

PLANT SCIENCE SAYS



HAPPY HALLOWEEN!

Vol. 11, Number 9

October, 2008

Departmental Basket for Silent Auction

A big thank you to all of you who donated items and to those of you who went to the effort to find businesses willing to donate items for our basket for the College of Ag Silent Auction. As you can see from the picture below, we ended up with a nice assortment of items with a value of close to \$1000. Below is a list of those who donated items. We encourage you to give them your business!



Alpine Touch, Inc.

Phone: 406-466-2063

Donation: set of Montana Special Spice: pepper blend and all-purpose blend

Amazing Grains LLC

Grace Lee

Phone: 406-675-3536

Donation: Montana All Purpose Baking Flour + Amazing Grains Pin

Animal Naturals, LLC

Bob Fritz

Phone: 877- 922-8362

Donation: 2 bottles of OmegaDog and 2 bags of Born to Be Wild Dog food

Barry Jacobsen

Phone: 406-994-5161

Donation: 2- 50 lb boxes of hand-picked baking potatoes

Bear Luv-Un Honey

Phone: 406-632-5657

Donation: 1 12 oz jar of honey and 1 8 oz jar of huckleberry creamed honey

BiobasedTechnologies

Clyde Ritter, CEO

Phone: 406-451-8667

Donation: 1 bottle CAM-A-LINA fuel additive

Bumbler's Bees

David Baumbauer

Phone: 406-994-2231

Donation: 1 12 oz jar of honey

Cashman Nursery

Jerry Cashman

Phone: 406-587-3406

Donation: 1 six foot fruit tree

Cheryl Moore-Gough and Dr. Bob Gough

Phone: 406-994-6523

Donation: "Best Garden Plants for Montana" 2005 edition

Cowboy Heaven Consulting

Bill O'Connell

Phone: 406-587-9563

Donation: 1 12 oz bottle of extra virgin camelina oil

Don Mathre

Phone: 406-994-5157

Donation: 2 bunches of ornamental wheat

Great Northern Growers Cooperative

Dean Miller

Phone 406- 600-4726

Donation: Proatina Oats (2 bags)

Mom's Old-fashioned Homemade Jams and Jellies

Phone: 406-862-3046

Donation: Cowboy Breakfast package: 8 oz huckleberry pancake mix, 8 oz huckleberry syrup, 2 oz coffee

Montana Monster Munchies

Cathy

Phone: 800-752-2158

Donation: 6 packages of all-natural cookies (2 cookies per pack)

Owenhouse Hardware

Larry Bowman, Manager

Phone: 406-587-5401

Donation: 1 wheelbarrow

Peaks and Prairies Oilseeds

Kent Wassen, Owner

Brenda Clark, Office Manager

www.peaksandprairies.com

Donation: AG-40 Penetrating oil (similar to WD-40), MT Gold Bar and Chain Oil

PetCo

Paul E. Jolly, Vice President and Executive Director

Phone: 626-287-0952

Donation: OmegaDog Camelina Oil (1 bottle)

Sustainable Systems

Paul Miller

Phone: 406-532-3268

Donation: 1 bottle of Montola safflower oil and 1 bottle of Montola sunflower oil

TaDa Solutions

Lynn and Brekke Peterson

Phone: 307-672-3450

Donation: 4 bars of camelina soap

TruGreen ChemLawn

Eric Beldin

388-4393

Donation: \$50 off a lawn treatment program

Western Sugar Cooperative

Phone: 406-245-6393

Donation: 4- 5 lb bags of white granulated sugar

Western Trails

Bruce Smith

Phone: 406-377-4284

Donation: 1 basket of food products: Golden flax seed, quick rolled oats, hullless barley, whole grain flapjack mix, bbq bean mix, bbq bean sauce (\$)

Wheat Montana Farms & Bakery

Dean Folkvord

Phone: 406-285-3614/800-535-2798

Donation: 1 gift basket: 1 10 lb. bag of white flour, 1 10 lb. bag of wheat flour, 1 bag of harvest roast coffee, 1 box of chicken chili mix, 1 coffee mug

Yousef Zadegan

Phone: 406-994-7539

Donation: Residential Landscape Planning design for half an acre or less

News from Europe By Barry Jacobsen

I travelled to Novi Sad, Serbia for the Masters defense of Dragana Budakov. Dragana spent 3 months in the Jacobsen lab learning molecular techniques for identification of *Rhizoctonia solani* isolates from sugarbeets in the USA and Serbia. Her thesis entitled, "IDENTIFICATION OF *RHIZOCTONIA SOLANI* KÜHN ISOLATES FROM SUGAR BEET ROOT USING CLASSICAL AND MOLECULAR METHODS" was successfully defended on September 3rd. The exam procedure is somewhat different in Serbia.



Draganov and her MS Examination Committee

The whole exam is held in a large lecture hall with students, faculty, and family in

attendance. Exam questions are given to the candidate in writing (after approval by the College Dean and the Department Head) after the thesis seminar. There are no follow up questions allowed, only those submitted. Dragana send a big hello to all in the department.



After Serbia, we flew to Zurich, Switzerland and spent a weekend with Andrea (Braun) and Sebastian Kiewnick at their home at Wädenswil on Lake Zurich. Andrea received

her Ph.D in this department in 1998 and is now working $\frac{3}{4}$ time with Brion Duffy on fireblight at the Federal Department of Economic Affairs DEA Agroscope Changins-Wädenswil ACW Research Station ACW Schloss. Sebastian worked with Barry for four years and is now a senior scientist-nematology at the same institution as Andrea. It is a beautiful station overlooking Lake Zurich with the Alps visible to the south. Andrea and Sebastian have two girls, Clara and Johanna. All of the Kiewnicks are doing well and send their greetings.

On September 9-12, I participated in an International Organization on Biological Control (IOBC) Working Group-Biological Control of Fungal and Bacterial Plant Pathogens meeting where I presented an invited paper entitled "Defense pathways activated by *Bacillus mojavensis* isolate 203-7 and *B. mycoides* isolate BmJ as elucidated by *Arabidopsis* mutants". This paper was co-authored by Oliver Neher. It was an excellent meeting that focused on the use of molecular tools for understanding and improving biocontrol. The proceedings book with abstracts is available in my office.

New Paradigm Project Begins Year Two with a Quiet Revolution **By Florence Dunkel**

Year two of the USDA-CSREES Higher Education Challenge Grant Program awarded to MSU has begun with a "*Quiet Revolution*." An action research course was launched Spring 2008 in Plant Sciences and Plant Pathology (PSPP). Based on the success of this course, a 3-credit University Core course in Research and Creative Activity (PSPP 465R) was approved. The title of this new Core course is "Health, Poverty, Agriculture: Concepts and Action Research." Meanwhile, four courses at three other universities were initiated when faculty adopted the PSPP 465 syllabus and teaching methods model. The three-year grant encouraging this *Quiet Revolution* is titled "New Paradigm for Discovery-Based Learning:

Implementing Bottom-up Development by Listening to Farmers' Needs and Using Participatory, Holistic Processes." P.I. for this grant is Dr. Florence Dunkel. Partner schools are Virginia Tech, University of St. Thomas (St. Paul, MN), University of California-Davis, University of California-Riverside, Chief Dull Knife College (Lame Deer, MT), and the University of Bamako in Mali.

The PSPP 465R course and the four sibling courses are typical of the radical teaching style change promoted by this grant. Students address real problems of subsistence farmers holistically, in real time (thanks to solar charged cell phones in remote villages and the



View from Research Center overlooking Lake Zurich

Internet), interacting weekly with the foreign partner teams. Each course is interdisciplinary, linked to partner institutions, and vertically integrated. At University of St. Thomas (UST) where the word agriculture was not spoken until our collaboration began in 2002, 30 students in their School of Business' M.B.A. program are engaged this semester in a Certified Disease-Free Seed Potato Project Management course. M.B.A. students are linked as teams to six former MSU graduate students. Project leader is Aissata Thera, 2008 M.S. graduate of PSPP. Other former PSPP students leading teams are: Keriba Coulibaly, Abdoulaye Camara, and Adama Berthe. Undergraduate UST students in Sociology, French Language / Literature, and Mechanical Engineering (specifically in the local chapter of Engineers for a Sustainable World) assist. At University of California-Riverside, a molecular entomologist/immunologist in the Department of Entomology linked with the Department of Economics and a Cultural Anthropology professor to create a similar course.



Secondary School New Paradigm team led by Dr. Walt Woolbaugh, Manhattan MT science teacher, hold planning meeting in Bozeman in Marsh Labs May 2008 prior to departure of team for Mongolia (Dr. Cliff Montagne, MSU, Department of Land Resources and Environmental Sciences), Mali (Aissata Thera), and Washington D.C. (Dr. Florence Dunkel) to assist teachers and students in Montana, Mongolia, and Mali present their local research seed potatoes and community outreach to each other.

At Montana State in PSPP, students in our "Poverty Course" are from Horticulture, Political Science, and Pre-Med (Post Bac) majors. They decided to focus on a subsistence farming village of 1000 people

where 15 children, ages 0 to 5 years, died of malaria in the month of August this year. The village community wants to "eradicate malaria" and asked for help implementing a malaria IPM effort. Students will follow up with the villagers on mosquito biocontrol, use of traditional plants, women's cottage industry initiated to earn cash to buy bednets and medication, and a junior high school community awareness program, all begun last semester by PSPP students.

October 16, students from across the country will join PSPP students via video conference to discuss poverty concept texts assigned for that week. In the joint video conference students will meet each other and practice the art of listening-to-and-not-leading farmers, putting subsistence farmers in the "driver's seat," and valuing traditional wisdom (and each other's knowledge base).



May 2008 - Florence Dunkel invited to Brock Road Elementary School in Spotsylvania, VA to answer questions of 3rd and 4th graders studying Mali. Teacher discovered the project via its website www.montana.edu/mali. Students used website for study and to create instructive coloring books for 3rd and 4th graders in the Malian village school where PSPP students are working.

How are we vertically integrated? Graduate students in professional programs link in teams with undergraduates and professional agricultural scientists. Junior high students in a Malian village school link with undergraduates and professors at MSU to solve a community problem in their village. Manhattan, Montana junior high students work on questions posed by local seed potato farmers and each May share their research

results in a virtual "Global Science Fair" with high school students in Mali advised by Aissata Thera. Village school students initiating a malaria IPM community awareness campaign answered questions from program officers at the USDA, Washington D.C..

Why do we do this? Students across the US are urgently asking for a holistic approach to real world problems and the skills to address those problems directly and effectively in small groups. What is the ultimate goal? World peace is one goal.

Other aspects of the New Paradigm project, and related grants are detailed on the Virtual Center for Rural Poverty Teaching / Learning website <http://www.montana.edu/mali>.

New Employees

Kara Schile



My name is Kara Schile (pronounced Sheelee) and I have recently joined the Schutter Diagnostic team in the PSPP

Department as a plant disease diagnostician. I grew up in Geraldine, Montana, a small farming community in the Golden Triangle, and received my bachelor's degree in Horticulture Science (inspired by my grandmother) from MSU in 2004.

I have toiled for the past four years in the trenches of the Gallatin County Extension office as an Agent assistant and loved working with the producers and homeowners! Since the middle of July, I have been working in the Schutter Diagnostic lab with Nina Zidack in hopes of learning from her vast experience.

My husband Jeff works at Simkins-Hallin Lumber Company selling windows and doors. We have a large family, of animals that is! Two ferrets, 2 cats and one very large Bernese Mountain Dog named Timber. Like everyone here in the Valley, I enjoy

gardening and spending time in the great outdoors, hiking, camping, and trying to fish. I'm very excited to be in this position and look forward to meeting you all if I haven't already!

Courtney Speegle – Account Tech



My name is Courtney Speegle, I was born and raised in Montana and have lived in Three Forks for the past 13 years. Though I am from the Big Sky state, I did not go to school at MSU. In May I graduated from Harding University in

Searcy, AR with my BBA in Business Management. After spending time in the south, I decided that I liked the climate and mountains of the northwest so I decided to move back to Montana after graduating. I recently joined PSPP and am excited about the opportunity to be working in the accounting department.

Farewell to Mike Sun



Mike Sun, Director of the Montana State Seed Potato Testing Laboratory for the past 30 years has retired as of the end of September.

In his letter of resignation, Mike stated, "The Montana seed potato growers are the best group of people in the world to work with and to be friends with. By working together, we made a 30-year good run; the industry has grown from approximately 3000 acres in 1978 to 10,000 acres in 2008. I believe we are better off today than 30 years ago. I hope you all feel the same way."

Mike, we wish you all the best in your retirement!

Farewell to Cheryl



Cheryl Moore-Gough will be joining the ranks of the retired starting 11/1/08.

Cheryl served as the Diagnostician in the Schutter clinic and as an adjunct instructor, teaching several horticulture classes, prior

to her position as the state Extension Horticulturist. As the Extension Horticulturist, she coordinated and taught the Montana Master Gardener class, taking the program statewide via the internet. Cheryl also brought MSU's presence statewide in news releases, radio programs and television, as well as helping out county Extension agents with their clients' horticultural problems. She is not worried about being bored as there is so much that she needs/wants to do! Cheryl has been a wonderful source of information regarding all things horticulture. Farewell Cheryl and best wishes!

Montana Ag Live! Schedule

10/5 – Nina Zidack

"The Potato Industry in Montana"

10/12 - Cathy Cripps

"Mushrooms"

10/19 - Clayton Marlow

"Environmental Factors Affecting Agriculture"

Publications

Sharrock, R.A. (2008) The phytochrome red/far-red photoreceptor superfamily.

Genome Biology 9, 230.1-230.7

Planting Garlic

By Cheryl Moore-Gough



Yes, it's time to plant garlic. This terrific member of the *Allium* genus, the same that includes onions, leeks and shallots, has had a meteoric rise in popularity over the past decade, perhaps because of its

reported medical value, perhaps just because it tastes great. For whatever reason, gardeners in our region are planting more and more of it every year, and Montana researchers are learning which cultivars are best for our region.

Like onion, garlic makes most of its leaf growth in the cool short days of spring. When the days grow long and hot, the plant stops making leaves and begins to form bulbs. The larger the plant is, the greater its ability to form large bulbs. In most areas of the country, garlic is planted in the very early spring, but in our area, that is tough to do. I know that in my garden, snow lingers until April and we have about 2 weeks of spring before the long, hot days of summer begin. If you garden in an area like this, plant your garlic in the autumn. Right now is a good time. In preliminary trials, Montana researchers found that garlic planted between mid-September and mid-October gave the largest yields. Let's spend a little more time on the right time to plant.

I just mentioned that garlic planted between mid-September and mid-October gives the best yields. Planting in November slightly depresses yields of good bulbs and significantly increases the number of poor quality, or rough, bulbs. The lowest yields were from plots planted in April and May. Not having sufficient time to form good bulbs, the plants produced a significant number of singles. These look like small pearl onions. They're fine to eat, but you don't get much for your efforts.

Garlic is a provincial crop and you need to select the right cultivar for your growing conditions in order to get the best yield and highest quality. What works best in Bozeman may not work best for my friends in Lemmon. But I can only report on what we found in our trials.

Our trials are preliminary and the following are the results of two years. Nevertheless, they tell us quite a bit. We tested seven cultivars of garlic over five planting dates. The cultivars were 'Chesnok Red', 'Inchelium',

'Asian Tempest', 'Nootka Rose', 'Spanish Roja', 'Mild French', and 'Killarney Red'.

'Chesnok' and 'Inchelium' consistently ranked near the top in bulb size and yield. 'Spanish Roja' and 'Mild French' ranked near the bottom. 'Inchelium' has an interesting scalloped edge to the bulb that does make it attractive, while 'Chesnok' has a beautiful red-streaked wrapper skin and was the most colorful cultivar in our trials. 'Nootka Rose' had almost pure white wrappers and was very attractive as well as being the best keeping cultivar.

Our September plantings were dug in early August and the May plantings in early September. 'Inchelium' was among the earliest to be dug; 'Chesnok' was among the last dug.

If you want to know more about garlic, contact your local county extension office and get your free copy of MontGuide 9904 on growing garlic.

Bob's Byte

By Bob Johnston (Irene Decker filling in)

When you call a company and just want to talk to a person, go to the website below. It is a listing of 500 companies and what buttons you need to press to get to a live person.



http://gethuman.com/gethuman_list.asp

Another tip:

See who's linking to your blog or web page by searching for link: followed by your URL. For example, when searching for link: <http://www.computerhope.com/> in Google the results will display pages linking to the Computer Hope page.

Recipe of the Month

Warm and Spicy Autumn Punch

2 oranges
8 whole cloves
6 cups apple juice
1 cinnamon stick
¼ t ground nutmeg



¼ c honey
6 c apple juice
1 cinnamon stick
3 T lemon juice
2 ¼ c pineapple juice
Bake the whole oranges with cloves for 30 minutes.

In a large saucepan, combine the apple juice and cinnamon stick. Bring to a boil, reduce heat to medium, and simmer 5 minutes. Remove from heat and stir in the nutmeg, honey, lemon juice, and pineapple juice.

Serve hot in a punch bowl with the two clove-studded baked oranges floating on top.

October Birthdays

Crystal Maier	2
Hope Talbert	5
Forence Dunkel	10
Zhonghai Ren	10
Jamie Sherman	10
Bob Sharrock	11
Joanna Gress	13
David Parrott	27
Peng Liu	31

