Plant Science Says

September, 2003

Annual American Phytopathology Meeting
By Barry Jaocbsen

The American Phytopatholical Society (APS) held its annual meeting August 9-13 in Charlotte, NC. The venue at the Convention Center and adjacent hotels was excellent and I would highly recommend it to others planning meetings with attendance in the 1500-5000 range. There were more than 800 poster and oral presentations with published abstracts by the more than 1500 attendees.

Those in attendance from our Department included our fearless leader, John Sherwood, Don Mathre, current chair of the APS Foundation, Barry Jacobsen, Rebecca Bargabus, Jack Riesselman and our visiting Professor from Germany, Dr. Richard Sikora. The plenary session focused on Plant Health and Security in the Age of Genomics and it was one of the most interesting in a number of years. Barry Jacobsen gave an invited symposium paper, " The role of Bacillus-based biological control agents in integrated pest management systems" in the Symposium entitled, "Nature and Application of Biological Control Microbes: Bacillus sp." Rebecca Bargabus presented a poster, "Bacillus mycoides isolate Bac J elicits an oxidative burst independent of hypersensitive cell death". This poster was coauthored by Nina Zidack, John Sherwood and Barry Jacobsen. Of interest is the new APS offering of all the posters on CD. Contact APS Press to order.

Don Mathre reports that the APS Foundation raised more than $13,000 in new donations and had two new travel grants funded. Students please note that the APS Foundation provided 16 travel grants of $400 each this year. There was an approximate 30% success rate for applicants and no MSU students even applied. John Sherwood attended the Department Heads' meeting and Barry Jacobsen was elected chair of the Biological Control committee.

South Dakota Plant Physiology/Plant Biochemistry Symposium
By Andreas Fischer

Mike Giroux, Andy Hogg and Andreas Fischer attended the South Dakota Plant Physiology/Plant Biochemistry symposium, which was organized under the title "From plants to genes and back again". It was held from August 6-8 on the South Dakota State University Campus in Brookings. The organizers were able to invite a number of well-known plant biologists giving presentations on a wide-ranging number of subjects, organized in several small sessions. Highlights were Tuan-Hua David Ho's presentation on LEA proteins, recent results from Shauna Somerville's lab on microarray analysis of plant-pathogen interactions, an update on plant development by Elliot Meyerowitz (using Arabidopsis, what else…), an overview of ethylene receptors and signaling (by one of the few participants from overseas, Michael Hall), and a number of talks on various aspects of plant metabolism (which, by unanimous vote, were the most interesting part of the meeting for the Bozeman delegation). Oral presentations were complemented by a small (at least by ASPB standards…) number of poster presentations – congratulations to Andy, who won a "graduate student outstanding poster prize"! Also on the schedule was a panel discussion on "systems biology – what is it and are we ready?", attended by Machi Dilworth from NSF. An important part of the discussion focused on the "what is it" part (NSF does not quite know yet, either), with the more polemic contributions suggesting that "systems biology" might just be a new term used for an old discipline previously known as "physiology"! (Andreas would probably agree). The real question is, of course, what is needed to integrate knowledge from the various –omics disciplines to understand an entire, functioning plant/organism in its molecular complexity, and here the consensus is probably (unsurprisingly) "a lot more research/data needed" (which is reassuring to both research scientists and NSF).

Apart from science, Brookings is a pleasant little town (smaller than Bozeman and, judging by the vegetation, blessed by occasional rainfall even during summer), with the SDSU campus on the N/NE edge of town. The clock tower boasts real bells – when it was built in the 1930s or so, the university was so proud of it

that they would ring the bells at all hours of the day, provoking serious complaints from sleepless neighbors living in the nice residential areas west of campus…

On the way back, Andreas took a few days off to visit the Black Hills area. Having gotten a first impression (there is definitely more to the area than Mount Rushmore), he hopes to go back there someday for a few days of hiking, but maybe not during the period of the annual Sturgis motorcycle rally.

Hogg Wins Award

Mike Giroux and Andy Hogg attended a Plant Physiology/Biochemistry Meeting at South Dakota State University in Brookings, SD. His poster which was entitled Wheat Puroindolines; Their Effect on Grain Hardness and Plant Defense won him the The Outstanding Research Presentation by a Grad Student Award. He received a certificate and a subscription to a magazine. He also won the student travel award to attend the AACC meeting in Maryland in October. Congratulations Andy!

Grants

Bill Dyer
"Stress-related Genes from Wild Barley", U.S.-Egypt Joint Science and Technology Board.

John Sherwood
"Genetic Transformations for Fungal Resistance", U.S. Egypt Joint Science and Technology Board.

Barry Jacobsen and Gary Strobel
"Develop Mycofumigation for Control", USDA.

Norm Weeden
"Gene Discovery in *Pisum Sativum* ssp *abyssinicum*", USDA.

Andreas Fischer
"Functional analysis of genes controlling barley grain protein concentration", North American Barley Genome Mapping Project.

Klein Traveling and Teaching

Lynn Klein, Master's student, (with Matt Lavin) has been busy this summer and fall teaching classes around Montana. Some of the classes already taught were entitled "Oh Those Lovely Terpenes!", "Adaptogenic Herbs", "Botanical Aromas" and "The Rainbow in Flowers: Color Compounds in Plants". Upcoming classes include:

PS 280: Herbal Medicine. Fall Semester 2003 (Sept-Dec). 3-credits. Montana State University, Continuing Education, Bozeman, MT.

Big Sky Botany: Medicinal Plants and Their Uses. Big Sky Institute's Outdoor Science Adventures for the Gordon Research Conference. 3 hours. Huntley Lodge, Big Sky, MT. September 11, 17 and 23.

Herbs, the Gentle Medicines: Careers Working with Plants. Bioneers (video transferred to Bozeman from California site). Emerson Cultural Center, Bozeman, MT. October 17, 2003.

Earth Medicine: Herbalism around the World. Bioneers (video transferred to Bozeman from California site). Emerson Cultural Center, Bozeman, MT. October 18, 2003.

New Employees

Elaine Matlow – Student Affairs Secretary

Hello, my name is Elaine Matlow. I am the new Student Affairs Secretary for the Plant Sciences and Plant Pathology department located at 324 Leon Johnson Hall.

I enjoy living and working in the Livingston-Bozeman area. I am very happy to be working in this department because my interests are in plants, herbs and sustainable living. This department offers a wealth of information in all these categories. I plan to take classes in these areas of interests so that I may be of greater assistance to both faculty and students.

I enjoy water aerobics, making homemade wine, cooking with tofu and attending my teen-age children's extra curricular high school activities.

Liz Lee – Bill Dyer Lab

Originally from the Bay Area, I moved here with my husband C. David Brown (LRES) a year ago from Des Moines, Iowa.

Having been in the Peace Corps, we both enjoy international travel and spent three months in Kenya this year for David's research.

I have a B.S. in Genetics from U.C. Berkeley and an M.S. in Traditional Oriental Medicine from Meiji College. When not working half-time in Bill Dyer's Laboratory, I have a small, but growing, acupuncture practice in town and enjoy the balance of the two jobs.

Not so New Graduate Student
Tom Allen – Phil Bruckner

My name is Tom Allen and I am a graduate student under Dr. Phil Bruckner. The emphasis of my project is on the reseeding of winter killed winter wheat. I started my program with the spring semester of 2003, but have been in Bozeman since June of 2002.

I spent my summers on our family farm in Big Sandy while growing up in Missoula and Great Falls. I graduated from CMR High School in Great Falls in 1977 and then worked at various ag jobs until deciding to go to college. I received a BS in Ag Education-Extension from MSU in 1988 and started working for the Northern Ag Research Center in Havre in July of that year. I worked for Gregg Carlson there for 11 years as a Research Specialist in Agronomy. In 1999, I went to work for United Ag Products at their Havre facility selling fertilizer and ag chemicals.

My wife, Beckie, and I have been married five years and are enjoying life here in Bozeman. She works in the College of Graduate Studies office as a program specialist. We have two boys, Andy (22), and Marty (20). We recently purchased a house on Meriwether Ave. after living in married student housing for the last year.

Advertising a Workstudy Position
To advertise a workstudy position on the internet and on the job board in the Financial Aide Office, email Laura at lareid@montana.edu and tell her the title, job description, wage, hours/wk and contact info for the position.

Bob's Byte
(Irene Decker filling in)
Creating In-Document Cross-References

Creating a cross-reference within a document to another section of your document is a simple matter of typing some fixed text and then inserting a reference to the item. Here's how:

Place your cursor where you want the cross-reference to appear and then type an introductory text.
For example, you might write, "For more information, see." Make sure your cursor ends up at the exact spot where you want the cross-reference inserted.

Choose Insert, Cross-reference.
The Cross-reference dialog box appears.

Select the general reference category in the Reference type drop-down list. The Insert Reference To and For Which list changes, depending on the reference type that you select.

Select an option for the Insert References To drop-down list to specify the information from the reference category that should be inserted in the cross-reference.
Note that each reference category contains a Page Number option with which you can refer to the page where the reference item occurs.

Specify the exact reference that you want from the For Which list.
For example if you choose Bookmark as the reference type, the For Which Bookmark list then contains a list of all bookmarks in the document.

Choose Insert.
The Cross-reference dialog box remains open so that you can add more info to your reference.

When you're finished, close the Cross-reference dialog box.

When is the best time to pick sweet corn?
by Bob Gough
It's time to pick your sweet corn if you have not been lucky enough to have done so already. To get the

quality you deserve you must harvest your corn at peak maturity - and that means peak sugar!

Sugar stored in the kernels is converted into starch and the kernels' skin grows tough as the corn ripens. The higher the temperature, the faster the sugar disappears. Sweet corn normally reaches the best quality about 20 days after first silk, when the kernels are in the "milk" stage.

When the ears feel well-filled and the silks have just dried in the last day or so, strip the tip of a husk or two and with your thumbnail, puncture a few kernels near the middle of the ear. Kernels near the tip often do develop poorly due to incomplete fertilization or dry weather. The corn is ready for harvest if milky juice squirts onto your thumb. At this point your corn will contain from 10% to 35% sugar. If the juice is clear and watery, the corn is in the "pre-milk" stage; wait a few days if you can before harvest. If only dough oozes from the crushed kernel, you waited too long. Pay closer attention next year. Up to two-thirds of the sugar can turn into starch in a single hot summer day!

Once picked, sweet corn can lose a quarter of its sugar in just 24 hours. So refrigerate those ears right away! Better still, have the water boiling before you pick. And when the frost takes out the leaves, the corn is done for the season.

September Birthdays

Tracy Dougher	1
Debbie Willits	3
Irene Decker	5
Oliver Zietlow	13
Melody Schimpf	15
Gary Strobel	23
Bill Dyer	26
Mark Young	27
David Baumbauer	27

Zucchini Brownies

1 1/2 cup vegetable oil
2 cups white sugar
2 teaspoons vanilla extract
2 cups all-purpose flour
1/2 cup unsweetened cocoa powder
1 1/2 teaspoons baking soda
1 teaspoon salt
2 cups shredded zucchini
1/2 cup chopped walnuts
6 tablespoons unsweetened cocoa powder
1/4 cup margarine
2 cups confectioners' sugar
1/4 cup milk
1/2 teaspoon vanilla extract

1. Preheat oven to 350 degrees F (175 degrees C). Grease and flour a 9x13 inch baking pan.
2. In a large bowl, mix together the oil, sugar and 2 teaspoons vanilla until well blended. Combine the flour, 1/2 cup cocoa, baking soda and salt; stir into the sugar mixture. Fold in the zucchini and walnuts. Spread evenly into the prepared pan.
3. Bake for 25 to 30 minutes in the preheated oven, until brownies spring back when gently touched. To make the frosting, melt together the 6 tablespoons of cocoa and margarine; set aside to cool. In a medium bowl, blend together the confectioners' sugar, milk and 1/2 teaspoon vanilla. Stir in the cocoa mixture. Spread over cooled brownies before cutting into squares.

Zucchini and Apple Sauté

4 tbs. olive oil
1 red or regular onion, sliced
1 apple, chopped into cubes
1 tomato, chopped into cubes
1 zucchini, cut into pieces
salt and pepper
4 tbs. parsley, chopped or cilantro and a little thyme
1 clove garlic, crushed

1. Heat 2 tbs. oil in frying pan, add the onion and garlic and cook several minutes.
2. Add apple and cook several more minutes.
3. Add 2 tbs. oil and zucchini and cook.
4. Add parsley, salt and pepper, and tomato and cook long enough to heat tomato.

Quote:
"Always be a first rate version of yourself instead of a second rate version of somebody else". July Garland