conservation tillage in 2012-2013 (Figure 2), suggesting that it is possible for these practices to pay off.

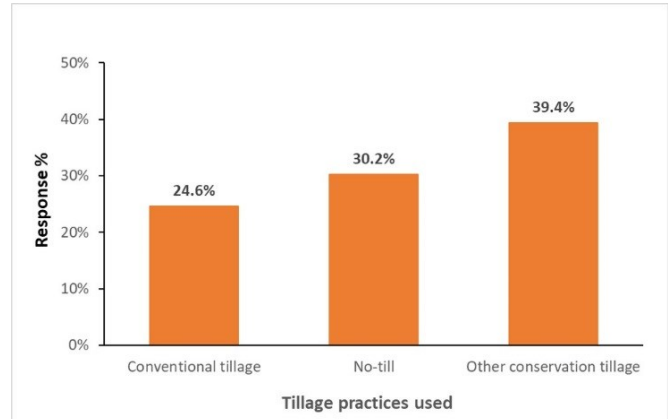


Figure 2: Distribution of tillage practices used by growers in inland Pacific Northwest. Final response rate was 46.2% (900 surveys) with a sampling margin of error of $\pm 3\%$ at the 95% confidence interval. (Modified from REACCH 2015)

Bista and her co-authors made it clear that that conservation tillage systems are as varied as the cropping systems in which they are used, and successful use of them depends on factors such as precipitation zone, crop rotations, equipment, residue management, soil fertility management, support systems and economics. For example, in the higher precipitation areas of the inland Pacific Northwest, the amount of residue on the surface as the result of conservation tillage can be problematic. In these areas, different residue management strategies may need to be implemented along with the reduction in tillage. Examples of commonly used strategies are removing residue or mowing it into smaller pieces that decompose more quickly and are less likely to bind up in planting equipment.

Undercutter fallow is one example of the methods developed in this region that has helped growers in drier areas reduce tillage while maintaining yields

and profitability. Undercutter fallow uses a wide V-blade sweeps which cut under the soil surface (Figure 3), among other things severing narrow vertical channels from the subsoil to the surface that allow water from deeper layers to evaporate. This system is more profitable than conventional tillage in low precipitation areas due to lower costs of fuel and farm labor. When studied in a winter wheat-fallow rotation in a low precipitation zone of the Columbia Plateau, the undercutter method reduced soil lost to wind erosion by 65%, compared to conventionally tilled fields (Sharrat and Feng 2009) and can reduce losses of soil organic matter (Bista et al., 2016).



Figure 3. Undercutter implements have blades on two ranks to allow easy passage through high levels of residue without plugging. (Source: Young and Schillinger 2016)

There are many steps involved in growing a crop, and they are not independent of each other. Bista and her co-authors highlight that other production practices may need to be altered when changing from conventional to conservation tillage. For example, when tillage is reduced, the resulting extra residue on the soil surface may initially make the soil microbes nitrogen-hungry, leading to greater requirements for nitrogen fertilizer, a consideration that could add extra expense to the initial years of conservation tillage.

While work to optimize conservation tillage in different cropping systems continues, it's clear from *Advances* that conservation tillage is already making dramatic impacts on conserving soil in our region.

EARLY PASTURE MANAGEMENT

Debbie M. Williams, WSU Extension Director, Walla Walla County

Late winter, early spring is an important time of the year to check the condition of your pasture. This is a good time to fertilize, mow, harrow, and get rid of winter annual/perennial weeds. Some early work this year can provide big returns throughout the grazing season.

Assess the condition of your pasture. What is the percent of ground covered by desired species, grass/legume mix, and what is the extent of weed problems? Remove any twine, wire, equipment or tools before forage grows up around it.



Have a **Soil Test** done to check for any deficiencies before applying fertilizer in the spring. If done in early February, results will be available in time to apply fertilizer by the end of February. Contact the soil laboratory before collecting the sample to get specific instructions.

Fertilize in February or early March to encourage early growth of forage. Try not to fertilize before heavy rains to reduce runoff. Fertilizing can help grass species out compete some clover species resulting in decreased need for herbicides. If you applying fertilizer twice a year, early fall is the best time to apply phosphorus and potassium because this is when root regrowth and replacement is taking place. Do not use slow release fertilizer because it can be ingested by livestock.

Weed Removal. Spring is an important time to spray weeds. Annuals and some biennials that came up last fall are best sprayed when they are in rosette stage. Spraying before the heavy flush of forage growth can help the herbicide reach the intended target. Remove weeds along fence rows that may seed into your pasture by pulling and disposing or burning. Remember to wait at least three days after mowing or harrowing to spray herbicides. A clean, healthy, actively growing weed is the most susceptible to herbicides. Also wait to mow for at least three days after spraying herbicides to make sure the chemicals have had time to translocate to the roots. If you are heavily overseeding, you may want to delay spraying herbicides so that you don't damage young plants. Always read and follow the label instructions.

If the pasture wasn't harrowed last fall or if animals were overwintered on the pasture, **harrowing or dragging** may be needed in the spring to break up manure clumps and flatten mounds of dirt. Breaking up manure piles can expose parasite eggs and larva, helping to decrease their numbers but it also harms beneficial insects. Severe harrowing may damage forage plants as well.



Most grass species will decrease over time leaving more undesirable species and open spaces for weeds to grow. **Overseeding** will be more effective after opening up the soil by harrowing. Severe harrowing increases oxygen and water penetration. Remove animals for at least 6 weeks but for even better results, wait a few months for seedlings to build a better root system before allowing animals to return. Putting animals on a sacrifice area helps provide recovery time for the plants and gives new seedlings a chance to root more deeply.

Consider **reseeding** if there are areas that have a relative low percentage of desired species. If biennial and perennial weeds are abundant, spraying with a weed/grass killer first may be beneficial. Prepare the seedbed and reseed the area with quality, certified seed. Fencing off these areas allows the roots to establish and the ground to firm so that the animals do not pull up the young seedlings when they begin to graze.

Allow grasses to grow a few inches taller than the recommended minimum in the spring before turning animals into pasture. Graze intensely and then **mow** the longer forage to a minimum of 4 inches to knock the weeds down and keep longer grasses from lying over.



Overgrazing will reduce productivity and allow weeds to establish. Allow **recovery time** after grazing and mowing by moving animals into another pasture. Move animals when grass height is 4-6 inches depending on the species of grass. If you are short of pasture, move animals to a sacrifice area or designate a pasture for sacrifice and protect the health of your remaining pastures. Utilize temporary fences to rotate your animals through the pastures.

Time spent on spring pasture management is time well spent for a more productive pasture.

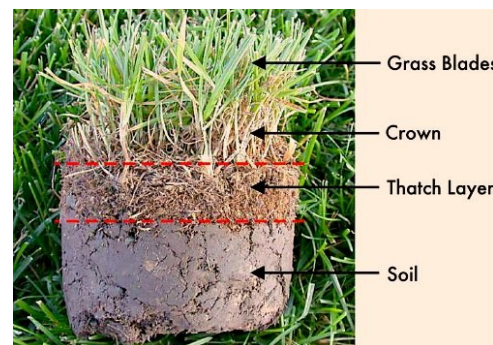
Home & Garden

Should You De-Thatch Your Lawn?

Thatch is a layer of living and dead roots, crowns, and lower shoots that forms between the soil surface and green vegetation. Some thatch is desirable to insulate grass roots from extreme temperatures, to help retain soil moisture, to supply organic matter, to supply habitat for beneficial microbes, and to provide a protective layer that reduces turf injury from traffic.

Thatch is a normal part of any lawn and only becomes harmful when the thatch layer is thicker than one-half inch. When thatch becomes excessive, the lawn may root into the thatch rather than the soil resulting in sod that will peel back at the soil-thatch interface. Thatch does not hold moisture and is less dense than soil. Lawns rooted into thatch are exposed to greater temperature extremes and will not tolerate dry weather or cold temperatures. Excessive thatch also creates a favorable environment for pests and disease and interferes with the movement of air, water, and nutrients into the soil. Damage will appear widespread in the lawn, with a general browning of the entire area. It will be necessary to remove the dead sod before reseeding. Not doing so will result in poor establishment of the new seed.

The type and vigor of the grass in the lawn determine the rate at which thatch accumulates. A thatch-prone bluegrass sod, that is given lots of water and fertilizer, forms thatch more rapidly than other grasses given less care.



Conditions favoring excessive thatch development include:

- heavy nitrogen fertilization application
- excessive and frequent watering
- heavy, wet soils
- alkaline or high pH soils
- soil compaction
- infrequent mowing of tall grass

Prevent excessive thatch by mowing at the proper height, using a balanced fertilizer at recommended intervals, and by watering infrequently and to a depth of 6 inches. Bluegrass lawns should be cut at a height of 2-3 inches. Don't cut more than 1/3 of the grass blade off at any mowing. Despite popular belief, short grass clippings dropped on the lawn after mowing are not the cause of thatch buildup.

Early spring, when grass is still partially dormant, is the best time for thatch removal, particularly if large amounts need to be removed. Thatch should never be removed during the hottest periods of the year in July or August.

Power rakes, rotary mower attachments, or other mechanically driven thatch machines are superior to hand rakes. Operate thatch machines across the turf in two opposite directions. Remove loosened material before changing directions. After thatch has been removed from the lawn, mow immediately at the recommended mowing height. When properly thatched, lawn grasses recover quickly.

Food Safety

KEEPING FOOD SAFE, WASHING HANDS KEY TO REDUCING FOODBORNE ILLNESSES

Adapted from Tammy Roberts, University of Missouri

Everyone is at risk for foodborne illness or food poisoning when large amounts of bacteria multiply and make it into our bodies.

“Bacteria are everywhere. They can live on your skin, under your fingernails, on pets, and, of course, on food. Most people don’t have to worry about harmful bacteria in small amounts because our bodies can manage it. But under the right conditions, bacteria can double in number every 20 to 30 minutes,” said Tammy Roberts, a nutrition and health education specialist with University of Missouri Extension.

That means it is our job to keep bacteria from multiplying.



“We can lessen our chances of having foodborne illness if we wash our hands often, keep raw meats and ready-to-eat foods separate, cook to proper temperatures and keep the refrigerator set at 40 degrees F or below,” said Roberts.

The Center for Disease Control (CDC) said nearly half of all foodborne illness could be prevented with proper hand washing. Washing your hands with soap and water before handling food can assure you are not spreading bacteria to your food, said Roberts.

According to Roberts, bacteria love foods with protein — meat, poultry, fish, eggs and milk. These foods require special handling so bacteria are not

allowed to grow. The first rule is to never thaw meat on the kitchen counter. The outside of the meat thaws first and although the inside is still thawing, the outside can reach 40 degrees or higher and grow bacteria.

“Make sure to put meat in the freezer or refrigerator immediately after you get home and use meat in the refrigerator promptly. The juice from meat also contains bacteria. If it drips onto other foods, it can contaminate those foods and make them unsafe,” said Roberts.

In order to kill the bacteria, meat must be cooked to an internal temperature of 160 degrees. The use of a meat thermometer is recommended to assure meat is cooked safely. It is also important to make sure the refrigerator is keeping food under 40 degrees. In the refrigerator, bacteria can still multiply, but at slow rates. In the freezer, bacteria growth stops but starts again once temperatures reach 40 degrees and above.

“You cannot smell the bacteria in foods that make you sick. When a food is spoiled by a microorganism, it causes the food to smell. The bacteria that cause foodborne illness can’t be detected by looking at the food or smelling it. So, when in doubt, throw it out,” said Roberts.



Financial Fitness

BIG TAX REFUNDS CAN COST YOU

Adapted from Sandra McKinnon, University of Missouri Extension

According to recently released data, the IRS has processed 128.8 million tax returns submitted in 2017 so far, and has issued more than 97 million refunds. The average taxpayer who received a refund got \$2,763, an increase of roughly 2% over last year. The average refund in 2016 was around \$2620 in the state of Washington. These numbers are expected to increase this year.

However, that tax refund may not be cause for celebration. A refund means that you paid too much in taxes during the year. In case you didn’t notice, Uncle Sam didn’t pay you any interest while holding your extra money either. To many people a refund is “found” money or a forced savings plan. But, if you get a tax refund, you have been giving



the government an interest-free loan. Some people won't even do that for their relatives.

A tax refund is money you earned and could have had throughout the year instead. For example, say you receive a \$2,000 refund. You can adjust your withholding and have an extra \$166.66 each month to spend, set aside for emergencies, invest, or pay down debt.

If you got a refund over \$500 or owed more than 10% of your total tax bill, consider adjusting your withholding. Most taxpayers can make adjustments by modifying the number of allowances claimed on their W-4 (the form you file with your employer when you begin employment). Most people fill it out and never see or think about it again. You can change the number of allowances you claim on the W-4 at any time, which alters the amount of taxes withheld from each paycheck. The more allowances you

claim, the less tax is withheld. Try to have at least 90 percent of what you think you'll owe for a year withheld. The W-4 worksheet helps you do that.

According to Dr. Mark Oleson, former Director of the Office for Financial Success at the University of Missouri, there are three easy steps to adjust your withholding:

STEP 1 – Anticipate changes.

Anything that lowers your tax bill (tax credits, exemptions, deductions, etc.) can be considered in your allowance calculation. Did you get married? Divorced? Have a child? Purchase a new home? Refinance a current mortgage? Earn more (or less) than last year? Start paying off student loans? Suffer capital losses? Ask yourself questions to help you decide whether it makes sense to change the number of allowances--no matter how big your refund was this year. Why? Your situation may be different in the coming year.

STEP 2 – Use a withholding calculator.

The IRS has a tax withholding calculator to help determine how much is going to be withheld: <https://www.irs.gov/individuals/irs-withholding-calculator>. IRS Publication 505, Tax Withholding and Estimated Tax: <https://www.irs.gov/publications/p505> contains the necessary worksheets and instructions to do the calculations on your own. You can use them to do tax planning and project future withholdings and changes to your Federal W-4.

STEP 3 – Take action.

If altering your W-4 would help you, do it! You can simply download a new W-4 (<http://www.irs.gov/pub/irs-pdf/fw4.pdf>), fill it out and take it to your human resource office.

4-H

SUPER SATURDAY

Walla Walla County 4-H will be hosting our annual Community Super Saturday Program on March 24th, 2018 from 9 am to 2:15 pm. Join us for a day of fun and hands-on educational workshops for youth in grades 1–12. Open to all youth including non 4-H. Youth will have the opportunity to choose from a variety of classes including robotics, aeronautics, community service, food science, teen leadership, and more.



Pre-registration and a fee of \$5 per person are required. Youth scholarships are available in case of financial hardship. Some classes have age restrictions. Class sizes are limited and fill up on a first come (paid), first enrolled basis. Register early! For more information, stop by the WSU Extension office, visit <http://extension.wsu.edu/wallawalla/> or call WSU Extension at 524-2685, or email mowens@wsu.edu.

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