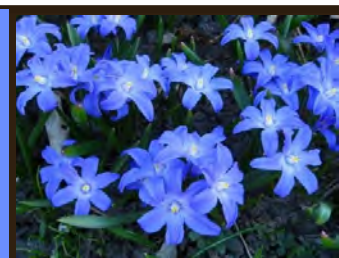


Plant Science Says



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Gallatin Valley Farm Fair by Joanna Gress

This year the Wanner Lab participated in the 6th annual Gallatin Valley Farm Fair, a two day event held at Brainards' ranch northwest of Belgrade that seeks to educate local area 4th graders about agriculture. Groups of 20 students rotated through 16 agricultural stations every 15 minutes and participated in a variety of activities including learning how bees pollinate, milking cows, weaving, identifying weeds, seeing how farm animals work and making ice cream. In addition to the 16 stations, students also got to go on a hay ride during lunch where they learned about different types of irrigation and water conservation.

the 10th largest economy and we are the 6th largest honey producing state.



I asked the students what bees do and my top three answers were 1) make honey 2) sting and 3) pollinate plants. I focused on the pollination and asked the them what it was and why it was so important. I used almonds as an example; almonds are one of the most honeybee pollination-dependent crops in the United States. Every year two thirds of all the commercial beehives in the U.S. are trucked to California to pollinate the almond orchards, which is approximately 1.3 million of the 2.4 million hives. I next asked the students how bees make honey. They do so by collecting nectar from flowers and evaporating it down. Nectar is about 70% water while honey is only 20%. I had them guess how many visits to a flower it would take to make one pound of honey. They loved to guess and were shocked to find out it was 2 million visits. We then focused on why bees make honey — it is not just for us to eat but also for them to eat in the winter when it is cold and they need food to create metabolic energy to produce heat to maintain the core temperature of the hive. A typical hive needs to make around 70 pounds of honey to survive the cold Montana winters so that means they need to visit at least 140,000,000 flowers. Lastly we talked about honeybees stinging you; most of the



I hosted a honeybee station at this event and with the help of undergraduate Emily Rohwer educated 650 students about the importance of honeybees as pollinators for agriculture.

This was the first year that honeybees were at the farm fair and

they were a big hit. I brought two observation hives with about 1000 bees each. I also brought things for the students to feel and touch including an empty hive with empty frames with drawn comb and a container of beeswax. Honeybees pollinate over 130 crops in the U.S. and bee pollination is a \$15 billion industry. In Montana, beekeeping is

time bees don't want to sting humans as the bee then dies. Bees are usually very peaceful and just want to be left alone to do their business, so if you leave bees alone they will leave you alone.

They really loved the bees and asked lots of questions like where was the queen (back home in the main hive), was there a king bee (no such luck guys), how many times have I been stung (25 times last summer), how many bees are in a hive (around 70,000), how many hives do I have (12 so far) and where are they (MSU Hort and Post farms). This was a really rewarding experience and though I was hoarse at the end of the two days as I had given the same talk 32 times, I had educated the next generation on the wonders of honeybees and maybe got a few of them thinking about keeping bees in the future.

Gallatin County Farm Fair By Heather Rimel

The sixth annual Farm Fair was once again held at the Brainard's Ranch outside of Belgrade. Six hundred plus students from around the Gallatin Valley were in attendance over two days and participated in 16 educational stations. These activities allowed them to get involved with hands on activities that included getting their hands dirty and learning where their food comes from. The Crops booth consisted of presenters Kara Rowe (Wheat and Barley Committee), Ron Larson (MSGA), Jim Berg (PSPP),



Ron Larson, Heather Rimel, and Kara Rowe

Mary Burrows (PSPP) and Heather Rimel (MSGA). Pencils that read "Plants are fun, food and fuel" were handed out to each of



Jim Berg showing different type of seeds to the children

the students and were sponsored by Dan Biggerstaff with Barkley Seed, Inc. as a reminder when they went home. While at the Crops booth they had ten minutes to learn about wheat, barley, alfalfa, peas and oats. Jim showed them an alfalfa plant and compared its size next

to germinated sprouts and the tiny seeds they originated from. Ron made the students hungry by picking up some "good" and "bad" bread and cookie examples from the Cereal Quality lab to show the differences in flour types. Kara's interactive presentation showed a map of where Montana's wheat goes and what is produced from it in various countries around the world. Mary (the "seed doctor") talked about some of the oil and pulse crops that might be seen around the valley/state. One of the children's favorite activities was once again digging their hands into the buckets of seed to find out which ones were soft and which ones felt like marbles (and this year there were fewer kids



Mary Burrows teaching about crops in the valley

that tried to eat the seed!). By the end of the day the presenters were exhausted and we hope that each of the attendees were able to take home a little more knowledge of the food they eat and the agriculture that surrounds them.

Bob Johnston and Computer Assistance

Congratulations to Bob Johnston on his retirement! Bob worked for MSU for 38 years. Even though he will no longer be employed by MSU, he will be working as a computer consultant starting September 1. If you would like to hire Bob on an hourly basis, please contact him at 539-5600.

Please join us in wishing Bob all the best in this new chapter of his life on Thursday, June 17 at 10:00 a.m. in 108 PBB/Mathre Courtyard.

PSPP Graduation Party

The Departmental graduation party was held on May 7 in 108 PBB. Many of the graduates and their families stopped by to meet faculty and friends. Thank you to Joanna Dumas for doing a wonderful job of organizing the party (see page 6 for pictures).

Stringing of the Hop Bines' Event By Victoria Blake

You are invited to the First Annual 'Stringing of the Hop Bines' Event at the MSU HopYard. Attached is an event flier with a map to the hopyard.

When: Saturday, June 5, @ 10:00 a.m.

Where: MSU Hopyard, Garfield, west of 19th.

Turn south on the gravel road @ Montana Ag. Experiment Station sign.

Why: We need to place new bine supports every year and many hands (and throwing arms) make light work.

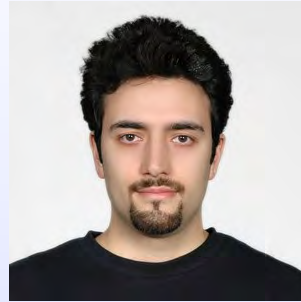
No experience is necessary and volunteers will receive free hop plants. Volunteers can reserve plants for the fall harvest.

What happens if it rains!?: Call us, Tom and Vic Blake at 586-8758 if it has rained within 12 hours. We may postpone the event.

Bacteria that cause snow and rain

David C. Sands was recently written up in the May 24, 2010 issue of the *New York Times*. The article was entitled, "From Trees and Grass, Bacteria That Cause Snow and Rain." *New York Times*, May 24, 2010 issue.

New Graduate Student—Siavash Taravati (Ivie)



Hello! I am Siavash Taravati from Iran and I am working toward a Ph.D with Mike Ivie. As an entomologist, my favorite group to study is the darkling beetles (family: Tenebrionidae).

My wife, Negar Fallahazad, is also here with me. My hobby is playing the piano. I am glad that I am here and I appreciate any contact from other students and faculty.

Custodian Dean Makes the News



Dean Ridgway, David King, and Mitzi Gillaum at Rae Water and Sewer

Dean Ridgway, our custodian for the 2nd and 3rd floors of the Plant BioScience Building was recently fea-

tured in an article in tpo (Treatment Plant Operator). During the day Dean is a certified water and waste water operator for the Rae Water and Sewer Treatment Plant. His duties include overseeing the lab work that analyzes chemical and biological activities within the waste water.

Congratulations Dean!

Grants

Li Huang has been awarded a \$1.32M 3-year NSF grant to lead a multi-national team to 1) characterize two rust resistance suppressors and their mechanism of action(s) in wheat; 2) transfer this new resistance to wheat breeding programs in both Kenya and

China; and, 3) screen project germplasm for resistance against other emerging rust disease threats across this broad region. In addition, the project will provide an exchange program to introduce young researchers from Kenya and China to cutting-edge technologies,. It will also create opportunities for young researchers from the USA and Australia to learn from local knowledge in Kenya and China.

Bob's Byte

By Bob Johnston

Tips on how to avoid phishing schemes provided by Sunbelt Software

Messages and subjects can vary greatly but the giveaway is that no financial institution, eBay, PayPal, etc. will ever use email as a means to contact you about providing any type of personal information such as user names, passwords, social security #'s ,or account numbers via an online form. If they do I would advise to not provide any of that information on the web. Contact the institution or business directly. Often times you can ask them about it and they will confirm that it is a scam.

NEVER assume or trust anything... especially the from field in the emails. Just because an email shows it came from support@paypaldotcom does not mean it did. I won't tell you how to go about doing it but rest assured that it is very easy for a scammer to change the From field to say any address you want even if it did not originate from that address. This is common practice for scammers to do this.

Check out the links that you click in the emails. There again - just because it says www.ebay.com does not mean that is where you are going to go. Scammers can easily copy contents from a legitimate website and use it to put a "real" looking fake one up on another server somewhere else. On the front, the website may look like eBay's website, but behind what you see very well could be a scammer's code trapping your input such as your account login and password. That is a Phishing Website.

Most phishing emails are going to direct you to an actual website. That is the only way

the scammer can get any input from you outside of simply replying to the email. Add that to one of things you never do also. Sending a reply will likely lead to nowhere but you just never know where it may go. This goes for any type of junk email. Sometimes replying does nothing but confirming your address is real and valid and will likely end up of more spam lists.

Links - click at your own risk! Most phishing emails are going to come in HTML format. The reason is because in an HTML formatted email a link can say anything and send you anywhere. You can't do that in a plain text email. In a plain text email what you see is what you get (or where you go). In most email clients you can hover your mouse over a link and it will open a bubble showing you the actual URL that you will end up at if you click on it. From there you will see exactly where you are going to wind up. If it remotely looks suspicious to you do not click on it. Many phishing scams will send you a website via an IP address rather than a domain. An example would be a link in an email that says to visit Microsoft's website "Click Here". You hover your mouse over the 'Click Here' link and a bubble pops up and shows the URL <http://123.45.67.89/website/msn/default.asp>. Common sense would tell you that to get to Microsoft's website you would probably type something like www.microsoft.com. URL's pointing to IP addresses are dead giveaways to a phishing scam. If you do click a link in an email and it takes you to what looks like a legitimate site, take a look at the URL at the top and see if the URL looks like it coincides with the site you are on. If in doubt open a new browser and go to the website in question and compare the two URLs. They should look fairly similar. If still in doubt get out of it, don't click on anything else or enter any kind of information that it may ask for. Better to be safe than sorry.

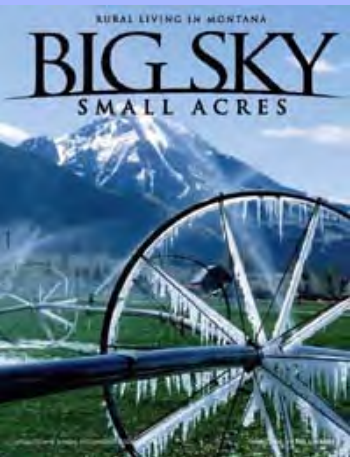
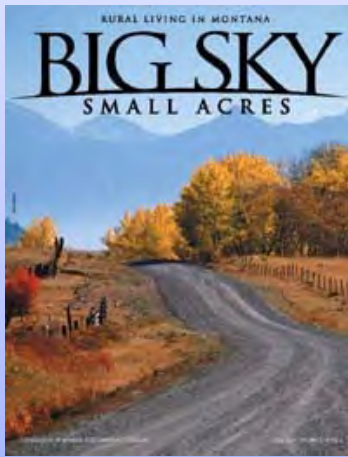
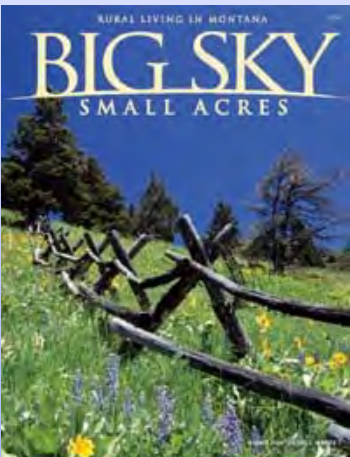
Web browsers have a very valuable tool, actually a toolbar. It's the status toolbar at the bottom. Most browsers have it turned on by default. The status bar will display the actual URL of a link on a webpage so you can easily see where you are going to end up at. Never versions of Microsoft Outlook and Windows

Live Mail will display the URL of a link in an email on the status bar. >From there you will easily know where you are going and be able to determine if the link is legitimate or if something smells Phishy.

This is my last Bob's Byte article – be safe out there!

**Big Sky Small Acres Magazine
By Toby Day**

One of the obligations I took on for MSU Extension was becoming the managing editor of the *Big Sky, Small Acres* magazine. This quarterly magazine funded by MSU Extension and NRCS is designed for small acreage landowners as well as Montana gardeners. Each magazine has several articles that are pertinent and timely about various subjects including: How to take care of livestock, understand soil, weeds, wildlife, laws, water quality issues, general yard and garden care



and maintenance as well as many other small landowner issues.

For instance, the spring 2010 edition of *Big Sky Small Acres* magazine has articles on home garden soil testing, grazing management of spring pastures,

an article about Hul's Dairy in the Bitterroot valley who produces electricity from the methane produced on their farm, how to calibrate a backpack sprayer, caring for a private well, how to know if your drinking

water is safe, management of Canada thistle, and an article by David Baumbauer on Hobby greenhouses. Each magazine also has a regular column of Master Gardener Q & A in which I take pertinent questions I have received and publish the questions and the answers of various yard and garden maintenance subjects.

For those that would like a free copy of the magazine, I left several in the PBB office with Irene Decker and some near the mailboxes in Leon Johnson Hall. If you like what you see in the magazine, please send in a subscription to *Big Sky, Small Acres*. The cost is \$8 per year, which comes out to only \$2 per copy delivered to your home. If you have any questions about *Big Sky, Small Acres* or would like to contribute an article of your own, feel free to contact me anytime- and 994-6523 or at toby.day@montana.edu

June Birthdays

Israel Davich	2
Zach Miller	4
Ron Larson	12
Li Huang	12
Ron Ramsfield	15
Jackie Kennedy	15
Luther Talbert	18
Eileen Carpenter	22
Bill Hoch	25
Stan Bates	28



See next page for PSCP Graduation Party pictures.

PSPP Graduation Party 2010



Alan Dyer, Andreas Fischer, graduate Erin Chamberlin and Bill Grey



John Sherwood, Jack Martin, Don Mathre and Jeff Jacobsen



Joanna Dumas, Student Affairs Coordinator, along with other attendees



Graduates Shelly Trainor, Brian Scheirer, Delisa Pearson, and Rachel Keller



Mike Ivie with recent MS grads Ross Winton, and Chrystal Maier



Florence Dunkel and Alan Dyer along with other attendees



Natalie Benson, Steve Benson, Mike Coventry, and Kim Benson

Delicious Blackberry Ice Cream **From the website thepioneer-** **woman.com**

One of these days the weather will actually be hot enough that ice cream will sound good!

2 pints fresh blackberries
Juice of 1/2 lemon
1/4 cup sugar
1 1/2 cups half-and-half
1 cup sugar
5 large egg yolks
1 1/2 cups heavy cream



Add blackberries to a medium saucepan with 1/4 cup sugar and lemon juice. Cook over low heat, covered, for 20 to 25 minutes. Drain using a fine mesh strainer, pressing berries to extract as much juice/puree as possible. Set aside.

Heat half-and-half and 1 cup sugar in a separate saucepan over low heat. Turn off heat when mixture is totally heated. Add heavy cream to a separate bowl. Beat egg yolks by hand or with an electric mixer until yolks are pale yellow and slightly thick.

Temper the egg yolks by slowly drizzling in 1 1/2 cups of hot half-and-half mixture, whisking constantly. After that, pour the egg yolk/half-and-half mixture into the pan containing the rest of the half-and-half mixture. Cook over low to medium-low heat (depending on how hot your stove gets) until quite thick, stirring constantly. Drain custard using a fine mesh strainer, then pour into the bowl with the cream. Stir to combine.

Add blackberry juice/puree to the cream/custard mixture and stir. Chill mixture completely, until thick. Place container in freezer to harden for an additional two hours. then freeze in an ice cream maker until thick. Place container in freezer to harden for an additional two hours.