



# GROUNDDED

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Kris Nesse & Barbara Guiland

## Co-Master Gardeners of the Year Awarded

Barbara Guiland and Kris Nesse were recognized as co-Master Gardeners of the year for 2015. They were both deserving candidates and received recognition for their exceptional contributions to the Master Gardener Program and outstanding accomplishments in Grant-Adams Counties communities. They both have been influential in leading the way in educating and in contributing countless hours in the following areas:

- Community involvement
- Educational impact within the program and/or the community
- Promotion of the WSU Master Gardener program and its goals
- Leadership
- Commitment
- Legacy - lasting contributions to the program and/or community

Barbara Guiland deserved special recognition for organizing the Moses Lake Farmers Market Plant Clinic, the on-line clinic, and the Monday plant clinics offered to the public at the WSU Extension Office from April through October. Barbara did more than organize the clinics; she drove them into existence. She organized the Master Gardener office in its new setting in Moses Lake and drafted instructions for MGs working in the office setting. She was responsible for developing the new intern training program in 2015, including drafting the syllabus, recruiting speakers, arranging venues, and volunteering as a presenter at orientation. Plus, Guiland has done so much more as a key Master Gardener, from making presentations and teaching classes in the community, to writing articles for the *Grounded* newsletter, speaking at the First Annual Columbia Basin Eco-Gardening Symposium, and mentoring/inspiring others within the organization with her wise counsel.

Kris Nesse served the program remarkably in 2015 as Master Gardener Foundation President with her highly positive, gracious, and welcoming approach and get-it-done enthusiasm. Nesse was open to and excited about promoting new MG ideas, including adding a President's corner article for the *Grounded* Newsletter. In addition to writing many informative articles for every publication, Kris incorporated strategic plan goals on agendas at MG Foundation meetings, working with other programs within the state to exchange ideas, and further educating our members, including co-hosting a delightful and special shower for one of the new MGs.

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Kris's accomplishments include working on the First Annual Columbia Basin Eco-Gardening Symposium planning committee and serving as its Master of Ceremonies, promoting the MG annual plant sale fundraiser through a highly viewed iFiber TV video, and growing many of the plants offered at the sale. She has made numerous gardening presentations to community groups and continued her support of the Ephrata pollinator garden project. Guiding and overseeing all the organizational aspects of the Master Gardener Foundation, Kris has mentored/inspired others with her wise counsel.

## **PASSING THE TROWEL (er, gavel) . . .** *By Kris Nesse*

Every two years at its October Board meeting, the Grant-Adams Master Gardener Foundation (MGF) elects its officers. On October 11, 2015, MGF members selected a mix of new and returning board members.



Terry Rice

The MGF welcomes **Terry Rice** as President for 2016-2018. Terry hails from Othello and has been an active MG volunteer since 2003, recently serving as MGF Vice-President. She also volunteers as Seattle Children's Hospital Auxiliary President and quilts for Lutheran World Relief Quilters. Terry taught elementary education for 31 years. She has two children and seven grandchildren. Winter sowing, vegetable and flower gardening, geraniums, succulents, and lavender are some of Terry's gardening specialties. She states, "The MGF has allowed me to network with other MGs and some great friendships have developed. It has also enabled us to develop our demonstration garden in Othello and to help the Adams County Pet Rescue participate in the Animal House Project by landscaping and planting the grounds of the Adams County Pet Rescue Building."

**Linda Crosier** assumed the Vice-Presidency. Also from Othello, and from the MG class of '03, Linda worked as Family Consumer Science teacher, Technology Coordinator, and Vocational Director at Othello High School for 32 years. Linda has two children and four grandchildren. During her nearly 13 years in the MG program, she has worked hard on the Old Hotel Drought Tolerant Garden as well as on the Adams County Pet Rescue landscaping. She also serves on the Othello Beautification Committee, Lutheran World Relief Quilters, Seattle Children's Hospital Auxiliary, and Othello Library Board. She enjoys quilting, knitting, stained glass, and reading, and specializes in flea market gardening. She believes that the Master Gardener Foundation has enabled communities to develop and maintain themed gardens that have educated many community members.

**Mark Amara** returns for another two years as Secretary. Mark has been a MG volunteer since 2007. He is a passionate vegetable gardener and has sold produce from his mini-farm at the Moses Lake Farmers Market for 20 years. He is retired from the USDA Natural Resources Conservation Service, and still continues work part-time as an Archaeologist for NRCS and conservation districts. Mark is a published writer and also prepares grants for nonprofits. In addition to MGF, he serves on the Boards of the Coulee Corridor Consortium and the Oregon Paleo Lands Institute. Mark and his wife of 39 years have one adult daughter. Mark believes the Foundation holds the Grant-Adams MG Program together.

The Treasurer position will again benefit from the skills of **Diane Escure**. She has been a MG since 2011, and is an avid flower and vegetable gardener. Diane has been a long-time volunteer in schools. She says, "I am impressed with the extensive knowledge of Master Gardener volunteers and continue to learn more and more through the program."

The new At-large Representative is **Kris Nesse**, retiring MGF President. MG-trained in '09, Kris is a retired teacher. She worked with all ages from pre-school to adult, spending the last 20 years of her career with 'big kids' in grades 6-12. In addition to her MG and MGF volunteer work, Kris has served on the boards of

Ephrata Farmers Market and the Cloudview Foundation. She serves on the Soap Lake Parks and Recreation Committee, and is an avid long time volunteer with Destination Imagination, a problem-solving program for kids, and the Association of Cancer On-line Resources. She enjoys spending time with grandkids and growing vegetables and herbs. Kris has been married close to 40 years and has two children and five grandchildren.

The Grant-Adams Master Gardener Foundation trowel has been passed. We thank these officers for their willingness to help guide the organization through its next two years!

## New President's Column . . . *By Terry Rice*

Gardeners know how it is in the spring . . . can't wait to get out there and work in the yard. Sometimes we have new tools to try out and are sure our best work can be done with that special tool. You know the one I'm talking about. Well, this year I have been given the Master Gardener Foundation trowel. I just hope I know how to use it to make everything continue to "grow" in our organization. A number of Master Gardeners have been entrusted with this trowel before and they assure me I can make it work. I know I will try my best, and, with their knowledge and mentoring, I hope to serve all of you to the best of my ability. Thank you for giving me this opportunity.

## Master Gardeners Support the Grant County Fair



Once again the Grant-Adams Master Gardeners volunteered to help the public check in their fruit, vegetable and herb entries at the county fair last August, assisting them with their entry forms, as well as judging all the entries and displaying them on long tables at the Agriculture Building. MGS also offered a clinic from noon to 4 pm daily to answer any gardening questions.



Co-Chairs Karen Fowler and Trudie Walsh oversaw all the activities for the event. They put together an educational display to educate the public on the benefits of composting using three bins to show the various stages of composting. They also created several posters showing examples of what items are best to compost and how to trouble shoot problems, if any developed, as well as displaying solutions to problems, such as how to control flies and odors. Although the total number of entries this year was not counted, it was believed to be down slightly from the 726 entries in 2014.



Trudy Walsh & Karen Fowler

Barbara Guiland, Kris Nesse, and Mark Amara served as produce judges, and nearly a dozen other MGS helped with the event. Exhibits not picked up by the end of the day after the fair were donated to the Moses Lake food bank.



Barbara Guiland judging entries



Fair winners were awarded ribbons in many categories

## WELCOME MG CLASS OF 2015! . . . *By Kris Nesse*

Botany, Soil, and Weeds, oh gee!  
 Pests, both Vertebrate and not.  
 Fruit Crops, Lawns, and Entomology.  
 Learn all this and more  
 In order to make plant and bug and disease ID.  
 Read, study, test for months  
 And a Master Gardener volunteer you'll be!

Grant-Adams Master Gardeners welcome seven new trainees to the wonders of community education in gardening and environmental stewardship this fall. These individuals applied, were selected, and are currently engaged in rigorous on-line coursework through Washington State University (WSU). Trainees and interested veteran Master Gardeners have also participated in an orientation and five labs. Karen Lewis, WSU Extension Educator, presented a fascinating in-the-field class on current research and the reality of growing fruit in the Columbia Basin. Andrew McGuire, WSU Crop Production and Soil Quality Specialist, taught the wonders of soil, that 'final frontier.' Trainees were recently introduced to Integrated Pest Management by Kris Nesse, MG volunteer. Tim Kolhauf, WSUE Agent/MG Program Coordinator in Spokane County, informed everyone about Landscape Tree Selection in Eastern Washington. Finally, Jared Whitaker from Planet-Turf enlightened the trainees about the art of Growing and Maintaining Turf in Eastern Washington.

Volunteers are trained every other year in Grant-Adams Counties. The class of 2015 includes:

- **David Geer** has lived in Moses Lake since 1964. His family lived on a farm/cattle ranch. Dave has a BS in Forest Management and is retired. His two daughters live in Moses Lake. He volunteers by tutoring GED students at BBCC, and helps elementary students learn about plants and gardening. Dave enjoys reading and writing and has published two books. He also enjoys home repair work and woodworking.
- **Kerri Furman**, Ephrata, moved to the area in 2012 to marry her husband, David. She is an avid knitter and claims, "My husband now has an extensive collection of hand-knit crazy socks." Kerri also loves to cook and experiment with new recipes. Her main gardening interest is her backyard vegetable garden that she uses to supplement her cooking obsession and to preserve as much of summer as possible to enjoy in the winter months.
- **Duane Pitts**, following retirement, he and his wife moved to Moses Lake in 2013. Duane retired after 42 years of teaching high school English and still practices his profession as an adjunct for the BBCC English Department.

He holds BA, MA, and Ed.D degrees, and is also National Board Certified! His family includes three sons and five grandchildren. Duane enjoys gardening, reading, and being with his family.

- **Judy Rector**, Ephrata, was with a large insurance company in Seattle for 17 years, then traveled extensively before owning and managing an RV park in Texas and then one in Ephrata with her husband. After a second retirement and her husband passing away, Judy ran a bed and breakfast in Wenatchee before returning to Ephrata. She has two sons and two grandchildren. Judy now volunteers as a CASA for Grant County, and with the “Friends of Quincy Animal Shelter.” Her vegetable garden generally produces enough to donate quantities to the food bank.
- **Deana Riley**, also from Ephrata, retired in 2010 after serving 25 years with the US General Services Administration and US Navy. She says, “This basically means I’m skilled in vehicle maintenance and repair and can crash some of the best computers.” Deana and her husband moved to Ephrata after retirement to be near his parents and other family. She is a member of the Ephrata Garden Club and enjoys volunteering at the Columbia Basin Memorial Rose Garden.



Other trainees for 2015 are **Lisa Villegas**, Royal City, and **Myra Clark**, a Coulee Dam resident. These new MG trainees bring an incredible array of background experiences, amazing skills, and tremendous enthusiasm to the Grant-Adams Master Gardeners. They will spend their 2016 intern year volunteering a minimum of 50 hours, half of those in plant clinic settings. It’s quite a commitment. We honor and welcome all of them!

Back row: Kerri Furman, Deana Riley, David Geer, and Duane Pitts  
Front row: Myra Clark and Judy Rector; not pictured is Lisa Villegas.

## Advanced MG Education Conference

*Editor’s Note: WSU Master Gardeners are encouraged to attend the annual advanced education conference, which is held in a different city nearly every year. The 2015 conference was in Vancouver, Washington, September 17-19, 2015.*

Master Gardener Jean Anderson represented the Grant-Adams MGs this year at the annual statewide conference attended by approximately 360 people. She was surprised that there were no handouts although all presentations were available on line at Dropbox (<http://tinyurl.com/MGConferencePresentations2015>). Jean noted that there were books for sale, a marketplace, auctions and raffle items that benefited the MG Foundation of Washington. Classes were divided into several tracks including MG skills, environment, food, and general gardening. Two of the sessions Anderson found most fulfilling included her notes on the following topics:

- **“Chickens in the Garden,”** a talk led by Jessi Bloom, ecological landscape designer, professional horticulturist, and certified arborist. She described chicken-keeping basics, simple garden plans to get started, tips on attractive fencing options, the best plants and plants to avoid, and step-by-step instructions for getting a chicken garden up and running.

Many gardeners fear chickens will peck away at their landscape, and chicken lovers often shy away from gardening for the same reason. But keeping chickens while maintaining a beautiful garden can both be achieved! Chickens can actually help gardens grow and thrive just as the garden does the same with chickens. Chicken habitats can be created which gives them foraging and shelter options. Who could resist having these little cuties pecking around for pests, distributing fertilizer, scratching and aerating the soil, and leaving delicious eggs as a bonus?



Photo credit for the chicken in the garden--Kate Baldwin, from the **Free Range Chicken Gardens** book

- **“GMO Foods,”** presented by Gail Langellotto, PhD., OSU Dept of Horticulture, and Statewide MG Program Coordinator.

Some of the questions she answered included what is a GMO (genetically modified organism)? And what is a Genetically Modified Food (GMF) and what are transgenics? DNA has been altered by genetic transfer techniques as opposed to traditional plant breeding which can take years or decades.

The process on how to make a GMO was described as finding gene(s) with desirable trait(s), placing genes into a vector, placing gene-carrying vectors into plants, selecting plant cuttings from a plant where a vector was successfully placed and growing cuttings from plants expressing desirable traits.

GMO crops are already on the market: alfalfa, corn, canola, cotton, squash, sugar beets, soybeans, and potatoes. In the case of soy, cotton, and corn, the majority of crops grown in the USA are already GMO. These GMO crops display herbicide tolerance, insect and disease resistance. Other traits being selected, but not yet commercially available, are cold tolerance, drought and salinity tolerance, and increased nutrition (such as golden rice).

One of the main concerns is trans-gene escape, where the gene hybridizes into wild or weedy plants. This may alter food web dynamics, but it is not yet documented.

## Grant-Adams Master Gardener Tours International Flower Show . . . *By Pat McAfee and Cynthia Calbick*

*Editor’s Note: This question and answer article highlights a trip to the Chelsea Flower Show in London, England, taken by Cynthia Calbick. Fellow Master Gardener, Pat McAfee interviewed Cynthia Calbick about the experience.*

In May 2015 Cynthia and Don Calbick traveled to England to see the Chelsea Flower Show in London.

**Question:** Since the Chelsea Flower Show was a long-time travel goal of yours, what was it about the event that piqued your interest?

**Answer:** “I read about it many years ago, and seeing it was one of my goals when I retired 15 years ago. At that time I joined the Royal Horticultural Society (RHS) hoping membership would somehow lead me to Chelsea. It is a large and prestigious event centered on one of my favorite things, flowers. At a MG meeting last winter, a flyer about a tour to Chelsea was circulated. The timing and plan seemed perfect, so husband, Don, and I started making plans. We’re very glad we did.”



Cynthia Calbick at Royal Botanic Garden at Kew

**Question:** Many Master Gardeners have visited the Seattle Flower and Garden Show. How would you compare it to Chelsea?

**Answer:** “It is similar to, but larger than, the Seattle Flower and Garden Show. Chelsea has large and small show gardens. Imagine exquisite flowers, trees, and shrubs grown perfectly for display and planted professionally in designer gardens. There are hundreds of other exhibits also with beautiful displays. Each prospective exhibitor presents a proposal, which is juried, and the best are selected to present at the show.”

“The displays inside and out are much more floriferous than the Seattle show and more densely planted. And everything is blooming and in perfect condition, regardless of the plant’s ‘normal’ bloom time.”

“The food at Chelsea was exceptional as well. There were 11 restaurants, offering everything from hot dogs to lobster, and from beer to champagne.”

**Question: Where is Chelsea, and how many people attended the show?**

**Answer:** “Chelsea is in London, England, and the show has been put on by the RHS each spring since 1862 on the Royal Hospital Grounds. The setting is very park-like, with small grassy areas and pedestrian streets. The gardens and exhibits are placed in the spaces beside the streets. The grounds are beside the Thames River, which is accessible from the show. About 180,000 people attend the show each year. Each attendee buys a ticket for one of the 5 days of the show. Ticket prices are 59 British pounds (about \$95 US) for RHS members and are higher for non-members. The Queen and her entourage visit the show the day before the official opening.”



Cynthia by display gardens

**Question: What did you see at Chelsea?**

**Answer:** “We saw large and small gardens in glorious detail. There were competitions for floral arrangements; unbelievable flower displays by plant sellers; and the RHS product of the year competition which featured at least 50 new products. An invitation to exhibit is only extended after an exhibitor has won several previous awards. There are exhibits by over 1,000 tradesmen (vendors) that are every bit as well designed and presented as the show gardens. There was live music, and RHS exhibits with gardening advice.”



Cynthia photographing flowers

“I fell in love with the look of the flowers and plants from the moment I saw my first garden. Every flower was perfect in bloom and color. Trees and shrubs were flawless and everything was beautifully displayed.”

“The show gardens (15) are very large. Each one was designed by a well-known designer, and some incorporated art work, structures, hardscape and stone work.\* Literature is available describing the plants, garden theme, designer and garden sponsors. Some of the gardens are open and the public can walk into them.”

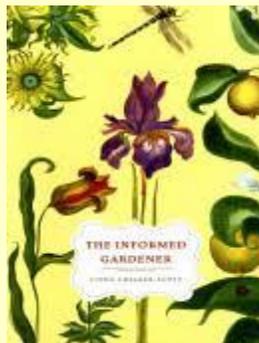
**Question: Besides the Chelsea Flower Show, what else did you see in London?**

**Answer:** “We toured two other outstanding gardens including the Royal Botanic Garden at Kew and the RHS’s Wisley Garden. We visited the Victoria and Albert Museum twice and the British Museum. Don and I both enjoy touring museums, and the Victoria and Albert has very large displays. We could easily have spent a week seeing it all.”

“This was a wonderful trip. I think anyone who enjoys gardening, or just enjoys a garden, should enjoy it.”

**Note:** \* Each outside display garden is 30 feet across by 100 feet deep, and costs approximately 50,000 pounds (\$92,000 US) or more.

## A Gardener's Holiday Book List . . . *By Barbara Guiland*



This list of suggested books for gift giving during the holidays is not only for curious gardeners, but also for lovers of the natural world and gardens/landscape in general. If you're thinking about gifts for others (or yourself) that have something to do with all or some part of the plant world, perhaps you'll find something that you'll like on this list. Master Gardener garden gloves are also great gift items which can be obtained from MGs Mona Kaiser or Barbara Guiland. Consider other gift ideas like canvas bags from the Moses Lake Public Library Foundation or fine pottery from the Moses Lake Museum and Art Center (MAC). Many of these books can be purchased there as well as on [Amazon.com](https://www.amazon.com). MG Mark Amara and I both have books for sale there too.

- **The Informed Gardener (2008)**

- **The Informed Gardener Blooms Again (2010)**

- **How Plants Work: The Science Behind the Amazing Things Plants Do (Science for Gardeners)**

(2015), by Linda Chalker-Scott. The publisher of all three books is University of Washington Press.

An Urban Horticulturist, writer, and WSU professor, this writer works directly with gardeners all across the US.

The first two books address ideas or "facts" you may have heard that may have no basis in science. Scott explains how to think about these ideas or practices. For instance, you may have heard "Add a layer of coarse gravel to the bottom of your pot to improve drainage"—Is a that fact? Scott explains the answer based on research. The third book explains the processes of plant life. One reviewer says "From water and fertilizer to light and soil, this is the most accessible (and accurate) guide to the inner workings of a plant available today." (Jeff Gillman).

- **Gardening Without Work: For the Aging, the Busy & the Indolent (2011)** by Ruth Stout, Robert Plamondon (Contributor), Publisher: Norton Creek Press.

This writer inspired me to start vegetable gardening again after I retired. There's got to be an easier way, I said.... and this book was so amusing.

Ruth Stout quote: "At the age of 87 I grow vegetables for two people the year-round, doing all the work myself and freezing the surplus. I tend several flower beds, write a column every week, answer an awful lot of mail, do the housework and cooking-and never do any of these things after 11 o'clock in the morning!"

- **Weedless Gardening (2000)** by Lee Reich 176 pages, Workman Publishing Company.

This book builds on Ruth Stout's belief in mulch, providing science-based backup for her methods. Reich wrote an essay that might persuade you to try his book: My Weedless Garden - Northern Gardener <https://northerngardener.org/..../MayJun09>. PDF.

**The Collector: David Douglas and the Natural History of the Northwest (2009)** by Jack Nisbet, 306 pages, Publisher: Sasquatch Books. This is a fascinating look at the early practice of plant collecting and naming in the Pacific Northwest. It's a great story.

**David Douglas, a Naturalist at Work: An Illustrated Exploration Across Two Centuries in the Pacific Northwest (2012)** by Jack Nisbet, 208 pages. Publisher: Sasquatch Books. This volume was the companion book to a major museum exhibit about Douglas's Pacific Northwest travels. Lots of illustrations and photos. Both of these books are published by Sasquatch Books.

**Singing Grass, Burning Sage (2003)** by Jack Nisbet, Publisher: The Nature Conservancy; most recent printing 2008. It's a wonderful introduction to our part of the state. "The land east of the Cascades known as the Columbia Plateau was originally arid shrub-steppe. Irrigated with water from aquifers and dams on the

Columbia River, it has become extremely productive agricultural land. This book describes what the shrub steppe is like, what changes are occurring, and what might yet be done to preserve some of its natural character."

**Sagebrush Country: A Wildflower Sanctuary** (1992) by Ronald J. Taylor, Mountain Press Publishing Company. Whenever we take a drive, I try to remember to put this book and a bird book in the car. There's always something to see and something I've forgotten the name of.

**Weeds of the West** (1996) Larry C. Burrill, Steven A. Dewey, David W. Cudney, B. E. Nelson, & Tom D. Whitson (Editor) 630 pages. Publisher: Univ. of Wyoming; 5th edition. Every Master Gardener should have this book. This full-color, easy-to-use guide describes important weed species from parsley to sunflower in the Western United States.

**Northwest Trees: Identifying and Understanding the Region's Native Trees** (2007) by Stephen Arno, Publisher: Mountaineers Books. Completely updated and expanded 30th anniversary deluxe edition. These are the most beautiful drawings of trees I think I've ever seen. It's a wonderful book to browse. It provides a new, easy-to-use illustrated identification key based on the most reliable and non-technical features of each species.

**Smithsonian Handbooks: Trees.** By Allen J. Coombs (2002) D & K Publishers.

How I wish I'd had this book with me on our trip to the Washington DC area this fall! There were so many trees that I did not know. Over 1,000 clear photos. "Identification Made Easy: For beginners and established enthusiasts alike, the Smithsonian Handbook of Trees explains what a tree is, how trees are classified, and how to keep a record of trees you have seen."

## Garden Friendly Cover Crops . . . *By Mark Amara*

Cover crops are as good for soils on all garden plots as they are on large farms. Besides providing weed control and (wind and/or water) erosion control, their cover shades the soil, and their residues can protect the ground surface standing, mowed, or tilled into the soil. As growing crops, they can break up compacted layers, recycle nutrients, take up excess fertilizer, help reduce weed pressures and diseases and control insects including nematodes. And, as cover crops mature, their flowers and pollen help attract beneficial insects to the garden. When cover crops are incorporated into the ground as green manures, they add nutrients and organic matter to the soil.

Cover crops are divided into perennials and annuals. Perennials are planted for year-round cover and annuals for seasonal coverage. Perennial cover takes longer to become established. However, having year-round grasses and/or legumes between trees and shrubs or separating garden rows can help control weeds and reduce potential for erosion. Most gardeners, however, prefer the annual varieties like grasses and grains as they are quicker to establish, put down extensive root systems, can capture unused nitrogen in the soil, and can be replanted over and over. It is important that crops are terminated by mowing or tilling preferably prior to or at seeding to reduce spreading and deter further uptake of nutrients from the soil.

Gardeners often plant cover crops in the fall to provide winter cover but they can do equally as well in other seasons, if planted through the spring and summer. Reasons for planting during a particular season vary with the gardener, species planted, and expected benefits. Legumes are natural choices for those who wish to add nitrogen to the soil, and grasses are a good choice to help compete with weeds on a broader scale and for quick establishment. Rather than planting homogeneous stands of one type of crop, mixtures are often planted to achieve multiple benefits. So, for example, try planting cereal rye and vetch, or cereal rye and winter pea, or annual ryegrass and crimson clover.

Examples of annual grasses and grains that thrive in our area include cereal rye, winter wheat, triticale, oats, barley, and annual ryegrass. Recommended annual legumes include vetches, clovers, Austrian winter

pea, and fava bean. Additional cover crops are restricted to frost free periods, typically planted in late spring and summer, and include buckwheat, mustards, sorghum-sudangrass, and millets.

Land in Grant and Adams Counties is naturally high in potential damage from erosive winds due to the way and times our light-textured soils are worked, ground is prepared, or crops are harvested. Our critical wind erosion periods are in the spring and fall. There are excessive erosion events during those seasons when soils have a tendency to be residue free. Either crops have yet to be planted where ground is prepared, are too small to ward off deleterious wind effects, or they have been harvested leaving inadequate crop residues on the soil surface. Grant-Adams Counties soils consist mainly of sandy loams, sands, or silt loams, which have a high potential to blow if left unprotected. Alternatively, if there is excessive rain or irrigation on unprotected soils, the soils will erode or leach essential nutrients including fertilizers and chemicals.

I have my own reasons for planting cover crops. My vegetable garden makeup consists of a light textured gravelly sandy loam called Malaga ([https://soilseries.sc.egov.usda.gov/osdname\\_look.aspx](https://soilseries.sc.egov.usda.gov/osdname_look.aspx)). Since Columbia Basin soils are naturally low in organic matter, typically with less than 1% in their native state, whatever I can do to improve the soil by adding beneficial vegetal material not only helps deter erosion but improves tilth, controls weeds, and helps build a healthier ecosystem. So, for my purposes, annually I plant an (organic) winter legume in the fall, usually Austrian winter peas to which I add Rhyzobia bacteria inoculant mixed with the seed prior to broadcasting (and raking) to ensure nitrogen fixation will occur. The pea crop, which can grow through the winter and spring, is tilled under prior to it going to seed. It has the potential of adding as much as 100 lb/acre of nitrogen. In the late spring and summer, I plant (organic) buckwheat several times on idle or fallow parts of my garden to help control weeds and add organic matter. It germinates quickly in a matter of a few days and rapidly covers the ground. As it starts to bloom, I rototill it down and replant again if I am not using that area.



Buckwheat



Austrian winter peas

I also use (organic) straw or alfalfa in and between rows, which is incorporated at season end. Other cover crops that I have tried have included sudangrass and mustards, both of which commercial growers use to control nematodes and disease populations, and wheat.

Check out the sources below for seeding rates, availability, planting dates, species and further justifications.

### References

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## New 'Alien' Wasp Discovered in Washington . . . By Linda Weiford, WSU News

PULLMAN, WA - The discovery in Washington State of a parasitic wasp that kills its host like a scene from the "Alien" sci-fi movie has entomologists cheering from the west coast to the east.



Brown marmorated stink bug (njeds.Rutgers.edu)

That's because the wasp's victim, the brown marmorated stink bug, is far more wicked. What's more, the wasp, which hails from Asia and is being studied under quarantine in the U.S., has been found living at a public park in Washington.

Two small clusters of *Trissolcus japonicus* were discovered in Vancouver, WA, by a field technician with Washington State University's Tree Fruit Research and Extension Center, according to entomologist Elizabeth Beers who supervises the worker. "We did not expect to find this wasp here and are very excited about the discovery. In the insect world, we struck it rich," she said.

Here's why: Since 2007, the U.S. Department of Agriculture (USDA) has been directing studies of *T. japonicus* in quarantine laboratories to determine if it can be released in the wild to destroy the crop-wrecking brown marmorated stink bug. This stink bug species, which also originated in Asia, has caused millions of dollars in damage to fruit orchards in the Mid-Atlantic since it was discovered in Pennsylvania less than two decades ago.

When the weather turns cold, the bugs invade warm buildings. When crushed, they emit a stench like dirty socks. As the shield-shaped stink bug moves east to west, strengthening its grip on Washington, Oregon and parts of California, the equivalent of a SWAT team of insect experts has been searching for ways to stop it.

"Because the brown marmorated stink bug is not native to this country, it's less likely that natural enemies exist here to destroy it," said Beers, WSU's representative on this scientist SWAT team, which is comprised of some 52 scientists from 10 institutions. "As it turns out, there's one right under our noses."

And that would be the tiny *T. japonicus*, found by WSU tech assistant Josh Milnes on the leaves of a maple tree in Vancouver, first on Aug. 14 and again on Sept. 23. The 20-plus wasps in each cluster had just finished destroying the brown marmorated stink bug eggs that Milnes had left at a sentinel study site, said Beers.

Here's where things get "alien"-like. The female wasps, no bigger than a typed comma, lay eggs inside clusters of stink bug eggs. After a wasp egg hatches, the larva eats the stink bug egg host, "killing it in the process and then bursting out as an adult wasp," Beers said.

The wasp specimens were sent to USDA research entomologist Elijah Talamas in Washington, D.C., who positively identified them as the Asian wasp species, explained Beers.

"When I heard the news, I thought, oh my gosh, this is a biocontrol game-changer," said USDA entomologist Tracy Leskey in West Virginia, leader of the national stink bug research team.

Though several *T. japonicus* wasp clusters have been found in Maryland and Virginia during the past two years, "the fact that the wasp showed up 3,000 miles away in Washington tells us that the stink bug's natural enemy is deployed for attack," she said. The discovery also suggests the wasp was accidentally brought to this country multiple times, much like the very stink bug it destroys, she explained.



Alien Wasp



The efficient killer is only the size of a typed comma. (Photos courtesy of the USDA)

### Biological warfare hitchhikers

Most likely, *T. japonicus* traveled here undetected in stink bug egg masses on plant cargo shipped from Asia, said USDA research entomologist Kim Hoelmer, who studies the wasp species in a quarantine lab in Delaware. It's also possible that an adult wasp or two hitched a ride on a jet and simply deboarded with the humans.

So what happens when scientists hunting for a bug killer discover the killer living in a public park?

As scientists monitor *T. japonicus* to see how much it spreads in the field, research will continue in lab settings, said Hoelmer.

"We don't want to introduce a non-native wasp that kills native stink bug species beneficial to our crops," he explained. So far, however, the research looks promising that this tiny prizefighter favors the brown marmorated variety, he said.

Oh, and more good news for Americans: this wasp doesn't sting.

### Reference

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