



Asotin County

WASHINGTON STATE UNIVERSITY

Newsletter

April-June 2019

Welcome to the WSU Asotin County Extension Newsletter! This is a quarterly electronic newsletter highlighting events and topics of interest to residents of Asotin County and the surrounding area. This newsletter can also be viewed on our website: extension.wsu.edu/asotin/

Do you have an event or subject you would like added to our newsletter or website?
Would you like to be removed from our Extension Newsletter email list?

Contact the Extension Office

Phone: (509) 243-2009 Email: jreed@co.asotin.wa.us

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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.

4-H News/Events and Youth Opportunities

4-H Forever Green

Asotin County 4-Her Anna Belanger's painting to be displayed at Capitol in Washington, D.C.

Anna Belanger joined 4-H in Asotin County as a Cloverbud in 2005, and she never looked back. Her 4-H experience included Poultry, Rabbits, Swine, Cooking, Leadership and Art. Anna has always loved to make art. She's been doing it ever since she can remember. Now her talent will be put on display at the United States Capitol Building in Washington, D.C.

Belanger was chosen by eastern Washington Congresswoman Cathy McMorris Rodgers as the winner of the annual Congressional Art Competition. Each year, every congressional office selects one winner within its jurisdiction. The artwork is then displayed for one year in the tunnel that connects the Cannon House Office Building to the Capitol. The area is used daily by members of Congress, staff and visitors. Her watercolor painting, titled "Appaloosa," features the spotted-horse inhabitant of the area she calls home.



Anna commented, "I chose to paint an Appaloosa because they are native to the Palouse. To me, they represent the area I was lucky enough to grow up in."

She hasn't had much experience drawing horses, so she was surprised to find out she was the winner of the competition. Belanger received a phone call from McMorris Rodgers congratulating her and inviting her to Washington, D.C.

"I am always so inspired by the talent and creativity of our young people in eastern Washington," McMorris Rodgers said in a news release. "A special congratulations to Anna Belanger, this year's winner. I look forward to meeting Anna when she is in Washington, D.C. for the reception and to seeing her artwork displayed in the U.S. Capitol as I walk to the House floor every day."

Anna travelled to D.C. in June with her mother, Kim Belanger, Asotin County 4-H Program Coordinator. During their four days in Washington D.C., Anna was honored at the Congressional Art Reception, along with the winners from other congressional districts.

They were special guests of Congresswoman Cathy McMorris Rodgers for a tour of the white house and US Capitol and enjoyed good food and sightseeing via DC Metro Rail.

Belanger said the award is a good way to wrap up her time at Clarkston High School and Asotin County 4-H. Next year, she plans to attend Lewis-Clark State College to major in education. She'd like to become a special education teacher.

Scholarships Awarded

Congrats to these two outstanding Asotin FFA members for earning scholarships to continue their respective college careers! Anna Aarstad will be attending Casper College in Casper, Wyoming this fall to pursue her degree on a livestock judging scholarship. Jolee Sanford will be attending Laramie County Community College in Laramie, Wyoming and competing on their livestock judging team as well. These two young ladies have traveled more than any other livestock judgers from Asotin FFA: twice to Texas A & M, twice to Arizona National, twice to National Western in Denver, twice to the NILE in Montana and once to the National FFA Convention! Well done and good luck to you both!



4-H HISTORY

[HTTPS://4-H.ORG/ABOUT/HISTORY/](https://4-h.org/about/history/)

Since 4-H began more than 100 years ago, it has become the nation's largest youth development organization. The 4-H idea is simple: help young people and their families gain the skills needed to be proactive forces in their communities and develop ideas for a more innovative economy.

The Birth of 4-H Programs

4-H opened the door for young people to learn leadership skills and revolutionized how youth connected to practical, hands-on learning experiences outside the classroom.

Late 1800's: Making Connections

In the late 1800's, researchers discovered adults in the farming community did not readily accept new agricultural developments on university campuses, but found that young people were open to new thinking and would experiment with new ideas and share their experiences with adults. In this way, rural youth programs introduced new agriculture technology to communities.

The idea of practical and "hands-on" learning came from the desire to connect public school education to country life. Building community clubs to help solve agricultural challenges was a first step toward youth learning more about the industries in their community.

1902: Youth Clubs are Formed

B. Graham started a youth program in Clark County, Ohio, in 1902, which is considered the birth of 4-H in the United States. The first club was called "The Tomato Club" or the "Corn Growing Club". T.A. Erickson of Douglas County, Minnesota, started local agricultural after-school clubs and fairs that same year. Jessie Field Shambaugh developed the clover pin with an H on each leaf in 1910, and by 1912 they were called 4-H clubs.



1914: Cooperative Extension System is Created

The passage of the Smith-Lever Act in 1914 created the Cooperative Extension System at USDA and nationalized 4-H. By 1924, 4-H clubs were formed and the clover emblem was adopted.

The Cooperative Extension System is a partnership of the National Institute of Food and Agriculture (NIFA) within the U.S. Department of Agriculture (USDA), more than 100 land-grant universities and more than 3,000 county offices across the nation. Cooperative Extension combines the expertise and resources of federal, state, and local governments and is designed to meet the need for research, knowledge and educational programs.

4-H Today

Today, 4-H serves youth in rural, urban, and suburban communities in every state across the nation. 4-H'ers are tackling the nation's top issues, from global food security, climate change and sustainable energy to childhood obesity and food safety. 4-H out-of-school programming, in-school enrichment programs, clubs and camps also offer a wide variety of STEM opportunities – from agricultural and animal sciences to rocketry, robotics, environmental protection and computer science – to improve the nation's ability to compete in key scientific fields and take on the leading challenges of the 21st century.

See what is happening at the 78th Annual Asotin County Fair

April 26-28

4-H & FFA youth and leaders have been working hard on projects to showcase at the Fair.

Come to the Fair and look at all the kids' hard work!

Find information about the Fair on the website: <http://www.asotincountyfairandrodeo.org/>

The Asotin County Youth Commission presents The 18th Annual Youth Awards Night

Wednesday, May 22, 6:00 to 7:30 pm

Clarkston High School Auditorium

Nominations are due by Wednesday, May 1st.



The Asotin County Youth Commission (ACYC) is a group of energetic 7th to 12th grade students making a difference in Asotin County. The mission of this group is to create, foster, and maintain a positive environment for all the youth of Asotin County through partnerships that identify, promote and provide community resources for youth involvement, leadership, recognition and empowerment. Each spring, the ACYC holds a Youth Awards Night to recognize individuals and groups that volunteer their time helping youth in our community.

Nominate outstanding youth, youth organizations, or adults that have made a difference in our communities. All nominees will be recognized on stage at the Awards Night. A \$100 prize will be donated to the Youth Organization with the most audience votes.

Nomination forms are available on the Youth Commission web page at: www.co.asotin.wa.us and choose the Youth Commission link on the bottom right.

You may also call 509-243-2009 for nomination forms or questions.

Extension Youth Activity Camp Save the Date! July 15-19, 2019 Parkway Elementary School in Clarkston



Talk about fun!

Each year, the Extension Youth Activity Camp (EYAC) is held in the afternoons for a week in July. Over 45 youth from grades 2nd through 6th attend the event each year. There is a variety of fun and educational classes to choose from. A free lunch is provided for the campers prior to the camp.

The camp was started ten years ago to teach kids various life skills in a fun way.

Information and registration for EYAC will be sent to Asotin County Schools later in the spring. Also check our website: <https://extension.wsu.edu/asotin/> or call the office at 509-243-2009 with your questions.



Master Gardeners and Gardening

The nitty gritty: What it means to be a WSU Master Gardener

Adapted from an article by Mark Amara, WSU Grant-Adams Master Gardener

Many people are curious about what the Washington State University Master Gardener program is all about. Here are some questions and answers:



What is a Master Gardener?

Anyone can use the term Master Gardener. Only volunteers trained by universities can put the university's initials in front of Master Gardener. When university initials are used, one can trust the information being taught is unbiased and science-based. WSU Master Gardeners are trained volunteers who provide unbiased, research-based education on issues of importance in their local communities to help conserve and enhance our natural resources.

WSU Master Gardeners are not members of a garden club. Essentially, WSU Master Gardeners are unpaid agents of Washington State University and are trained to help WSU achieve its' land-grant mission by providing unbiased research supported information to the public.

What is required to become a certified WSU Master Gardener?

Specialized training is held every two years in Asotin County. Approved applicants attend 64 hours of classroom instruction, online training, and must satisfactorily complete all assignments. The course is taught by WSU Extension Faculty, WSU Master Gardeners, and resource specialists. After the training is complete, the program requires at least 40 hours of volunteer service the first year. Then, every year after that, WSU Master Gardeners must attend 10 hours of advanced educational training and perform at least 25 hours of volunteer service per year to maintain the certification.

Is there a cost to attend the training?

Fees to participate are \$130 for the 16 week classes and \$75 for the online training modules, with a portion of the fee reimbursed after successful completion of the training.

What are the primary responsibilities?

WSU Master Gardeners serve as educators and resources on horticulture and gardening. WSU MG's work with issues in rural or urban yards, gardens or landscaping. If there are referrals or questions from commercial enterprises or farms, they are directed to the appropriate local or regional extension agent. WSU Master Gardeners compile and distribute educational materials at plant clinics, farmers markets, workshops, and county fairs. There are all kinds of outside activities including demonstration, community gardens, or work with schools in the communities we serve or through hands-on training sessions. WSU Master Gardeners are often requested to make presentations to groups or other MG's. There are opportunities to prepare exhibits, displays, booths and demonstration sites.

When is the next scheduled training?

The next WSU Master Gardener Training class for Asotin, Garfield, Whitman, and Nez Perce Counties will be starting in January 2020. The class is available to those interested in becoming certified Master Gardeners and also for those wishing to attend for their own knowledge. Applicants to become Master Gardeners should have a strong volunteer ethic, commit to becoming a volunteer educator for WSU Extension, pass a background screening, abide by WSU Master Gardener regulations and be willing to take additional required trainings.

Contact the Asotin County Extension Office to be put on the list to receive notice about the 2020 Master Gardener Training Class. Phone: 509-243-2009. Email: jreed@co.asotin.wa.us

Upcoming Master Gardener Events

- Tree Clinic at Patt's Garden Center. April 13th.
- Visit our booth in Floch Hall at the Asotin County Fair. April 26—28.
- Office Plant Clinics—May thru Sept. Basement of Asotin County Courthouse
- Brown Bag Garden Series—May thru July. Beachview Park in Clarkston
- Information table at the Clarkston Farmer's Market—June thru Sept



For details on Master Gardener events go to the web page:

<https://extension.wsu.edu/asotin/upcoming-events-and-workshops/>

Request to be added to the email list by emailing Janice at jreed@co.asotin.wa.us.

Clarkston Community Garden Plant Sale

April 27 from 9:00 to 2:00

Thank you to Clarkston Albertsons for hosting the event in their parking lot!

Veggies, lots of tomatoes, flowers, ornamental trees and shrubs for sale.

This is a yearly fundraiser with funds used to maintain the garden.

40% of the Clarkston Community Garden is devoted to growing produce for the Asotin County Food Bank.

Over one ton of food is donated yearly.

The Clarkston Community Garden is located at 1440 Fair St (behind Walla Walla Community College) in Clarkston. The Garden is open to the public on Tuesdays from 8-11 am. A Master Gardener is on hand to give tours and answer questions. For more information call 509-758-6849.



Asotin County CattleWomen's Association Plant Sale

May 10 & 11 from 8:00 to 4:00

Asotin County Fairgrounds, Boyd Hall

Thanks to Schurman's Hardware for their support.

Thanks to Clarkston FFA for growing seedling in their greenhouse.

Vegetables, herbs, perennials, exotics, and house plants for sale.

Master Gardeners will be there to help you with your plant questions.

LC Valley Beekeepers Association will be there to answer questions.

Funds from the plant sale are used to support Asotin County 4-H and FFA programs.



Fungus provides powerful medicine in fighting honeybee viruses

October 4, 2018

Steve Sheppard and his team provide the mushroom extract to a bee hive as part of their experiment. Bees that received the extract showed significant declines in viral infections within days.

By Scott Weybright, College of Agricultural, Human, and Natural Resource Sciences



PULLMAN, Wash. – A mushroom extract fed to honeybees greatly reduces virus levels, according to a new paper from Washington State University scientists, the USDA and colleagues at Fungi Perfecti, a business based in Olympia, Washington.

In field trials, colonies fed mycelium extract from amadou and reishi fungi showed a 79 fold reduction in deformed wing virus and a 45,000 fold reduction in Lake Sinai virus compared to control colonies.

Though it's in the early stages of development, the researchers see great potential in this research.

"Our greatest hope is that these extracts have such an impact on viruses that they may help varroa mites become an annoyance for bees, rather than causing huge devastation," said **Steve Sheppard**, a WSU entomology professor and one of the paper's authors. "We're excited to see where this research leads us. Time is running out for bee populations and the safety and security of the world's food supply hinges on our ability to find means to improve pollinator health." The research was published in the journal **Scientific Reports**. The hope is that the results of this research will help dwindling honeybee colonies fight viruses, that are known to play a role in colony collapse disorder. "One of the major ways varroa mites hurt bees is by spreading and amplifying viruses," Sheppard said. "Mites really put stress on the bees' immune systems, making them more susceptible to viruses that shorten worker bee lifespans."

Partnership with Fungi Perfecti, LLC

This is the first research paper to come out of a partnership between Sheppard's lab and Fungi Perfecti. Their co-owner and founder Paul Stamets is a co-author on the paper.

"Paul previously worked on a project that demonstrated the antiviral properties of mycelial extracts on human cells," Sheppard said. "He read about viruses hurting bees and called us to explore the use of the extracts on honeybees. After two years, we demonstrated that those antiviral properties extend to honeybees."

Stamets is passionate about the various benefits of fungi, both to humans and wildlife. And he's been enjoying this partnership with Sheppard and his lab. "This is a great example of connecting the dots between two fields of biological science," Stamets said. "I am excited about new discoveries and opportunities. For me, the best of science is when it is used for practical solutions. Our team is honored to work with WSU researchers and look forward to continuing collaboration." A portion of this project was funded by USDA/NIFA project WNP0060.

Limited supplies

Right now, the mycelium extract isn't currently available in levels for beekeepers to purchase for their hives. "We are ramping up production of the extracts as rapidly as is feasible, given the hurdles we must overcome to deploy this on a wide scale," Stamets added. "Those who are interested in being kept up to date, can sign up for more information at Fungi.com

Fungus provides powerful medicine in fighting honeybee viruses (continued)

Sheppard said he and his colleagues plan to do more work to refine their now-published results. That way beekeepers will have the best information when supplies are more available. “We aren’t sure if the mycelium is boosting the bees’ immune system or actually fighting the viruses,” Sheppard said. “We’re working to figure that out, along with testing larger groups of colonies to develop best management practices and determine how much extract should be used and when to have the best impact.”

Mites and viruses

Over the last decade, beekeepers have seen a disastrous decline in the health of honeybee colonies, often averaging over 30 percent loss annually. Varroa mites, and the viruses they proliferate, play a major role in those losses. Deformed wing virus, which causes shriveled wings on bees, greatly reduces the lifespan of worker bees.

Lake Sinai virus is also associated with varroa mites and is widespread in bee colonies around the United States. While the virus has no obvious or overt symptoms, it’s an important virus to fight because it was found at higher levels in bees from collapsing colonies. It is closely related to chronic bee paralysis virus and it likely makes bees sick and weak, according to WSU assistant research professor Brandon Hopkins.

Treating with fungi

The treated bee colonies in this experiment were fed an oral treatment of mycelial extracts in dozens of small WSU bee colonies infested with varroa mites. “It’s a really easy treatment to apply,” Sheppard said. “After we follow larger colonies for a full year, we can develop recommendations for how to use the extracts. Then it is expected that Fungi Perfecti will ramp up production.” There is currently no timeline for when the extract would be available at a scale large enough for beekeepers.

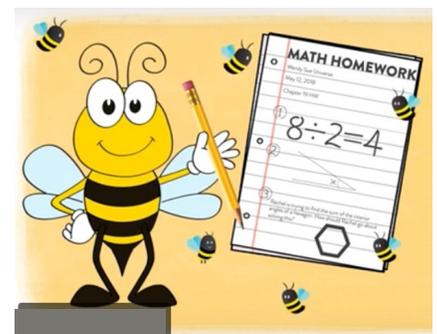


Got a question? Any question?
Ask Dr. Universe!
Web.wsu.edu/askdruniverse

Hey cool cats, I’m Dr. Universe here to answer your baffling science questions:

Why do bees make hexagons in their hives?

When bees make hexagons in their hives, the six-sided shapes fit together perfectly. You know, if you think about it, other shapes wouldn’t work quite as well. Circles would leave gaps in the honeycomb. Squares and triangles wouldn’t leave gaps, but the hexagon works even better. The hexagon uses the least amount of material to hold the most weight. Bees can use these hexagons to store things. The queen bees eggs, pollen, and honey. For having never done a day of math homework in their lives, bees use some pretty creative geometry and engineering to build their headquarters.



A No-math Method of Calibrating Backpack Sprayers and Lawn Care Spray Guns

Gregg C. Munshaw, Plant and Soil Sciences

Calibrating application equipment is something many people avoid because they believe it is too time consuming or that the math involved in the process is confusing. Calibration, however, is critical. Applying too much can be bad for the environment, injure the grass, and also wastes money. Applying too little can result in poor pest control and can lead to pesticide resistance. There are several methods that will calibrate sprayers but the no-math method is likely the most simple and reduces the chance of errors.

The no-math method is based on the number 128. This method is also called the 1/128th method because it is known that there are 128 fl. oz. in a gallon and the calibration covers 1/128th of an acre (340 sq. ft.).

To calibrate using the no-math method, only very simple equipment is needed:

- Backpack sprayer
- Measuring tape
- Measuring container (in fl. oz.)
- Stopwatch

The following steps are required to calibrate a backpack sprayer¹ using the no math method:

1. Measure out a square that is 18.5 ft. x 18.5 ft. (340 sq. ft.). Ideally, this will be on concrete as it is easier to see where you have sprayed on concrete rather than grass. Pay attention to your speed, however, as you may walk faster on the hard surface compared to the grass.
2. Fill the spray tank about half full with water and have someone time how long it takes you to spray the entire area. Be sure to keep the spray tank pressure constant throughout calibration and your nozzle at a consistent



Figure 1. Timing how long it takes to spray an 18.5 ft. by 18.5 ft. square.

height at which you typically operate it (Figure 1).

3. Spray the nozzle into the measuring container for the same amount of time as it took to spray the square (Figure 2).
4. Repeat steps 2 and 3 to make sure your speed and nozzle outflow are consistent.
5. Whatever amount is collected in the container, measured in ounces, is the GPA. If you collected 40 fl. oz. in your measuring container, this number converts directly to 40 gallons per acre (GPA), 30 fl. Oz. is 30 GPA, etc.

The previous steps are all that are required to calibrate a sprayer. However, we now need to know how much pesticide must be added to the tank to make sure the proper rate is being applied. To do this, first locate the rate on the pesticide label. For example, we will use an

herbicide that is to be applied at 1 quart per acre, we calibrated our sprayer to 30 GPA, and our spray tank can hold 3 gallons of liquid. Because backpack sprayers are not typically used to cover large areas like an acre and because the spray tanks are quite small, we need to convert the rate from quarts to a much smaller value like fluid ounces. To do this, we plug our numbers into the following formula:

$$\frac{\text{spray tank size (gallons)}}{\text{GPA}} \times \frac{\text{pesticide rate per acre}}{\text{acre}} = \text{amount of pesticide required in sprayer}$$

Plugging in our numbers we get the following:

$$\frac{3}{30} = 0.1 \times 1 \text{ quart} = 0.1 \text{ quarts}$$

No-math sprayer calibration (continued)

Because most measuring containers use fl. oz., we can then convert this number into fl. oz. by multiplying by 32 fl. oz. in a quart:

$$0.1 \text{ quarts} \times 32 = 3.2 \text{ fl. oz.}$$

This equation also works for large lawn care spray-gun tanks.

If the pesticide is a dry formulation like a WP or DG, the same formula applies. As long as the rate is in oz. per acre, we can still plug this number into the space for pesticide rate per acre in the formula. The total amount of pesticide can also be converted into grams or any units that are desired.

Table 1 can be used to determine how much pesticide (in fl. oz.) should be added to the spray tank based on the size of your specific sprayer and the GPA you determined during calibration.

This formula is all there is to calibrating using the no-math (technically very little math) method. Calibration is something that should ideally be done each time you apply pesticides to make sure you are applying properly. Using this method is fast and easy enough that there really are no good excuses for skipping this step. With a little practice, you can be a calibration expert in no time.



Figure 2. Spraying into the measuring container for the same length of time it took to spray the square.

Table 1. The amount of pesticide to be added to the tank based on the calibrated GPA, the tank size, and the pesticide rate per acre.

Calibration	Tank Size (gal)	Pesticide Rate per Acre				
		1 pt	1 qt	2 qt	3 qt	4 qt
		Amount of Pesticide to Add to Tank (fl.oz.)				
20 GPA	1	0.8	1.6	3.2	4.8	6.4
	2	1.6	3.2	6.4	9.6	12.8
	3	2.4	4.8	9.6	14.4	19.2
	4	3.2	6.4	12.8	19.2	25.6
30 GPA	1	0.5	1.1	2.1	3.2	4.3
	2	1.0	2.1	4.2	6.4	8.6
	3	1.5	3.2	6.3	9.6	12.9
	4	2.0	4.3	8.4	12.8	17.2
40 GPA	1	0.4	0.8	1.6	2.4	3.2
	2	0.8	1.6	3.2	4.8	6.4
	3	1.2	2.4	4.8	7.2	9.6
	4	1.6	3.2	6.4	9.6	12.8
50 GPA	1	0.3	0.6	1.3	1.9	2.6
	2	0.6	1.2	2.6	3.8	5.2
	3	0.9	1.8	3.9	5.7	7.8
	4	1.2	2.4	5.2	7.6	10.4

1 To calibrate a lawn care spray gun, these same steps are used but the tank does not have to be half filled.

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Issued 4-2016

Asotin County Noxious Weed Control Board Welcomes Spring!

Hello from all of us here at Asotin County Noxious Weed Control Board (ACNWCB)! Our Board members: Mr. Tom Petty, Chairman, representing District 2; Mr. Keith Claassen, Vice Chairman, representing District 1; Mr. Brit Ausman representing District 3; and Mr. Jerry Hendrickson representing District 4, hope you will join them in welcoming spring, finally! The ACNWCB is looking forward to helping you in the fight against noxious weeds, making Asotin County ever more beautiful! The ACNWCB would also like to thank Mr. Kirby VanTine for his time as District 5 representative. Kirby has been a valued Board member since 2017! The ACNWCB wishes him the best on his future endeavors; thank you, Kirby!

Funding for ACNWCB projects is similar to years past. Thanks to grants from the Rocky Mountain Elk Foundation, Asotin County Conservation District, Washington State Department of Agriculture, and the Washington State Noxious Weed Control Board, funding is available for a variety of projects. The Program Coordinator, Sarah Murt, would be happy to answer your questions or address your concerns! Contact her at the ACNWCB Office in the Courthouse Annex at 95 2nd Street in Asotin, by office phone at 509-243-2032, by cell phone at 208-791-5992, or by email at smurt@co.asotin.wa.us. Some projects and highlights for the year to come include:

- Whitetop, rush skeletonweed, spotted knapweed, orange and meadow hawkweed, Japanese knotweed, and sulfur cinquefoil continue to be top priority weeds for Asotin County and funding from the Rocky Mountain Elk Foundation and the Asotin County Conservation District will allow for the continued efforts against these noxious weeds.
- Aerial applications of the pseudomonas soil amendment targeting medusahead rye continued through 2017 and was monitored in 2018. The treatments have been seemingly effective, however manufacturing of pseudomonas was discontinued. These sites will continue to be monitored.
- The first populations of meadow and orange hawkweeds in Asotin County were found and treated in 2012. Less than ¼ acre of both species were treated in 2016. Work continued on this project, and the infestation continued to decline. The sites will be monitored throughout 2019, and treated as necessary.
- In 2014, 3.5 acres of a new Class A weed along the Snake River, common crupina, were identified and treated. Common crupina was treated in 2017 and 2018, resulting in population and area decrease. The sites will be monitored and treated in 2019.

Update on Biological Controls:

- Rush skeletonweed root moth has not proven a successful control agent and at this time there are no viable prospects for biocontrol of rush skeletonweed.
- The ACNWCB will be taking order requests for the yellow starthistle weevil, *eustenopus villosus*, again this year. **The biocontrol request deadline will be Friday May 31, 2019.** The ACNWCB will place the order and pay for shipping, and Landowners will need to pay for the weevils **at the time of pickup**. Contact Sarah for more information.
- Two new biocontrols were released in 2017. Black dot leafy spurge flea beetles were released at two sites along the Grande Ronde. Knapweed root weevils were also dispersed along the Grande Ronde corridor for control on diffuse knapweed. Impact from the biocontrols was seen in 2018, and additional biocontrols were released in other areas. All sites will continue to be monitored in 2019.
- The 2019 Yellow Starthistle Cost-Share Program is up and running again this year. The Cost-Share program can be used for chemical reimbursement, ground application, and aerial application for landowners outside of city limits and within Asotin County. Whether you have half an acre or ten-thousand acres, the ACNWCB encourages Landowners to take advantage of this program! The ACNWCB will match costs for yellow starthistle control up to \$500 per landowner. The Cost-Share Program itself is capped at \$13,000. Applications are accepted before, but are **due by May 6, 2019. Cost-share applications must be reviewed and accepted by the ACNWCB before purchase of chemical or any type of treatment of yellow starthistle.** Applications are available online or at the ACNWCB office. Sarah will even email you one if you like!

The ACNWCB would like to thank Asotin County Landowners for their vigorous efforts to keep our noxious weeds and invasive species in check. We look forward to seeing you at the Asotin County Fair in April next to the Cattlemen's booth, in the office, and in the field! And as always, if you have a weed in question or a concern, give the ACNWCB Office a call!

Healthy Living

Water: How much should you drink every day?

By Mayo Clinic Staff

<https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/water/art-20044256>

Water is essential to good health, yet needs vary by individual. These guidelines can help ensure you drink enough fluids.

How much water should you drink each day? It's a simple question with no easy answer.

Studies have produced varying recommendations over the years. But your individual water needs depend on many factors, including your health, how active you are and where you live.

No single formula fits everyone. But knowing more about your body's need for fluids will help you estimate how much water to drink each day.

Health benefits of water

Water is your body's principal chemical component and makes up about 60 percent of your body weight. Your body depends on water to survive. Every cell, tissue and organ in your body needs water to work properly. For example, water:

- Gets rid of wastes through urination, perspiration and bowel movements
- Keeps your temperature normal
- Lubricates and cushions joints
- Protects sensitive tissues

Lack of water can lead to dehydration — a condition that occurs when you don't have enough water in your body to carry out normal functions. Even mild dehydration can drain your energy and make you tired.

How much water do you need?

Every day you lose water through your breath, perspiration, urine and bowel movements. For your body to function properly, you must replenish its water supply by consuming beverages and foods that contain water. So how much fluid does the average, healthy adult living in a temperate climate need? The National Academies of Sciences, Engineering, and Medicine determined that an adequate daily fluid intake is:

- About 15.5 cups (124 oz. or 3.7 liters) of fluids for men
- About 11.5 cups (92 oz. or 2.7 liters) of fluids a day for women

These recommendations cover fluids from water, other beverages and food. About 20 percent of daily fluid intake usually comes from food and the rest from drinks.

What about the advice to drink 8 glasses a day?

You've probably heard the advice, "Drink eight 8-ounce glasses of water a day." That's easy to remember, and it's a reasonable goal. Most healthy people can stay hydrated by drinking water and other fluids whenever they feel thirsty. For some people, fewer than eight glasses a day might be enough. But other people might need more.

Factors that influence water needs

You might need to modify your total fluid intake based on several factors:

- **Exercise.** If you do any activity that makes you sweat, you need to drink extra water to cover the fluid loss. It's important to drink water before, during and after a workout. If exercise is intense and lasts more than an hour, a sports drink can replace minerals in your blood (electrolytes) lost through sweat.
- **Environment.** Hot or humid weather can make you sweat and requires additional fluid intake. Dehydration also can occur at high altitudes.
- **Overall health.** Your body loses fluids when you have a fever, vomiting or diarrhea. Drink more water or follow a doctor's recommendation to drink oral rehydration solutions. Other conditions that might require increased fluid intake include bladder infections and urinary tract stones.

- **Pregnancy or breast feeding.** Women who are pregnant or breast-feeding need additional fluids to stay hydrated. The Office on Women’s Health recommends that pregnant women drink about 10 cups (2.4 liters) of fluids daily and women who breast-feed consume about 13 cups (3.1 liters) of fluids a day.

Beyond the tap: Other sources of water

You don't need to rely only on what you drink to meet your fluid needs. What you eat also provides a significant portion. For example, many fruits and vegetables, such as watermelon and spinach, are almost 100 percent water by weight. In addition, beverages such as milk, juice and herbal teas are composed mostly of water. Even caffeinated drinks — such as coffee and soda — can contribute to your daily water intake. But water is your best bet because it's calorie-free, inexpensive and readily available.

Sports drinks should be used only when you're exercising intensely for more than an hour. These drinks help replace electrolytes lost through perspiration and sugar needed for energy during longer bouts of exercise.

Energy drinks are different from sports drinks. Energy drinks generally aren't formulated to replace electrolytes. Energy drinks also usually contain large amounts of caffeine or other stimulants, sugar, and other additives.

Staying safely hydrated

Your fluid intake is probably adequate if:

- You rarely feel thirsty
- Your urine is colorless or light yellow

A doctor or registered dietitian can help you determine the amount of water that's right for you every day.

To prevent dehydration and make sure your body has the fluids it needs, make water your beverage of choice. It's also a good idea to:

- Drink a glass of water or other calorie-free or low-calorie beverage with each meal and between each meal.
- Drink water before, during and after exercise.
- Drink water if you're feeling hungry. Thirst is often confused with hunger.

Although uncommon, it's possible to drink too much water. When your kidneys can't excrete the excess water, the sodium content of your blood is diluted (hyponatremia) — which can be life-threatening.

Athletes — especially if they participate in long or intense workouts or endurance events — are at higher risk of hyponatremia. In general, though, drinking too much water is rare in healthy adults who eat an average American diet.

Quench Your Thirst Beautifully With Flavor-Infused Water

<http://dish.allrecipes.com/fresh-ideas-for-making-infused-water/>

The Super Soak

Infusing water with the essence of fruits, herbs, and other botanicals helps you drink plenty of liquids without the downside of excess calories, sugars, and artificial flavorings. It's beneficial hydration in every refreshing sip.

But before you get started, there are a few essentials you should know to make sure that drink of infused water is as good—and good for you—as it can be.

Best Practices

Ingredients: Choose organic when you can. Wash produce and rinse herbs to remove chemicals, pesticides, and other residues.

Water: Use cold or room temperature filtered water. Hot water makes produce fall apart faster and can compromise the nutrients you're trying to coax out of the ingredients.

Vessels: Glass, plain and simple. You can splash out for purpose-built infusing pitchers and bottles, but you don't have to. Spend on fresh produce instead.



Prep Tips

- Softer fruits like citrus and strawberries can be sliced thick, thin, halved, or quartered. Harder fruits like apples should be sliced very thinly because they take longer to release flavors.
 - Crush fibrous ginger root, rosemary, and lemongrass with a muddler or wooden spoon; tear or crush leafy herbs like mint, basil, and cilantro to release their oils.
- Loose herbs and flowers—lavender, rose petals, dried hibiscus—can be corralled in a tea infuser or cheesecloth.

Soak Time and Temperature

Infuse water at room temperature for no more than 2 hours. After that, put it in the fridge to prevent bacterial growth.

- Cucumbers, citrus fruits, melons, and mint flavor water almost immediately. Apples, cinnamon, fresh ginger root, and rosemary need an overnight soak in the fridge.
- Melons and sliced strawberries start looking waterlogged after a few hours; citrus, and whole berries look pretty good even after hours in the fridge.
- After 4 hours, unpeeled citrus can make water taste bitter. To make a big jug of infused water for a party, peel the citrus before soaking. Or you can soak it unpeeled for 4 hours, remove it, and add fresh slices for looks. (And keep that water icy cold for food safety.)
- If you don't drink the water within 24 hours, strain out the solids and refrigerate for up to 3 days.
- To keep sipping all day long, refill your infused water container when it's half full. It will be weaker than your first drink, but still flavorful.

More Ideas for Infused Water

- ◆ Cucumber + lime + strawberry + mint
- ◆ Lemon + raspberry + rosemary
- ◆ Orange + blueberry + basil
- ◆ Lime + ginger root + basil
- ◆ Watermelon + honeydew + mint
- ◆ Cucumber + mint + jalapeno
- ◆ Lemon + thyme
- ◆ Orange + hibiscus + star anise
- ◆ Orange + cinnamon + cardamom + cloves

**STAY HYDRATED,
MY FRIENDS!**

Infused Water IDEAS

Try These Refreshing Combinations

Lemon	+	Thyme	
Cucumber	+	Lime	Strawberry
Orange	+	Star Anise	Hibiscus
Watermelon	+	Honeydew	Mint
Lime	+	Ginger Root	Basil
Cucumber	+	Mint	Jalapeno
Lemon	+	Raspberry	Rosemary
Orange	+	Blueberry	Basil

Gather loose herbs and flowers in a tea infuser.

Crush ginger and leafy herbs to release flavors.

Keep it simple. Think of flavor combos you like in other recipes and build from there.

allrecipes!