


September 2015

Announcements

SEPTEMBER

2-6 Walla Walla Fair & Frontier Days.



12 Walla Walla Community Hospice Pond & Garden Tour, 9 a.m.—4 p.m., \$20 per person. A self-guided tour of ten beautiful gardens in the area that incorporate water features in their design. Tickets are limited, and must be purchased in advance at Bright's Candies & Gifts, 11 E Main Street; at the Walla Walla Community Hospice Office at 1067 Isaacs Avenue; or online at www.wwhospice.org. For more information, visit call 509-525-5561.



All proceeds from the Pond and Garden Tour will be used toward providing quality hospice care in Walla Walla, Columbia, and Northeast Umatilla Counties.



OCTOBER

3 Experience 4-H! Learn about local 4-H Clubs at the Downtown Farmer's Market from 9 a.m. until 1 p.m. Information on current projects and how to join a 4-H Club as well as fun, hands-on activities.



Updates

Walla Walla Soft White Winter Wheat--Preliminary Data

1. Grain yield in the 2015 Walla Walla soft white winter wheat trial averaged 76 bushels/acre, significantly less than the five-year average. The Walla Walla nursery was located about 8 miles north of Walla Walla, WA (J. Beechinor, Cooperator). **2.** This nursery was seeded on September 30, 2014 following chem-fallow at a seeding rate of 85#/acre. **3.** A 4

oz./acre rate of Tilt was applied at the time of herbicide application and no stripe rust was

Walla Walla Hard Winter Wheat--Preliminary Data

1. Grain yield in the 2015 Walla Walla hard winter wheat trial averaged 63 bushels/acre, 20 bushels/acre less than the five-year average. The Walla Walla nursery was located about 8 miles north of Walla Walla, WA (J. Beechinor, Cooperator). **2.** This nursery was seeded on September 30, 2014 following chem-fallow at a seeding rate of 85#/acre. In an effort to reach protein goals, an additional 40#N was applied to the hard trial in the spring. **3.** A 4 oz./acre rate of Tilt was applied at the time of herbicide application and no stripe rust was observed at this location.

HELP NEEDED! Budget constraints are pushing us to cut postage costs. We can accomplish this if you furnish us with your e-mail address! If you are currently receiving our newsletter by postal mail, please email your current email address to:



becki.green@wsu.edu or call the Extension Office at 509-524-2685.

WEST NILE VIRUS NOTIFICATION

Washington State Department of Health received notification of four additional human cases; one **King County** resident who was most likely exposed while in **Adams County** and three **Benton County** residents, most likely exposed near their homes. Four additional horse cases were reported by WSDA from **Adams, Benton, Franklin, and Yakima counties**. Three of the horses were known not to have been vaccinated. Two survived their illness. All viral detections remain located in south-central Washington. For additional information about West Nile virus and its activity in the state, please visit our website at www.doh.wa.gov/wnv (updated daily 3PM).



4-H



Come see us at the Walla Walla Fair & Frontier Days! 4-H has been alive and well for over 100 years. This year is no different. The Walla Walla County 4-H youth have worked all year on a variety of projects to showcase at the fair, so come by to support them! Here is a list of pre-fair events:

- ◆ Thursday, August 27, 2015 at 6:00 p.m. Pre-Fair Horse Fitting & Showmanship and Western Games– Rodeo Arena
- ◆ Friday, August 28, 2015 at 4:00 p.m. Colt Training– 4-H Arena
- ◆ Saturday, August 29, 2015 at 9:00 a.m. Dog Agility Trials– Pepsi Stage Lawn
- ◆ Saturday, August 29, 2015 at 7:30 p.m. Public Fashion Revue– Community Building
- ◆ Sunday, August 30, 2015 at 4:00 p.m. Cat Show– Para mutual Building
- ◆ September 2-6, 2015- Walla Walla Fair & Frontier Days.
- ◆ Please see fair schedule for additional events.

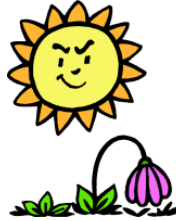
Home & Garden

RECOGNIZING DROUGHT INJURY ON PLANTS

By Mary Small, Colorado State University Cooperative Extension Agent, Urban IPM

Drought stress occurs when plant roots are not absorbing enough water for their needs. There are many causes for drought stress.

The obvious one is insufficient moisture. However, sufficient moisture may be present but plant roots are not functioning properly to absorb it. There may be just enough present for the plant to maintain itself, but no extra available for



growth. In some cases, plants that are over-watered suffer drought stress symptoms. Over-watering drives oxygen out of the soil, which is needed by plant roots for proper functioning. If there is insufficient oxygen, roots die, just as they do when there is insufficient water.

Drought may be of two kinds: short-term and long-term. An example of a short-term drought is the length of a growing season. A long-term drought lasts more than one growing season. While a short-term can damage plants, the long-term droughts are more harmful due to the chronic moisture stress.

Symptoms are the plant's reaction to stress and provide clues during diagnosis. Following are some common symptoms of drought stress. Be aware, however, that symptoms may mimic. Many of these symptoms may also be the result of other causes such as compacted soil, mechanical root injury, freezes, improper pesticide use and overwatering. Consider weather events and cultural practices along with the symptoms when making a diagnosis.

Symptoms found on entire plant:

- The pattern of plant damage or death occurs from the top of the plant down and from the outside of the plant inward.
- Plants wilt. One of the first symptoms of drought-stressed plants is the loss of turgidity. Plants or plant parts become limp and droopy.
- Plants show a decrease in growth or have no growth, both in girth and in length. A way to verify this on woody plants is to check the length of the growth increments, the amount of growth produced in each season. Beginning at the tip of a twig, move along the twig toward the trunk. Look for the first set of "wrinkles". The distance from the tip to the first set of wrinkles shows the amount of growth produced during the most recent growing season. Look for the next set of wrinkles. This shows the amount of growth produced by the plant during the previous



season. Continue checking the length of the increments. If they are short or getting shorter, this can indicate a decline in root function.

(Recently transplanted trees may have short growth increments until the root systems re-establish.)

- Plants or sections of them, appear chlorotic (yellow or yellow-green).
- Tree canopy may be thin. (Can also be due to insect, disease.)
- Plants may leaf out, then die later in the growing season, a result of depleted food reserves. This may occur during or even a few years after, a drought event.
- "Winter-kill" may occur. A reduction in hardiness develops as the result of decreased food production, movement and storage that occurs during a drought.
- Gummy exudates appear on twigs, branches and trunks.
- Suckers develop on branches and trunk.
- Heavy seed production. This may also be a normal plant response to certain weather conditions. Some plants normally produce large amounts of seed every few years.
- Wood or bark cracks.
- Stems and twigs die, with the outermost and upper ones dying first.
- Entire plants may die, as the result of root death from dehydration.

Symptoms found on leaves:

- Leaves are smaller than normal.
- Deciduous leaves turn brown from the outside edges inward and in between the veins ("scorch"). This symptom occurs because these areas naturally have the least amount of moisture in the leaf.
- Evergreen needles brown from the tip downward.
- Evergreen needles turn yellow, red or red-purple.
- Leaves roll up and/or are misshapen.
- Leaves drop prematurely. They may or may not turn color prematurely before dropping.
- Leaves remain attached to tree, even though brown.
- Leaves are dull in appearance rather than shiny.



- Leaves may turn blue-green.

Flower and Fruit Symptoms:

- Flowers fail to open properly.
- The flowering period is shorter than normal.
- Fruit drops early.
- Fruit and seed production may be reduced or absent.



Pest Problems related to drought:

- Moderate to large amount of spider mites found. Spider mites are attracted to, and proliferate on, drought-stressed plants.
- Canker development on trunks, twigs and branches. Disease organisms are better able to successfully attack drought-stressed plants because of their decreased resistance.
- Presence of certain twig beetles and borers, which are attracted to drought-stressed plants. Drought decreases a plant's resistance to these pests.

Additional Lawn Symptoms:

- Turf browns, in entire patches or in spots. Spotty browning can be the result of localized dry spots and/or improper sprinkler function.
- Thinning lawns as a result of decreased food production and storage.
- Appearance of more lawn weeds, a result of lawn thinning. This provides physical space for weed seed germination and growth. Some weeds are more heat-tolerant than bluegrass and will successfully colonize areas where bluegrass has a difficult time competing (i.e., along driveways, sidewalks and streets, south and west exposures).
- Stress-related [diseases](#) such as Aschochyta leaf blight, Necrotic ring spot and Dollar Spot may develop.



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WSU EXTENSION
WALLA WALLA COUNTY

Family Living



MAJOR CANNING ERRORS

Potentially Dangerous

What	Why It Is Unsafe
Making up your own canning recipe or using untested recipe.	Without scientific testing, you will not know how long the product needs to be processed to be safe.
Adding starch, flour or other thickener to recipe.	This will change the rate of heat penetration of the product and can result in under processing.
Adding extra onions, chili, bell peppers, or other vegetables to salsas or stewed tomatoes.	The extra vegetables dilute the acidity and can result in botulism poisoning.
Using oven or steam canner instead of water bath for processing.	The product will be under processed since air is not as good a conductor of heat as water.
Not making altitude adjustments.	Since boiling temperatures are lower at higher altitudes, the products will be under processed.
Not venting pressure canner 10 minutes before processing.	Lack of venting can result in air pockets which will not reach as high a temperature.
Using recipe for pickles with inadequate vinegar-to-water ratio.	A 1:1 ratio of vinegar-to-water is needed to prevent botulism poisoning.
Not having dial gauge pressure canners tested annually or new gauges tested before use.	If the gauge is inaccurate, the food may be under processed.
Failure to acidify canned tomatoes.	Not all tomatoes have an adequate acid level, especially if the vine is dead. This can result in botulism poisoning.
Cooling pressure canner under cold, running water.	Calculations for cooking time includes the residual heat during the normal cool-down period as part of the heat process.
Letting food cool before processing in the recipes that call for "hot pack."	The heat curves are based on the food being hot at the beginning of the processing. Product could be under processed.

Economic Loss... potentially hazardous but not Deadly

Use of mayonnaise jars.	The jar may blow-up, especially if used in a pressure canner, and it may be more difficult to obtain a good seal. However, if it seals, it is safe to use.
Use of paraffin on jams and preserves.	Small air holes in the paraffin may allow mold to grow. Also, paraffin can catch on fire if overheated. If there is mold growth, throw out the product.
Cooling too slowly after removing from canner. (Example: stacked jars close together.)	There are a group of harmless organisms called thermophiles which can survive canning. This results in the defect known as "flat-sour", a harmless, but very undesirable flavor.
Storing food longer than recommended.	Lengthy or overly hot storage will decrease quality and some nutrients but the product will still be safe to eat.

General Rules

1. Always exactly follow a scientifically tested recipe. (Exceptions listed below.)
2. Make altitude adjustments by adding more time to water bath canning or increasing pressure for pressure canned products.
3. Unless you are sure that everything was perfect in the processing, boil the product for 10 minutes before eating it.

Exceptions to the “NEVER change anything” in a canning recipe rule.

Feel free to:

- Change salt level in anything except pickles.
- Change sugar level in syrup used for canned fruit.
- Add extra vinegar or lemon juice.
- Decrease any vegetable except tomatoes in salsas.
- Substitute bell peppers, long green peppers or jalapeno peppers for each other in salsa recipes as long as you do not increase the total amount.

Adapted from Major Canning Sins, FN-250.7, by Charlotte P. Brennand, Ph.D., Extension Food Safety Specialist, Utah State University, Logan, UT. June 2005.



Farming & Livestock

HEAT STRESS ON SEED PRODUCTION

Wayne Thompson, WSU Extension Regional Agronomist

Heat stress before and during anthesis (pollination) is known to reduce seed number, quality and viability. Severe heat stress before anthesis can result in the production of sterile seed. The severity of the problem varies with species and cultivar, and is closely associated with the plant's ability to regulate its internal leaf temperature. Internal leaf temperature of a healthy actively growing plant is always lower than air temperature and close to soil temperature, while internal leaf temperature of a plant under water stress is always higher than the ambient air temperature.

Drought tolerant cultivars have adaptive mechanisms that help maintain lower internal leaf temperatures than less tolerant cultivars. For example, one mechanism of an improved cultivar is ultra-sensitive stomata that



close with the earliest sign of heat or water stress. Stomata are gate keepers of the leaf and play a very large role in the gas-exchange

system associated with photosynthesis. When stomata close, water vapor loss decreases. Another survival mechanism that we have all observed is leaf rolling. As a leaf rolls to form a straw-like structure the amount of leaf area exposed to sunlight decreases. This adaptive mechanism helps to lower internal leaf temperature and minimize water vapor loss.

Internal leaf temperatures that exceed 86°F are considered severe, while prolonged temperatures near 105°F can be fatal. When the internal leaf temperature reaches 97°F, photosynthesis shuts down and a second system kicks in ... photorespiration. Recall that carbohydrates are generated during photosynthesis. The process of photorespiration consumes carbohydrate reserves. When heat stress persists and leaf temperatures remain elevated, grain yields and quality suffer. The optimum window of time needed for grain fill is shortened, and the combined effect of water stress and photorespiration result in the production of small low test weight grain with low levels of starch. This process helps us to better understand why grain size and seed quality decrease when produced during periods with extended high air temperatures.



With adequate soil moisture, some cultivars adapt to elevated air temperatures when allowed time to adjust during gradual increases in air temperature. Conditions where temperature change is abrupt, with rapid increases over a short period of time, plants are generally less able to adapt and typically suffer serious reductions in grain yield and quality.

Germination tests for small grains sizes might indicate adequate germination rates, although in the field small size grain and low starch content has lower survival under stress, due in large part to low energy reserves and impaired seedling vigor.

How do we manage cereal cropping systems under conditions with heat stress? Plant drought tolerant cultivars. Irrigate to maintain ample moisture and cooler soil temperatures. Promote soil shading with straw residues, especially with dryland systems in low rainfall areas where the crop canopy is typically sparse. Go to smallgrains.wsu.edu for more information.



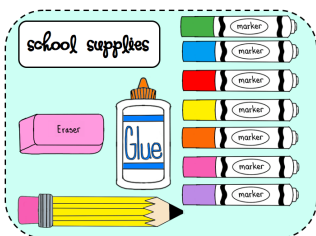
Financial Fitness

REUSING SCHOOL SUPPLIES

Lucy Schrader, Associate State Specialist and Building Strong Families Program Coordinator, Personal Financial Planning, University of Missouri Extension

School starts soon for many communities, and with the new school year there is the need for new school supplies.

But do all of the supplies have to be new? For some families, the cost of buying new supplies can be difficult with an already tight budget. Putting together a mix of new and used supplies can help ease the cost. Oftentimes, notebooks, colored pencils and other items are still in good shape from the previous school year, and some schools send supplies home at the end of the year.



Getting kids involved can help them understand how reusing supplies is resourceful and how it can be good for the family financially. You can also talk about trade-offs and how decisions impact the family in different ways. For example, if your child reuses a backpack from last year, what can the family do with the money that was saved? Can you use it for a fun activity during the year instead, such as roller skating, going out to eat or buying something for another family who might have special needs? Going through this process can help youth get a better idea of costs and how they can be a part of the decision-making process.

With a push toward consuming less and making better use of the resources we already have, here are some ideas on reusing school supplies.

Spiral and composition notebooks

Tear out used pages. Some children only use a few pages out of several notebooks, which leaves a large part of the notebooks with good, useable pages. To spruce it up, decorate the cover with stickers and duct tape to create a "new," one-of-a-kind notebook.

Other supplies to reuse if they are in good condition:

- scissors
- school boxes
- pink erasers (still work even if partly used)
- markers (test markers to see if they still work)

- colored pencils (can be sharpened and reused)
- folders
- Crayons

Backpacks and bags

If kids want a new design, think about adding a patch or beads or something to hang from the zipper pull to give last year's pack a new look. Could siblings or friends trade backpacks for a year to get a different color or design without paying for a new bag? Some backpacks can be machine washed or wiped with a cloth to clean them from the previous year.

Talk to the teacher and purchase items at a later time

If the budget is tight, talk to your child's teacher(s) to see if you can bring in some supplies later in the year. Classes use supplies such as tissues, baggies or antiseptic wipes throughout the entire year. Teachers may have enough to get started at the beginning of the year and will be OK if you bring items later.

Donate supplies you won't be using

If you have crayons, markers, paints, paper or other supplies that you will not be using but are still in good shape, think about donating them to groups who can still get plenty of use from them. Groups might include after-school programs, other classrooms, day cares or summer camps. Many of them are glad to get these kinds of consumable supplies.

These are just a few ideas of ways to reuse school supplies. See if you and your children can come up with others. You might even decide to do this as a school project at the end of each year for the coming year, or do this as part of a neighborhood project to share and trade supplies.



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WALLA WALLA COUNTY EXTENSION

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Debbie M. Williams

Debbie M. Williams
County Extension Director

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