

# *Plant Science Says*



*March, 2007*

## **Diagnosticians (and everyone else) unite! NPDN conference in Orlando, FL, January 2007**

**by Mary Burrows**

Will Lanier, Nina Zidack, and Mary Burrows attended the National Plant Diagnostic Network (NPDN) conference in Orlando, FL in late January. It was a great experience for all involved. Due to the flight schedules, we all arrived the day before the meeting and had some quality time checking out art museums in the area. We saw an impressive display of the Gee's Bend Quilts at the Orlando Museum of Art, and just missed a Charlie Parker sculpture at the Menello Museum of American Folk Art. While biding our time before the museums opened, we picked oranges off a tree and enjoyed them - very exotic for Montanans!



*Dr. Ron Brlansky and Dr. George Wall at the Citrus Research and Education Center, Fort Alfred, FL*

The meeting commenced with a poster session and social. We presented a poster on the mycotoxin web-based workshop conducted by Barry Jacobsen over the internet. We used a program called Adobe Connect to present a PowerPoint lecture and discussion session as well as a lab session including a slide set of mycotoxigenic fungi prepared by Don Mathre for each member of the Great Plains Diagnostic

Network (GPDN). Other participants were very excited about using this technology, and Nina, as a member of the teaching and education committee of the NPDN, will be leading a web-based seminar series by GPDN members on diagnostic topics this coming fall. It is a great vehicle for us to get together without having to travel, and to learn about topics of interest to our group. Luckily, we've got the best IT support in the GPDN, Will Lanier - he makes sure we're plugged in and on top of the latest technology. As an aside, we will be using Adobe Connect this summer for county agent updates throughout the state - rapid information distribution technology at work!

The meeting program was 'a little top-heavy' with administrative talks, some of which were actually good and some of which were a bit painful to sit through. Also painful was the wild temperature modulations in the room. One participant said 'now I know what my Taq polymerase feels like.' It was interesting to see how the NPDN has developed as a rapid response to invasive pathogens after 9/11 into a tool for communication and information distribution to the nation's diagnostic clinics. Of the ~250 people attending, we had representatives from all 50 states and Guam, American Samoa, Australia and other countries who either participate in our network or see it as a model for the development of a similar system in their country. One useful tool coming out of the administrative talks was the proposal for an 'acronym translator.' You could just type in the acronym and the program would translate it. The example was given: NPLB = No Plant Left Behind. It even provided a logo of a crying plant.

The director of the NPDN, Jim Stack of Kansas State University, gave a presentation about the importance of our network that made us feel really important. For example, I know that as Americans we don't spend a great deal of our income on food (11%), but I did not know that

people in developing countries spend an average of 75% of their income on food. And, did you know that Wal-Mart is the largest food distributor in the U.S.? Large grocery chains don't even come close. Apparently, it is forecasted that our exports will be increasing by 40% in the next 30 years, and since our production systems are more highly aggregated and less diverse than they used to be, that makes us much more susceptible to the introduction of exotics or evolution of pathogens that can harm our agricultural system. One thing I hadn't thought about is that, with much of our food coming from other countries, and with much of that food being wasted (garbage, composted, etc), that provides an ideal vehicle for pathogens to enter our food system. Just think of an orange with a fungal disease which could threaten our citrus crop. It could pass inspection because it is asymptomatic, get sold and not eaten, then lay on top of someone's compost pile in Florida next to some citrus trees and start an epidemic. I guess that's why we call Florida the 'sentinel state': they get all the diseases first! Another important point Jim made is that for human diseases, once they are identified and reported, the situation gets better. For plant diseases, once they are identified and reported the situation usually gets worse, leading to quarantines and economic losses, even on a national scale. This is an important challenge we face as diagnosticians, and control of information is a vital issue we need to address.

We had presentations from the experts about the latest threats to our agricultural system, plant diseases and insects. Examples include potato cyst nematode, citrus greening, and Ug-99, a new strain of stem rust heading our way from Africa. This was very informative. We also had break-out sessions with committees and a whole day with our friends from the GPDN. Not that I'm biased or anything, but I think the GPDN is one of the most active of the five regions in the NPDN, and we've got a great group of people to work with. We also learned a lot about the diseases each state saw last year, and have a heads up on what might be headed our way, such as a 'resistance breaking' strain of the virus causing Rhizomania, a new wheat virus, *Triticum mosaic virus*, and some pesky insect problems such as the pink hibiscus mealy bug. The entomology participation in the PDIS (Plant Disease Information System) group initiated at this year's meeting to facilitate cross disciplinary cooperation regarding specimens submitted via the PDIS. Other states do not have the history of cooperation between entomology and plant pathology like MSU, and comments were received that MSU would be a good model for cooperation

in other states. We also lead the nation in our use of AgAlerts, an electronic notification system for diagnosticians and specialists to deliver timely pest management updates by location. If you want to know what is going on in the state, go to PDIS.org and sign up! Other states were very interested in how we replaced our newsletter with AgAlerts, which deliver information in a much more timely manner, more cheaply and more easily than a newsletter, and only to the areas that are affected. The use of AgAlerts across the GPDN now seems more likely – kudos to Will for his efforts to develop AgAlerts and his vocal participation in the change management committee, taking our gripes to the source and making good things happen!

Will is also involved in the NPDN database committee, which is struggling with integrating many different data management systems into a single platform for data entry and analysis. One of the goals of the NPDN is to use the pest information gathered to model pathogen spread and develop risk management tools for farmers. An example is the soybean rust PIPE (Pest Information Platform for Extension and Education, <http://www.sbrusa.net/>). Consider the implications of a national decision support system using PDIS submittals to model outbreaks, forecast risk and appropriate pest responses. A couple of typos in the wrong place and they might call out the cavalry for the annual box elder bug infestation.... Luckily we have Will to protect us from deploying the National Guard to shoot the threatening box elder bugs.

Nina and Will were presented with a thank you letter for their participation in the APHIS-MDA (Animal Plant Health Inspection Service – Montana Department of Agriculture) Agro preparedness activity last fall in Billings. This activity trained a large group of Montana professionals how to react to an Agricultural emergency using the Integrated Command Structure (ICS, the same system used to organize resources to fight fires). Everyone can sleep easily since Nina and Will know who to call in the event of a pest emergency! On that happy note, Mary spent a day at the Citrus Research and Education Center in Lake Alfred, FL before heading back to Bozeman. She was hosted by Dr. Ron Brlansky, a virologist also working on the citrus greening problem (a.k.a. Huanglongbing, say that 3 times fast). The pathogen, *Candidatus Liberibacter asiaticus*, is transmitted by a psyllid, which are really cool because they feed standing on their heads (at a 45° angle). Dr. George Wall from the University of Guam was also visiting that day. Mary gave a seminar on her work at

Cornell with *Barley yellow dwarf virus*. She also picked oranges and grapefruit from Ron's tree and learned about extension efforts and information delivery in the citrus industry. Overall, a great use of time and we came back re-invigorated (one might also say 'overwhelmed') by all the work that needs to be done, and with new tools and information to accomplish our goals.



### Seed Lab and Electronic Marketing By Carol Flaherty

New capabilities in the Montana State Seed Lab will add to the ability of Montana farmers to do electronic marketing, the head of the seed lab says.

"There is now real-time availability of the lab analysis to our clients," said Harold Armstrong. "The results are posted to the Internet within about 30 minutes of the test being completed for a sample. That allows our clients to email a PDF (file) to their potential clients showing standard tests such as purity and germination." The Internet-based services have been available since January.

Miriah Idland, secretary at Bruce Seed Farms in Townsend, said she already prefers the new system. Being able to print the PDF "is great, because faxing distorts the image so badly," she said. "It's nice, too, because you can get an additional copy any time you need one." Nick Lowen, a sales representative at Wildhorse Seeds in Havre, said the new system is better because it is a lot faster.

"Another thing I like is that I can see that the lab got the sample and when they got it," Lowen said. "That saves me a phone call."

The Montana State Seed Laboratory provides

seed testing services to regional farmers, seed growers, and the Montana Department of Agriculture. It is housed at MSU, but chartered under the state Department of Agriculture and paid for by service fees. Montana has no private seed labs, Armstrong said. The lab processed about 5,200 samples in 2006. Each sample may include several tests. Some tests take two hours, some as much as 16 hours to complete.

The lab works closely with the Montana Seed Growers Association to test registered and certified seed to make sure they meet the requirements of the association. It also tests samples of crops such as peas and lentils that must meet standards to get federal crop insurance. It has a new service called a herbicide bioassay for alfalfa growers who think that pollen from Roundup Ready seed may have blown into their field. Organic alfalfa growers may need to show that their seed has not had pollen from



genetically modified plants drift into their crops. Other clients include farmers and ranchers who want to test seed, the Forest Service, Bureau of Land Management and Natural Resources and Conservation Service.

The new services at the seed lab are based on Pure Harvest Laboratory Software. The same software is being used by labs in several states, including Washington, Idaho, Wyoming and Colorado.

"Another very cool feature will be that the Pure Harvest Web site will allow free advertising for the clients of Pure Harvest Labs," Armstrong said. "You have a result. You haven't sold all the seed. You can post x-pounds of green needle grass for sale."

In addition to the Internet-based services, the Montana State Seed Laboratory has been approved by BASF, the agrichemical company, to perform "Clearfield" testing of spring wheat and

winter wheat. The test confirms whether Clearfield winter wheat is tolerant to several herbicides and chemicals.

"Clearfield is one of the few choices farmers have if they wish to plant wheat in areas infested with jointed goatgrass," Armstrong noted. The lab at MSU is one of a handful in the country that are approved to do the Clearfield test. The process requires yearly lab certification.

In 2006, the lab moved from MSU's Leon Johnson Hall to Room 40, Marsh Laboratories at the corner of 19th and Lincoln Street in Bozeman.

### Humphrey Wanjugi receives Ph.D.



Humphrey Wanjugi, Mike Giroux and Jack Martin's graduate student received his Ph.D. February 28. Humphrey will be starting a post doctoral position March 20 with USDA/UC Davis (Genomics and Gene

Discovery Unit) at Albany, California. Congratulations Humphrey!

### Grants

Phil Bruckner, "Selection of Hard Winter Wheat Cultivars Adapted to North Dakota," North Dakota State Board of Ag Research & Education

### Dougher Annual St. Patrick's Day Party

On Saturday, March 17<sup>th</sup>, at 5 p.m., Frank and Tracy Dougher are inviting you to their annual Irish Dinner. They will serve corned beef, cabbage, potatoes, coddle, barley soup, leek soup, soda bread, and any other Irish dish Frank can cook up. Bring your favorite Irish beverage or green drink! All PSPP is invited - 1335 Cherry Drive!

### Bob's Byte

**By Bob Johnston**  
***Cut down on spam with a disposable email address***

The following was taken from an article published by PC Magazine.

[A recent Washington Post article](#) describes new and clever types of phishing scams: fake help-wanted ads and, conversely, pharming of applicants from job sites.

A shady "news" site named USA Voice is cited as being involved in the attacks. The article describes how people who applied for positions

advertised in USA Voice for jobs there did not receive call backs, but did start receiving spam. Ads from USA Voice have been found on and removed from major job sites like Monster.com. Online job applications that ask for personal information, such as social security numbers, could be used for even worse abuse.

When dealing with unknown services, don't divulge personal information. Instead of your normal e-mail account use a free account or, better still, a forwarding account from a service such as Spamex. They allow you to create addresses which forward e-mail to your real address. If they start receiving spam the first thing you know is that the recipient of that address betrayed your privacy. And you can then cancel the address without interfering with your regular e-mail.

For 9.95 dollars per year, individuals can create up to 500 disposable email addresses, which will forward mail to your permanent email account. For more information, logon to their website (<http://www.spamex.com/>).

### By Cheryl Moore Gough

***How can I check for winter damage on my shrubs?***

You'll have to wait for warmer weather to see most damage on the trunk and branches. But you can check the flower buds now.



Snip off some shoots containing flower buds of the plant in question and bring them into the house. Place them in a vase of water in a warm spot. This will allow frozen tissue to warm and the cells to become active. After several days, cut the buds open. If they're brown or black inside, they're dead or severely injured and wouldn't have produced good flowers. If the inner tissue is green or whitish-green, the buds were sound. Figure your percentage of damaged buds and you'll get an idea of the amount of injury on that plant. Be sure to check plants of different species and different exposures because not all plants have the same sensitivity to winter cold.

Remember, this is just a rough test of the actual damage. Some damage that occurred last winter to the shoots and trunk may not show up until June and some buds may still be damaged later on this spring.

Given our fluctuating extreme high and low temperatures last fall, I suspect you'll see a lot of "winter damage" this spring.

## March Birthdays

Bobby Bear	6
Eva Grimme	9
Yousef Zadegan	17
Vicki Carollo Blake	28
Leslie Shama	31
Elaine Nichols	31



## Recipes of the Month

### Crockpot Pork and Sweet Potato Stew

1 lb. boneless pork shoulder, cut into 1" cubes

3 cups peeled, cubed sweet potatoes

2 apples, cored and chopped

1 onion, chopped

1/2 tsp. dried thyme leaves

1/4 tsp. pepper

1/2 tsp. salt

2 cups apple juice

Layer sweet potatoes, apples, and onion in 4-5 quart slow cooker. Sprinkle with thyme and pepper, then top with pork cubes. Pour apple juice over.



Cover crockpot and cook on low for 7-8 hours until meat and veggies are tender.