Plant Science Says

April, 2005

Growth Chamber Mafia
By Tracy Dougher

On March 12-15, I attended the joint meeting of the USDA Information Exchange Group NCR-101 and the American Society for Horticulture Sciences Controlled Environment Working Group (ASHS CEWG) in Tucson, AZ. The NCR-101 group is affectionately known as the 'growth chamber mafia' and they help set standards for sensors, measurements, and units in controlled environments. You may have noticed the poster that surfaced recently on the greenhouse bulletin board by David's office. The poster defines measurements that should be reported when research is done in controlled environments (greenhouse or growth chamber). NCR-101 is responsible for the composition and distribution of that poster.

On March 12, I chaired the ASHS CEWG meeting to discuss business regarding the upcoming ASHS annual meeting (July 18-21). In conjunction with the Herbs, Spices, and Medicinals working group, I have organized a workshop for the upcoming meeting on "Medicinals in Controlled Environments" to feature speakers from both industry and research. ASHS-CEWG members also discussed plans for a colloquium at the 2006 meeting on "Gas Exchange Measurements and Scaling". A representative was chosen for the CSREES stakeholder's workshop to be held a day prior to the ASHS meeting. CSREES will be gathering input from ASHS working groups to set future research priorities for horticulture and the USDA Competitive Grant Programs.

The Meeting of NCR-101 commenced on March 13 with a business meeting. Among many other issues, the uploading of the "Lighting Conference Proceedings" and "Growth Chamber Handbook" to the NCR-101 website was discussed. Recent controversies over supplemental lighting management, EC temperature compensation, new plastic light sensors, soil moisture probes, and coir (coconut fiber) growth media were discussed. Awards were handed out at the evening banquet for 20 years of service to NCR-101 which included my MS major professor, Cary Mitchell. The next day was filled with station reports from each university, ARS station, and corporation. The late afternoon was spent touring the University of Arizona Controlled Environment Agriculture Center, Animal Research Center which included a mock-up of a Mars greenhouse, and the Environmental Research Lab. The following day a trip was made to EuroFresh Farms in Willcox, AZ with many acres of hydroponic tomatoes under glass (Costco sells EuroFresh tomatoes) and HM Distributor in Nogales, AZ.

More information on this group can be found at www.ncr101.duke.edu. This website will be migrating

to the MSU Plant Sciences server in the near future under the auspices of yours truly.

Scholarships for the 2005-06 Academic Year

Jessica Knox - Helen E. & Clyde S. Erskine Memorial Early Day Montana Dude Ranch Scholarship, $600

Michelle Garrett - Helen E. & Clyde S. Erskine Memorial Early Day Montana Dude Ranch Scholarship, $600

Leah Grunke – Gallatin Gardeners Club Scholarship, $1000

Tyson Koepke – Arthur H. and Margaret C. Post Memorial Scholarship, $600

Eric Berg - Frank M. Harrington memorial Scholarship, $350

Jeremy Jewel - Robert F. Eslick memorial Scholarship, $500

Undergrads Scholars Conference

Several undergraduates currently working in labs in our department gave either oral or poster presentations at the Undergrad Scholars Conference on March 30. Following is a listing of each undergrad, their mentor and the title of their presentation:

Oral Presentation:

Matthew Kirkpatrick – David Sands
"A Nutrabiotic Approach to Lysine Supplementation of Plant-based Fish Feeds"

Poster Presentations:

Mark Clark – Mike Giroux
"Starch Variation in Wheat"

Frankie Crutcher – Mike Giroux
"Increasing wheat grain quality by selecting for supersoft wheats"

Julie Elser – Luther Talbert
"Identification of Single Nucleotide Polymorphisms in Bread Wheat and its Ancestors"

Aimee Hafla – Andreas Fischer
"Relating Nitrate Levels, Forage Quality, and Yield in Annual Hay Barleys"

Wendy Lewis – Alan Dyer
"Residue Composition of Spring Wheat Varieties"

Sarah Christine Meyer – Jamie Sherman
"Converting Spring Wheat to Winter Habit and Winter Wheat to Spring Habit through Maker Assisted Backcrossing"

Ben Widener – Mark Young
"Induction of Hyperthermophilic Archaeal Viruses

Philip Fox – Luther Talbert
"Secondary Solid-Stem Genes in Wheat"

Nasir Anwar – Mark Young
"PCR based amplification of hemispherical fragments of the STIV genome"

Graduates

Jamie Snyder, doctoral student with Mark Young, received her Ph.D in Microbiology on March 29. The title of her dissertation was "Viral Dynamics in Three High Temperature Acidic Hot Springs in Yellowstone National Park." Jamie plans to move to Los Alamos, New Mexico to begin her new position as a Post Doc in the Lab of Cheryl Kuske, at the Los Alamos National Lab. She will be working on arabadopsis.

Catlynn Swan, Master's student with Mike Giroux received her Master's in Plant Sciences on April 1. The title of her thesis was "Manipulation of Wheat Puroindolines". She plans to move to Napoleon, Ohio to work for Pioneer as a Senior Research Associate. She will be getting married on New Year's Eve to Dan Salois. Congratulations Jamie and Catlynn!

Publications

Bahieldin, A., H.T. Mahfouz, H.F. Eissa, O.M. Saleh, A.M. Ramadan, I.A. Ahmed, **W.E. Dyer**, H.A. El-Itriby and M.A. Madkour. 2005. Field evaluation of transgenic wheat plants stably expressing the *HVA1* gene for drought tolerance. Physiol. Plant. 123:421-427.

Kern, A.J., M.E. Chaverra, H.J. Cranston, and **W.E. Dyer**. 2005. Dicamba responsive genes in herbicide-resistant and susceptible biotypes of *Kochia scoparia.* Weed Sci. 53:139-145.

Hogg, A.C., B. Beecher, **J.M. Martin**, F. Meyer, **L. Talbert, S. Lanning**, and **M.J. Giroux**. (2005) Hard Wheat Milling and Bread Baking Traits Affected by the Seed-Specific Overexpression of Puroindolines. Crop Science 45(3): p. 871-878.

New Employees

Barbara Keith (Bill Dyer) 725 LJH

I have recently moved to the Bozeman area and joined Bill Dyer's laboratory as a Research Scientist. Before moving to Montana, I headed the Molecular Biology Core Facility in the Department of Pharmacology at the University of Illinois-Chicago, where I collaborated with a variety of researchers to study endothelial cell barrier function in mammalian cells. My graduate studies at Hahnemann University in Philadelphia and my post-doctoral work at the University of Massachusetts-Amherst used *Saccaromvces cerevisiae* as a model

system to study signal transduction and transcription regulation in response to environmental stresses. I received my undergraduate degree in Microbiology from the University of Washington. My husband, Kevin, and I chose to move to the Gallatin Valley, like many of you, to have the great outdoors as a playground.

Kristin O'Toole – CBIN – 315 ABS

Since taking the position of Administrative Associate at the Center for Bio-Inspired Nanomaterials, I have met great people and gained knowledge about the sciences. CBIN is a new center created to use multidisciplinary research as a way to study cage structures that can encapsulate guest materials of complementary size, shape, and chemical properties through specific intermolecular interactions. As a Graphic Design student here at MSU, I am excited about joining this center as my skills can be used to create publications needed to organize and promote CBIN. I will be graduating in May of 2005 and am planning on staying in the Bozeman area although I am originally from Portland, Oregon. It is nice to be out of the rain and enjoying the snow!

Please feel free to come by and introduce yourself and see where the CBIN office is located. I am currently housed with Susie and Angie in the Ag Bio Science Building, room 315.

Montana Ag Live! April Schedule

April 3	Plant Diagnostic Facilities – Nina Zidack
April 10	Economic Development in the College of Ag - Ralph Peck
April 17	West Nile Virus in Montana - Greg Johnson
April 24	Montana's Horse Industry – Sandy Gagnon

Bob's Byte
By Bob Johnston

Need a really handy program for organizing and touching up all those digital photos? If so, check out the new program called **Picasa** from Google.com. You can download a free at http://www.picasa.com/ ,

Here are the program highlights with comments taken from their webpage:

Picasa is software that helps you instantly find, edit and share all the pictures on your PC. Every time you open Picasa, it automatically locates all your pictures (even ones you forgot you had) and sorts them into visual albums organized by date with folder names you will recognize. You can drag and drop to arrange your albums and make labels to create new groups. Picasa makes sure your pictures are always organized.
Picasa also makes advanced editing simple by putting one-click fixes and powerful effects at your fingertips. And Picasa makes it a snap to share your pictures – you can email, print photos home, make gift CDs,

Find the pictures you forgot you had.

Picasa organizes your entire collection while you watch, scanning the images on your computer and automatically sorting them by date.

Move and re-name pictures from inside Picasa.

Want to clean up messy folders and move pictures around on your computer's hard drive? Simply drag and drop pictures from one folder in Picasa to another. Picasa will make the change permanent after double-checking with you. Want to change a picture's filename from 671056398a.jpg to Lisa.jpg? In Picasa, it only takes seconds to re-name one picture or a group of pictures.

Make a label.

Use labels to tag your photos into quick groupings inside Picasa. Viewing and sharing the pictures you grouped under a label is easy – they make great slide shows and movies or you can email them to friends.

Basic Fixes are back – and better.

Picasa 2's Basic Fixes are buttons that make it fast and easy to crop, remove red eye, fix the contrast and color, and enhance your digital pictures.

Amazing effects turn so-so pictures into works of art.

You can see how much Picasa's 12 new visual effects can improve your photos – and in seconds, not hours. Go sepia. Warmify. Make pictures pop with color or try austere black-and-white. Try easy one-clicks or the more finely tuned sliders for better control where you want it. And of course, you can undo your changes at any step along the way.

Write captions that stay with the picture.

By Bob Gough
Staking Newly-Planted Trees

I notice a lot of gardeners and landscapers are staking their trees right after planting. This is probably a good idea in our windy area. It'll help keep the tree upright and aid in

establishment of a strong, stable root system. But done improperly, it'll cause you never-ending trouble.

Staking the tree tightly may keep it from blowing over, ut it may also cause a couple of situations that are etrimental to the tree's health.

Do not fasten the trunks firmly so that the tree cannot move slightly. Firm staking so as to prevent movement in the wind will cause the tree to develop a weak trunk system that will be subject to cracking and wind damage once the guy wires are removed. So the tree has to move slightly to build strength.

To determine the proper staking height of trunks that cannot stand upright without support, hold the lower part of the trunk in one hand, bend the top of the trunk to one side, then release the top. Locate the ties about 6 inches above the lowest level at which the trunk can be held and still return upright after the top is deflected.

Use flexible ties to form a loose loop around the trunk and remove the stakes and ties after a year or so. Supporting too tightly for too long makes the tree weak and unable to support itself properly.

April Birthdays

John Sherwood	12
Ike Giroux	12
Toby Day	15
Amanda Henry	19
Matt Lavin	20
Andreas Fischer	25
Nina Zidack	26
Jeremy Jewell	28
Rich Stout	30

Recipe of the Month

Garlic and Artichoke Pizza

1 unbaked pizza crust
3/4 cup spaghetti sauce
1 (6 ounce) jar marinated artichoke hearts, drained, liquidreserved
1 medium tomato, cut in half

Preheat the oven to 400 degrees. Prepare pizza crust according to recipe or package instructions. Place on a pizza pan. Pour the liquid from the artichokes into a small skillet, and bring to a boil over medium heat. Cook for 1 minute, or until the liquid is almost gone. Add garlic, and cook, stirring, for less than a minute. Add artichoke hearts, stir to coat with garlic flavor, then move from heat, and set aside.

Spread spaghetti sauce over the prepared pizza crust. Sprinkle with cheese, then place the artichoke hearts and garlic over the cheese. Arrange tomato slices evenly over the top. Bake for 20 minutes in the preheated oven, until crust is puffed and golden, and cheese is melted.