Announcements

BAKING SUPERINTENDENT

Garfield County Fair is in need of a Baking superintendent for the upcoming Fair, September 15, 16, 17, 2017. If you would like more information, please contact the Extension Office, 509-843-3701, or email: lisbeth.randall@wsu.edu

JULY CROP TOURS

July 6, St. John, 10:00 AM
July 6, Lamont, 2:30 PM
July 7, Farmington, 8:00 AM
July 7, Palouse, 3:30 PM
For more information, please call Steve Van Vleet, 509-397-6290

July 14, Know Barley, Know Beer-Pullman, 3:00 PM
For more information, please call Kevin Murphy, 509-335-9692

BLUE MOUNTAIN QUARTER HORSE ASSOCIATION QUARTER HORSE SHOWS

July 14, 15, 16, 2017
Walla Walla County Fairgrounds, Walla Walla, WA
For more information, please contact the show secretary, Darlene Chase, 1733 Alder Avenue, Lewiston, ID 83501, PH/Fax: (208)798-0763, Cell: (208)305-6130, email: darleneechase@cableone.net

EXTENSION YOUTH ACTIVITY CAMP (EYAC)

July 17-21, 2017
Grantham Elementary, 1253 Poplar St., Clarkston, WA. For youth entering 2nd through 6th grade. Lunch is provided by the Summer Food Program from 12:30—12:50. Session 1 Classes, from 1 to 2:50 PM, are Bugs, Bees, & Birds, 4-H Stem—Rockets, Drones and Motion,, and Busy Kids. Session 2 classes, from 3:10 to 5:00 PM are Robotics Adventures, Cookin and Craftin, and Archery & Shooting Sports. Class size is limited and classes are first come first serve.

Registration forms are available at local libraries, the Lewiston Community Center and the Asotin County Aquatic Center as well as online at: http://extension.wsu.edu/asotin/ For more information, contact: Kim Belanger, WSU Asotin County Extension, 509-243-2009, Email: kim.belanger@wsu.edu

WHITMAN COUNTY 4-H SUMMER SIZZLER HORSE CAMP AND QUALIFYING SHOW

July 21-23, 2017
Palouse Empire Fairgrounds. For more information contact: Whitman County Extension (509)397-6290, or email: kelly.stewart@co.whitman.wa.us
Livestock & Farming

TAKE PRECAUTIONS TO AVOID PESTICIDE DRIFT
WSDA Pesticide Compliance Services

Every spring pesticide drift incidents affect workers and neighbors. 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 the proper protection. Within the farm’s property boundaries, no one except properly trained and equipped handlers can be in the application exclusion zone during 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.

WATER CONSERVATION, WEED CONTROL GO HAND IN HAND
WSU Publication EM4856

Weeds, like other plants, consume large quantities of water, and most of it is lost by transportation to the atmosphere. Plants with deep roots have an advantage under conditions of moisture stress. Growth of common lambsquarters, kochia, and Russian thistle is less affected by a shortage of moisture than is growth of many crops.

Importance in Dry Years

Research concerned with common annual weeds and with their water use requirements, compared with those of agricultural crops, shows that weed control must become an integral part of the farming operation. Weed control is even more important during years of water shortage. When moisture is in short supply, weeds can reduce crop yields more than 50% through moisture competition.

Weeds Need More Water than Many Crops

Some common annual weeds growing in association with cultivated crops use up to three times as much water to produce a pound of dry matter as do the crops. For example, common lambsquarters requires 658 pounds of water to produce one pound of dry matter, common sunflower requires 623 pounds, and common ragweed 912 pounds, compared with 349 pounds for corn and 557 pounds for wheat.

The amount of water used by an infestation of lambsquarters, if it were conserved through adequate weed control practices, could produce an additional 1.9 tons per acre of corn and 1.2 tons per acre of wheat.

In a 2 year field study, each Russian thistle plant removed an average of 18 gallons of water whole competing with the spring wheat crop (mid-April to early August). In addition, each plant used 26 more gallons from crop harvest to killing frost (October).

Other competitive annual weeds common to crops in Washington also show negative values. It has been estimated that one wild sunflower plant uses about the same amount of moisture required to grow one potato plant, or nearly two and one-half corn plants. One common mustard uses as much moisture as four wheat plants, and one Russian thistle uses as much moisture as three sorghum plants. Roots on some weeds, such as Russian thistle, develop much
Faster than roots of the crop with which it is competing. This allows the faster developing weeds to reach deeper soil moisture first.

Annual weed competition studies conducted in field beans by the USDA-ARS in cooperation with Washington State University showed that annual weeds reduced bean yields from an average of 2795 pounds per acre to less than 900 pounds per acre.

Moisture was not the limiting factor in these studies, but other research has shown that interactions compound the advantage to the weeds in a competitive system. Thus, if weeds suppress crops by shading them, the crops are less able to compete for water and nutrients, and severe yield reductions result.

Research and grower experience clearly points out the importance of a good weed control program in all crops when adequate water is available. One can imagine the seriousness under limited irrigation water.

**Weeds on Dryland**

Under dryland conditions, weeds usually cause the most severe reduction in yield the first two or three weeks of crop growth. Good replant or pre-emergence weed control seem to be essential for maintaining or maximizing yields.

Row crops and forage crops under irrigation are not the only production areas to suffer during drought years. If less water is available on rangelands, we may see fewer plants growing in a given area. This thinning will open up more sites for invasion by weeds. We may see a normal weed, such as downy brome, replaced by a more serious weed, such as on the knapweeds.

**Drought Effects on Herbicides**

The efficiency of most herbicides depends on water. Soil applied herbicides are less active under drought conditions. This is especially true if pre-emergence herbicides that require overhead moisture to move into the soil where weed seeds germinate. A harrowing or rotary hoeing can help incorporate herbicides and remove escaped weeds where adequate moisture has not occurred. However, tillage can expose the soil to further drying.

Post-emergence herbicides perform best when weeds are actively growing. High temperature, high relative humidity, and adequate soil moisture are ideal.

Drought stress of weeds reduces herbicide effectiveness. Weeds are not able to grow as rapidly with limited moisture. Weeds also develop a thicker wax layer, or cuticle, on their leaves to reduce moisture loss during dry conditions. This can reduce the ability of post-emergence herbicides to enter weed foliage. Herbicide adjuvants can help increase the penetration of the herbicide into the leaf. However, adjuvants may reduce the selectiveness of selective herbicides and increase crop injury.

Weed control programs are needed to maintain economic levels of crop production, even under optimum growing conditions. Weed control becomes even more important in dry years. Good weed control means higher crop yields and higher net returns per acre.

Outstanding weed control programs have been developed for many Washington crops. Growers should consider weed control an important part of every crop production plan.
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, Serpin 1 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 in life sciences,
Why use a food thermometer when cooking thin meat? It’s fast and easy to use a thermometer and your meat will be **SAFE** and **HIGH-QUALITY**,

**Safety**
- Raw meat may contain harmful bacteria. These bacteria are killed when meat is cooked to 160°F; poultry cooked to 165°F.
- Many people rely on the internal color to check the doneness, but research has shown that color is NOT a good indicator of doneness.
- The ONLY way to be sure when meat is safe to eat is by testing the temperature with a thermometer.

**Quality**
- Meat is cooked to 160°F/165°F is **juicy** and **tender**.
- Unless you use a thermometer, it is very easy to overcook meat.
- Overcooked meat is **tough** and **dry**.

Most people think they can check the doneness of meat just by “eyeballing it.” They look at it and judge the doneness by its appearance. They trust their experience. Experience is good, but it may be misleading: for example, meat color—pink or brown—can fool you!

According to a recent USDA study, 1 out of every 4 hamburgers turns brown in the middle before it has reached a safe internal temperature. Using a thermometer is the only way to be sure the meat you cook reaches a safe temperature.

**Why Is It Important?**

Millions of people get sick from dangerous bacteria in food every year but many people don’t think their illness to foodborne bacteria. For some people—young children, pregnant women, people over 65, and people with chronic illnesses—getting sick from foodborne bacteria is more likely to result in serious health problems.

Using a food thermometer is the only sure way of knowing if your food ahs reached a high enough temperature to destroy foodborne bacteria.

**You should use your food thermometer when you cooking:**
- Ground meat patties and meatloaf
- Beef, veal, lamb
- Poultry (such as chicken and turkey)
- Pork
- Ham

**SAFETY**

The use of a food thermometer will improve the safety of meat. The appearance of meat, such as color, cannot be trusted as a way to decide if meat is completely cooked. In fact, the only way to know that meat has been cooked to a safe internal temperature is to use a food thermometer.
Quality

The use of a food thermometer can also improve the quality of meat. Using a food thermometer prevents over-cooking, because you know exactly when the meat is done, tender and juicy, but not over-cooked, tough and dry.

Food thermometers are very easy to use and should be used all-year round. There are 2 major types of food thermometers that are recommended for thin meat:

1) **An Instant-Read Dial Thermometer** reads the temperature along 2-3” of the probe—this means 2-3” of the probe must be inside the food.

2) **An Instant-Read Digital Thermometer** has its temperature sensor in the tip. The probe must be inserted at least 1/2” into the food.

**USDA Research (1998) Showed:**

One out of every four hamburgers turns brown before it’s been cooked to a safe internal temperature. And yet, only 3 percent of consumers checked hamburgers with a food thermometer according to a 1998 consumer food safety survey.
Quick and Easy Steps to Check Your Meat For Proper Temperature:

- **Step 1**
  For thin meat, insert the probe into the side of the meat.

- **Step 2**
  Insert the probe so at least 2-3” (dial) or 1/2” (digital) is in the center of the meat.

- **Step 3**
  Allow 15-20 seconds for the temperature to stabilize.

How To Cook Hamburgers

Most hamburgers are cooked on single-sided grills that cook one side of the meat at a time, such as frying pans, barbeque grills and broilers. In contrast, the clam-shell type Grill cools both side at the same time. We recommend that you either use a double-sided (clam-shell) type grill or turn patties frequently when cooking on a single-sided

**Most Effective**
Cooked on a double-sided grill with no turn over 2.7 min to reach 160°F most effective to reduce E.coli0157:H7

**Effective**
Cooked on a single-sided grill turned every 30 seconds, 6.6 min. to reach 160°F Effective to reduce E.coli0157:H7

**Least Effective**
Cooked on a single-sided grill turned only once, 19.9 min. to reach 160°F, Least effective to reduce E.coli0157:H7

Cooking Methods

The times given are only a guideline.

**Cook chicken breasts until internal temperature, tested with a digital or instan read thermometer, reaches 165°F.**

Clean the thermometer and spatula or tongs between uses by rinsing under hot running water for 5 seconds and wiping with a clean paper towel.

**Helpful Hint:** Pounding chicken breasts out to 1/2 inch thickness between wax paper or plastic wrap with a wooden kitchen mallet or rolling pin will decrease cooking time.

**Skillet**—Heat about 1 tablespoon oil in nonstick over medium heat. Cook Chicken in covered skillet about 10 minutes, turning once.

**Broiler**—Use top rack of oven. Preheat broiler pan on high for about 5 min. Brush chicken lightly with oil and place on broiler pan. Broil about 5 minutes on each side.

**Indoor Grill**—Follow manufacturers’ instructions for boneless, skinless chicken breasts. For double sided (clamshell type) grill, test temperature after about 3 minutes.

**Outdoor Grill**—Use medium high heat or medium coals. Cook in covered grill about 10 minutes, turning once.
Based on this research, our conclusions are that consumers should either:

- Cook hamburger patties in a double sided grill that cooks the top and bottom of the patty at the same time.

  OR

- Turn patties frequently when cooking on a single-sided grill or pan that cooks on only one side.

### Home and Garden

#### WEB RESOURCES

The following are some helpful links for problems and information for your home gardens.

**Pacific NW Insect Management Handbook**

[https://pnwhandbooks.org/insect](https://pnwhandbooks.org/insect)

This handbook is intended as a tool for making decisions regarding the control and management of important insect pests in the Pacific Northwest. Originally, it was written for commercial growers, county extension agents, consultants, field and nursery staff, and chemical industry representatives. In recent years we have added sections that are useful to Master Gardeners and homeowners.

**WSU Hortsense**

[http://hortsense.cahnrs.wsu.edu/Home/HortsenseHome.aspx](http://hortsense.cahnrs.wsu.edu/Home/HortsenseHome.aspx)

Home gardener fact sheets for managing common plant problems using Integrated Pest Management (IPM). Cultural controls and Washington-registered pesticides are included.

**WSU Pestsense**

[http://pestsense.cahnrs.wsu.edu/Home/PestsenseHome.aspx](http://pestsense.cahnrs.wsu.edu/Home/PestsenseHome.aspx)

Home owner fact sheets for managing common indoor pest problems with Integrated Pest Management (IPM). Includes cultural controls and Washington-registered pesticides.

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For More Information visit:
http://foodsafety.wsu.edu
As we are now harvesting our early planted crops, fill in with a few bean seeds or other short season crops that will germinate in hot weather. Be on the look out for Spider Mites. If you see a white webbing on leaves, the leaves will stipple and then turn white and the plant will die. Aphids will also attack many of our vegetables and flowers. Other pests to look out for are tomato worms, stink bugs, potato bugs, cucumber beetles, cabbage worms, and corn ear worms. As we all know, there are plenty of other pests eating what we are growing. Try picking these pests off by hand or spray with water first, before using chemicals. When using chemicals, read the label and follow the directions. Spray early morning or evening when bees and good bugs are not present. Many dogs and cats, as well as birds eat slug bait, so be sure to use a product that will not harm them.

July is the time to divide and re-plant Iris if needed. Mid August, start perennial seeds in containers or the garden in partial sun, keeping them moist and you will have many plants, at a very low cost, that will bloom for you next year. Harvest garlic as the stems turn yellow. You can cure garlic in warm, but not hot, area out of direct sun. Next, go out to the vegetable garden and start some cool season crops. As we get into fall and cooler temps, these will mature for that great salad. The end of August is the time to fertilize strawberries. If you haven’t ordered spring bulbs, now is the time to do that. Many nurseries and mail order catalogs put plants on sale that they don’t want to have over winter, so look for bargains. Also, start looking for flowers and vegetables that can be entered into the Garfield County Fair, September 15, 16, 17, 2017. Entries have been down the past few years, so we need more prize winners.

Master Gardener Classes will be held next January. All interested in gardening or becoming a Master Gardener are welcome. We are looking for a few community gardeners to help us with our 3rd grade gardening project. If you have two hours Friday afternoon during the school year, contact the extension office or see us at our plant clinics, Monday afternoons during the summer from 1 PM to 3PM. Happy summer gardening!

Happy Gardening!
WEST NILE HORSE VACCINATIONS

All 4-H horse project youth, leaders, and parents are encouraged to vaccinate their project horses (and all horses) against West Nile Virus. Previously vaccinated horses need a booster annually in the early spring to optimize protection for the coming mosquito season. Unvaccinated horses will need a series of two vaccinations and will not achieve adequate protection until a week after the second injection.

West Nile Virus could be a great topic for educational posters! Comparing Washington statistics with the rest of the United States is enlightening as well often lead the country in the number of equine cases of West Nile Virus. 2017 updates can be located at http://www.doh.wa.gov/DataandStatisticalReports/DiseasesandChronicConditions/WestNileVirus

A WSU publication on West Nile Virus can be found at http://cru.cahe.wsu.edu/CEPublications/FS201E/FS201E.pdf

2017 BI-COUNTY 4-H CAMP

Another fun year is in the books for the 4-H Bi-County Camp. A lot of hard work and energy goes into the planning of camp. Our children are very fortunate to have so many talented individuals come together to volunteer their time to teach classes, plan activities, set up activities, feed and watch over our children.

THANK YOU TO THE FOLLOWING:

Deb Hays—Director
Sheree Ledgerwood—Administrator
Aaron Stallcop—Counselor Coordinator
Cristie Crawford—Camp Event Coordinator
Ilene Hall—Kitchen Crew
Mikki Smith—Kitchen Crew
Gin Jenkins—Kitchen Crew
Patty Bowles—Nurse
Nancy Laughery—Nurse

The Bi-County 4-H Board
Matthew Hutchens—President
Kattie Bolland—Secretary
Miranda Bowen—Treasurer
CJ McGreevy, Mikki Smith, Charlie Barron, Emmalee Davis, Christy House, Ronald Shirman, Donna Hanger

Extension Agents
Paul Carter—Columbia County Extension
Mark Heitstuman—Garfield/Asotin County Extension

Teen Leaders
Rebecca Smith, Daltin Lambert, Aiden Berglund, Tom House, Kayleigh White, Heidi Dobbs and Wyatt Fiander.
2017 Bi-County Camp
Pickled Green Beans
(4 pint jars)

2 pounds green beans
1 teaspoon cayenne pepper
4 heads dill or 4 teaspoons dill seed

4 cloves garlic
2 1/2 cups water
2 1/2 cups vinegar (5%)
1/4 cup canning salt

Sterilize canning jars. Wash, trim ends and cut beans into 4-inch pieces.
Pack beans, lengthwise, into hot pint jars, leaving 1/2-inch headspace. To each pint, add 1/4 teaspoon cayenne pepper, 1 clove garlic, and 1 dill head or 1 teaspoon dill seed. Combine remaining ingredients and bring to a boil. Pour, boiling hot liquid over beans, leaving 1/2-inch headspace. Remove air bubbles. Wipe jar rims. Adjust lids. Process 5 minutes in a Boiling Water Bath. Let beans stand for at least 2 weeks before tasting to allow the flavor to develop.

Remember to Make Altitude Adjustments

Recipe from So East To Preserve, sixth addition, Cooperative Extension The University of Georgia

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