



## Announcements

### MARCH

**2,3 Pre-License Pesticide Training**, Colfax, WA McGregor Company, 8:00 a.m. to 4:30 p.m. You must pre-register at least 7 days prior to the courses. Enroll at [http://events.SignUp4.com/Exam\\_Enroll](http://events.SignUp4.com/Exam_Enroll). For directions, training and agendas, visit [pep.wsu.edu](http://pep.wsu.edu); for registration questions call 509-335-2830 or [pest@wsu.edu](mailto:pest@wsu.edu); license information at WSDA 877-301-4555.

**10 WATER RIGHTS & POLICIES FOR AGRICULTURISTS & WINERIES** 8:30 A.M.—12:15 P.M. and **WATER RIGHTS & WELLS FOR RURAL HOMES** 7-9 P.M. ,Water & Environmental Center WWCC. Two free programs on water rights and policies-one for rural homeowners and another for agriculturists and wineries. Both programs will feature presentations by experts from the Washington State Department of Ecology, Walla Walla Watershed Management Partnership, Water Rights Solutions, and the WWCC Water & Environmental Center. For more information contact Dave Stockdale at (509) 524-5193 or [dave.stockdale@wwcc.edu](mailto:dave.stockdale@wwcc.edu), or Chris Hyland at (509) 524-5217 or [chris.hyland@wwcc.edu](mailto:chris.hyland@wwcc.edu).



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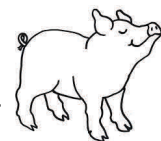
**12 4-H & FFA Youth Beef Field Day**, Lewiston Livestock Market, 8:00 a.m. – 3:00 p.m. This interactive youth field day provides the latest information on raising beef projects for youth, parents and leaders. **Pre-registration due by March 4th**, forms available at: <http://ext100.wsu.edu/asotin/wp-content/uploads/sites/13/2014/02/Beef-Field-Day-2016-Flyer-and-Registration.pdf>. \$7/person includes lunch. For information contact Mark Heitstuman at [heitstuman@wsu.edu](mailto:heitstuman@wsu.edu) or 509-243-2009.



**12 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.



**26 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. \$7/ person includes lunch. **Pre-registration due by March 18**, forms available at: <http://ext100.wsu.edu/asotin/wp-content/uploads/sites/13/2014/02/Swine-Field-Day-2016-Flyer-and-Registration.pdf>. For more information, contact Mark Heitstuman at [heitstuman@wsu.edu](mailto:heitstuman@wsu.edu) or 509-243-2009.



**19 Women in Agriculture**, Walla Walla County Legislative Building, 314 W. Main, Walla Walla, 8:30 a.m. – 3:30 p.m. Successful women farmers will inspire you with ways to power up your communications and your farm. Visit [www.WomenInAg.wsu.edu](http://www.WomenInAg.wsu.edu) for more information.



### APRIL

**2-3 April Fools Boer Goat Weekend**, Clark County Event Center, Ridgefield, WA. 12:00 p.m.



**Prospect Wether Jackpot classes** for youth, two sanctioned **ABGA shows**, special **group classes** for fun, and ABGA-registered goat inspection by ABGA judges. Educational seminars & raffle. For more information, <http://www.cascadebga.org>.

**15-16 Cattlemen's Boot Camp, Kennewick's Benton County Fairgrounds.** In an effort to help cattle producers recover and keep their businesses strong, WSU animal scientists and Extension researchers, in partnership with the American Angus Association, will share the latest science-based strategies. Additional information and registration can be found at: <http://www.angusonline.org/event/bootcampmain.aspx>. Registration **deadline** is **March 1st**, cost is \$75.



# Updates

## First Forecast of Stripe Rust for 2016 and 2015 Fungicide and Variety Yield Loss Tests

Adapted from Xianming Chen, January 11, 2016

### First forecast for 2016

The current forecast is that highly susceptible winter wheat varieties would have about **30%** yield loss, in the middle of moderate epidemic range (20-40% yield loss). Based on this forecast, currently grown varieties would have 0 to 15% yield loss, depending



upon the level of susceptibility; and early fungicide application at the time of herbicide application time for winter wheat is generally unnecessary. This forecast is based on the November and December temperatures, and is only for the wheat areas in eastern Pacific Northwest. In early March, we will make another forecast based on the weather conditions of the entire winter season, which is generally more accurate than the early forecast.

On November 10, 2015, we were checking winter wheat fields in Whitman, Adams, Lincoln, Grant, and Benton counties in Washington. No rust was observed. However, we received stripe rust samples from volunteer wheat and grasses from southern Idaho in later October and early November of the last year.

### Fungicide tests in 2015

In the winter wheat field near Pullman, WA for fungicide testing, stripe rust was first observed on April 28, about two weeks earlier than normal for this area. The first application of fungicide was conducted at jointing stage on May 6 when stripe rust was less than 1% in some plots, and the second application of some treatments or only one application treatments were conducted at boot stage on May 20, 2015 when stripe rust was less than 5%. Stripe rust developed to 80% severity at flowering stage and 100% severity at milk stage in untreated plots. All fungicide treatments significantly reduced stripe rust severity (as measured by relative area under the disease progress curve AUDPC), but had different effectiveness. All fungicide treatments significantly increased test weight and yield except two treatments. The non-treated plots had an average yield of 74.67 bu/A, while the average yields ranged from 80.07 to 100.29 bu/A, increasing by 7.23 to 34.31%.

A similar study was conducted for spring wheat, but no differences in stripe rust severity, test weight, and yield were found between any of the treated and non-treated plots (data not shown), because of low rust and low yields due to the long dry and hot summer.

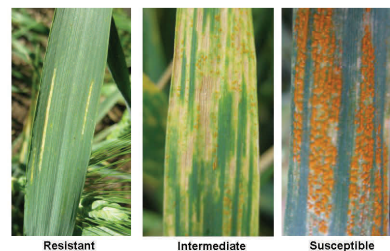
### Stripe rust yield losses of wheat varieties in 2015

Of the 24 winter wheat varieties tested including susceptible check 'PS 279', 5 varieties (PS 279, Xerpha, Tubbs 06, Mary, and ORCF-103) had significant differences in stripe rust severity, none of the varieties had significant differences in test weight, and only one variety (PS 279) had significant differences in yield. Stripe rust caused 28% yield loss on the susceptible check (PS 279) and up to 10% yield losses on commercially grown varieties. Under such level of stripe rust epidemic, only the susceptible check was rated greater than 1, for which fungicide application was needed. All commercial varieties were rated 1, and no fungicide application was needed.

The data can be used to select stripe rust resistant varieties to plant and to determine if fungicide application is needed for a variety based on the relative yield loss and potential epidemic level. The current forecasted epidemic level (30% yield loss on susceptible varieties) for 2016 is about the yield loss level for susceptible varieties that occurred in 2015. Therefore, fungicide application will be generally unnecessary for winter wheat varieties. Please note that the field was only sprayed once in early May, and stripe rust was not completely controlled by the one-time early application of fungicide. The yield loss could be under estimated for the susceptible check.

In the spring wheat variety nursery, stripe rust did not develop to a uniform and adequate level, and no significant differences in stripe rust severity, test weight, and yield were observed (data not shown).

Stripe Rust Reactions



POSTMASTER send address changes to:  
**WSU EXTENSION**  
**328 WEST POPLAR**  
**WALLA WALLA, WA 99362**

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## Farming & Livestock

### DEVELOPING TECHNOLOGIES THAT WILL CHANGE AGRICULTURE - Adapted from WSU CAHNRS web article

*Farming of the future will be data-driven, and Washington State University is helping shape that future.*

As the world population grows and demands on our natural resources increase, producing more food more efficiently is a top global priority. Converging that need with advancements in robotics, sensors, satellites and data analysis puts agriculture into [The Internet of Things](#) – a world connected by sensors and data processing that leads to more informed decision making. Applying these technologies to farming, often referred to as precision agriculture or agtech, will help farmers produce more crops with more efficient use of land, water and fertilizer.

While the potential of these new technologies is exciting, a lot of work still needs to be done to customize them to farmers' needs, and train the future generation in this new data-driven, mechanized agricultural era. WSU plays a big role in tackling that need, from preparing graduates to work in this emerging market to developing technologies and launching companies that match farmer's needs. WSU's Office of Economic Development is producing a mini-blog series to highlight WSU's role in the regional economic development that results from helping industries advance.

To start, here are a few examples of the technologies currently in development at [WSU's Center for Precision and Automated Agricultural Systems](#), a long-established research and extension center that engages with local farmers, growers and businesses to validate products through research trials, and engineer new technologies and processes.

#### Gathering detailed crop data for more informed decision-making

Currently, farmers and plant breeders have to walk through acres of fields to manually inspect and monitor crop health. WSU researchers combine the power of high-tech sensor and camera systems with mechanized platforms to detect plant health characteristics more quickly and accurately than the human eye. Dr. Sindhuja Sankaran and her

team are in the early development of this technology which could get new, hardier plant varieties to farmers faster, help farmers detect issues like disease earlier, and monitor the quality of fruit once it is in storage. So far, they have tested the technology

in [vineyards](#), and [wheat fields](#), using a range of platforms from tractors to unmanned aerial systems (UAVs).

**Contact:** Sindhuja Sankaran, [sindhuja.sankaran@wsu.edu](mailto:sindhuja.sankaran@wsu.edu), 509-335-8828.



View of vineyards from the new Center for Precision Agriculture and Automated Systems in Prosser.

#### Water crops more efficiently with an irrigation app

An app developed by WSU engineers and agriculture specialists to help manage irrigation systems is helping farmers in Washington and 10 other states save water and energy. The app, [Irrigation Scheduler Mobile](#), uses data from [AgWeatherNet](#), the robust weather monitoring system developed by WSU researchers, to help farmers determine when and how much their crops need watering. The digital tool adds convenience to farmer's daily tasks, while also conserving water used on the farm.

**Contact for irrigation app:** Troy Peters, [troy.peters@wsu.edu](mailto:troy.peters@wsu.edu), (509) 786-9247

**Contact for AgWeatherNet:** Glenn Hoogenboom, [gerrit.hoogenboom@wsu.edu](mailto:gerrit.hoogenboom@wsu.edu), 509-786-9371 (Agweathernet)



Robotic apple picker

#### Robot Apple Picker

WSU researchers are developing a robot that is expected to pick apples with the gentleness and speed of a human hand. While mechanical harvesting is already

implemented in fruit crops destined for the processing market, apples for fresh market prove a greater challenge because they are easily bruised and time-intensive to pick. As agriculture's labor workforce continues to decline, mechanizing the harvesting process will become increasingly important. The prototype in development at WSU could become a multi-armed robot that works alongside people in the orchard to pick apples faster with less labor required. **Contact:** Dr. Manjo Karkee, [manoj.karkee@wsu.edu](mailto:manoj.karkee@wsu.edu).

## The Shake and Catch



WSU researchers are also developing robotic arms that can [shake branches and release cherries](#) to cushioned catching

surfaces waiting below. The robotic arms have small cameras, which have been programmed to identify branches to shake. The method is designed for harvesting stemless cherries. Researchers are also designing and testing possibilities for [harvesting apples](#) with this method. Various shake and catch prototypes have been evaluated in the field over the last two years and have shown promise for certain apple cultivars.

**Contact:** Matt Whiting, [mdwhiting@wsu.edu](mailto:mdwhiting@wsu.edu).

## The bin dog, orchardists' mechanical best friend

The bin dog is a robotic, self-propelled fruit bin carrier that will reduce labor requirements and maximize worker productivity. Preliminary research demonstrates that fruit picking could be improved by 50% if the collection bins within harvesting sites could be better managed. The intelligent bin-management system being developed at WSU places collecting bins in the fruit tree orchard, a process that currently requires a human-powered tractor.

**Contact:** Qin Zhang, [qinzhang@wsu.edu](mailto:qinzhang@wsu.edu).

## Home & Garden

### PRUNING SHADE TREES

Adapted from Colorado State Plant Talk

If a tree was planted properly in the best location, it should need little or no pruning. However, trees do not always grow as we imagined them to grow.

Perhaps a branch is rubbing the house, or two trees grew wider than expected, and now the branches hit each other.



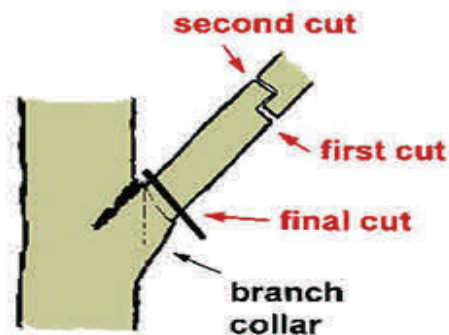
Pruning large trees is a safety issue, so hiring a certified arborist may be best way to deal with that cottonwood that overwhelms your backyard – and the neighbors' yards. Look for local arborists at the International Society of Arboriculture (ISA) at [www.isa-arbor.com](http://www.isa-arbor.com).

**When to prune trees:** light pruning to remove a few small branches can be done at any time. More extensive pruning should be done in late winter/early spring, unless you have a sappy tree, like maples or fruit trees. Often it is necessary to prune trees when they are fully leafed out, so you can see where and how much to cut.

Most trees can be pruned at any time of the year. Some exceptions are American elms and crabapples which should be pruned in the winter to abate disease spread. Aspen, silver maples, birch and walnut trees exude sap if pruned in the later winter or early spring, but this will not harm the tree.

### Why prune?

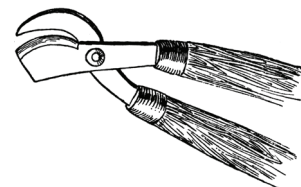
Pruning can be thought of as cleaning – broken, dead or diseased branches, and those touching the ground, should be



removed. Removing diseased branches can prevent further spread of disease. Overlapping or rubbing branches can introduce infection, so one or both should be removed. It is important to keep branches away from the sidewalk and street, where they are hazards. Weak and soft-wooded trees, like maples, should be thinned periodically to keep snow from breaking the branches and causing major damage.

**How to prune:** When pruning trees, be sure to use the proper tools, and be sure that they are all in good condition. Hand pruners are useful for branches less than one-half an inch thick. Loppers should be used for branches one to one-and-one-half inches in diameter. For limbs up to 20 to 30 feet high, use pole pruners or extension saws. Hand saws are popular, and can be useful for many different plants. Never remove more than one-third of a tree canopy during one season. Dead and dying wood can always be removed, but do not prune too much of the live wood.

Use extreme care when pruning with a power chain saw. Avoid power tools not specifically designed for pruning. Consider professional help for pruning larger trees.



# Family Living

## RAISING KIND KIDS

Adapted by Kim Leon, Ph.D., University of Missouri Extension

Encouraging kindness is an important responsibility for all adults who care for children. You can help children show kindness toward others and experience the positive feelings that grow out of kind and caring behavior.



- Set a good example. Children learn constantly from adults' words and actions.
- Even with your busy schedule, you can involve children in acts of kindness. By helping an elderly neighbor or giving canned goods to a food bank, you can demonstrate your concern for others.
- Explain to children why you want them to engage in kind behavior. Children are more likely to comply with adults' wishes when they hear a reasonable and understandable explanation.
- To be an effective adult role model, you must match your words with your actions. For example, if you compliment someone's new clothes but make fun of the way the clothes look when the person is gone, children receive a powerful message. They learn that saying one thing and doing another is acceptable.
- Expressing appreciation for kind and thoughtful behavior is another way to set a good example for children. By reinforcing children's kind behavior, you are helping them to understand that their kindness makes a positive difference.
- Children need to know that the adults in their lives care about them and others. Children who experience respect and appreciation from adults are more likely to demonstrate caring toward others.

Creating foundations in the early years (birth to age 5):

- Trust: The quality of care you give to infants can greatly influence their later development. If babies learn that the adults around them are kind and dependable, they will learn to trust the world and themselves. When you respond sensitively to babies' needs, they feel valued and important, which builds the foundation of kindness toward others.

- Consistency: If you express consistent expectations of children, they develop predictable views of the world. Be consistent and clear with directions and explanations so children will feel safe in exploring the world and trying new things. If your requests and reasons are inconsistent, children become confused and unsure about what is expected.
- Positive guidance: Young children learn best when they are not frightened or angry. By using guidance based on love and respect, you can help young children become aware of the consequences of their behavior for others. When young children experience consistent and positive guidance, they are more likely to act kindly toward others.



Building bridges between children and others (ages 6 to 12):

- Encourage children to think about others: Many school-age children are able to see the world through another's eyes. By encouraging this ability, you are helping children to reason and think about interpersonal matters. If a school-age child engages in unkind behavior with another child, explain to her or him why the behavior is unacceptable and how this behavior makes the other child feel.
- Create opportunities and express appreciation: During the school years, you can give children more responsibility for being helpful and kind to others. By creating such opportunities for children, you also can tell them how much you appreciate their helpful behavior and how this behavior affects others. This enables children to experience the good feelings that result from being kind to others and may result in them initiating acts of kindness on their own.
- Practice empathy: Empathy is defined as "the ability to identify oneself mentally with a person or thing and so understand his/her feelings or meaning." Empathy also involves connecting with the feelings and needs of things other than people, such as animals and the environment. You can practice empathic behavior and encourage school-age children to do the same. You can show them how empathy can help solve everyday problems.



# Financial Fitness

## HOW TO IMPROVE YOUR FINANCIAL HEALTH

Adapted from Michael Ravenscraft, MS, CPA, Financial Education Specialist, Jefferson County, University of Missouri Extension

Many consider the new year as a chance for renewal, giving us a fresh outlook. Often we are conscious of our physical health and changes we can make physically. In much the same way, we can use this time to focus more on our financial health to determine where our family money is going and why.



After facing one of the deepest recessions in recent history, many of us have a greater appreciation for the value of a dollar. We may realize we can do without some things we thought we needed as we better distinguish between our needs and wants.

Here are some steps to making powerful positive change in our financial lives by looking at what we're doing right — and what we can improve.

1. **Gather information, and then write it down!** When people make a decision to improve their physical health, one of the first things they do is get on the scale. Why? Because they need to know what they currently weigh. Regarding our finances, we also need to know where we stand in our financial lives.
2. **Determine what you own.** Make a list of assets, like bank accounts and investments, along with other items you own.
3. **Write down what you owe and to whom.** This is the starting point, where you are today.
4. **Keep track of what you make, what you spend and where you spend it.** More detail is better. This is your current budget. We all have one; it's just informal. An accurate record of what we're doing is a very powerful tool, so keep track!

Now you're armed with the information to make decisions. Your current budget is like your calorie count. Take a hard look and decide if everything in your spending habits belongs in your long-term plan.

Are you taking on extra debt each month? Is enough going into savings? Do you have a rainy day fund? Do you have a current plan for retirement? Where will the money come from to increase contributions to savings and/or retirement?

It's much easier to make these long-term decisions when you're armed with information about what your resources are and how you're using them. These spending decisions, even if it's just a few dollars a day, can have an enormous impact on your long-term wealth and financial security.

Nobody thinks counting calories is fun or exciting. Yet after weeks and months of keeping track, you love the way you look and feel. The same concept applies to your money. At first it's tough to give up those extras in your budget, but then you see your savings going up and it feels pretty good. So start keeping track, building wealth, and in the long run, you'll love the way you feel!

## 4-H

### SUPER SATURDAY

Walla Walla County 4-H will be hosting our annual Community 4-H Super Saturday Program on March 12, 2016 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.

**Registration begins February 22.** 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://wallawalla.4h.wsu.edu>, call WSU Extension at 524-2685, or email [mowens@wsu.edu](mailto:mowens@wsu.edu)



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