



The Seed Technologist Newsletter

A newsletter for

**The Association of Official Seed Analysts
and The Society of Commercial Seed Technologist**

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2007-2008 AOSA EXECUTIVE BOARD INFORMATION

Brent Turnipseed, President

SDSU Seed Lab
Plant Science Dept.
P.O. Box 2207A, Ag Hall 227
Brookings, SD 57007
PH: 605-688-4589
Email: brent_turnipseed@sdstate.edu
FAX: 605-688-4013

Michael Stahr, Vice-President

Iowa State University
128A Seed Science Center
Ames, IA 50011
PH: 515-294-0117
Email: mgstahr@iastate.edu
FAX: 515-294-8303

Dan Curry, Secretary-Treasurer

Director of Seed Services
Oregon State University
107 Crop Science Building
Corvallis, OR 97331
PH: 541-737-5094
Email: Daniel.Curry@oregonstate.edu
FAX: 541-737-1589

Board Members

Jim Effenberger

California Dept. of Food and Ag
Plant Pest Diagnostics Center
3294 Meadowview Rd.
Sacramento, CA 95832-1448
PH: 916-262-1136
Email: jeffenbe@cdfa.ca.gov
FAX: 916-262-1140

Aida Galarza

Georgia Dept. of Ag.
Atlanta Seed Laboratory
Rm. 536 Ag. Bldg., Capitol Square
19 M.L. King, Jr. Dr. SW
Atlanta, GA 30334
PH: 404-656-3635
Email: agalarza@agr.state.ga.us
FAX: 404-657-8378

Michael Gill

New Mexico Dept. of Ag.
State Seed Laboratory, MSC 3190
P.O. Box 30005
Las Cruces, NM 88003-8005
PH: 505-646-3407
Email: mgill@nmda.nmsu.edu
FAX: 505-646-1841

Janine Maruschak

CFIA Saskatoon Lab
Seed Science and Tech. Section
301-421 Downey Rd.
Saskatoon, Saskatchewan
Canada S7N 4L8
PH: 306-975-5832
Email: jmaruschak@inspection.gc.ca
FAX: 306-975-6450

Victor Shaul

Washington State Department of Agriculture
Seed Program
21 N. 1st Ave. #203
Yakima, WA 98902
PH: 509-225-2630
Email: vshaul@agr.wa.gov
FAX: 509-454-4395

Johnny Zook

Pennsylvania Dept. of Ag.
2301 N. Cameron St.
Harrisburg, PA 17110-9408
PH: 717-787-4894
Email: jzook@state.pa.us
FAX: 717-705-6518

Jan Osburn, AOSA Executive Assistant

AOSA, Inc.
Mail Boxes Etc. #285
601 S. Washington
Stillwater, OK 74074-4539
PH: 405-780-7372
Email: aosaoffice@sbcglobal.net
FAX: 405-780-7372



2007-2008 SCST EXECUTIVE BOARD

President

Gil Waibel, RST
Wyoming Seed Analysis Lab
749 Road 9
Powell, WY 82435
307-754-4750
Fax 307-754-4932
gwaibel@uwyo.edu

Vice President

Doug Miller, RGT
Illinois Crop Improvement Assn.
3105 Research Rd.
P.O. Box 9013
Champagne, IL 61826
217-359-4053
Fax: 217-359-4075
dmiller@ilcrop.com

Director-at-Large

Sue Alvarez, RST
Seminis Vegetable Seeds
2700 Camino del Sol
Oxnard, CA 93030
805-918-2469
Fax: 805-918-2424
Sue.Alvarez@seminis.com

Director-at Large

Terry Dunfield, RST
BioDiagnostics West, LLC
P.O. Box BB
2491 Kimberly Rd., Ste T.
Twin Falls, ID 83303
208-732-0013
Fax: 208-732-0014
Terry.Dunfield@bdwtesting.net

Director-at Large

Jane Penrose, RST
Agri Seed Testing
1930 Davcor Ct. SE
Salem, OR 97302
503-585-1440
FAX: 503-588-0733
jpagriseed@comcast.net

Director-at Large

Michael Stahr, CGT
128A Seed Science Center
Iowa State University
Ames, IA 50011
515-294-0117
Fax: 515-294-8303
mgstahr@iastate.edu

Director-at Large

Jean Tolliver, RST
Monsanto Seed Tech. Ctr.
460E. Adams St.
Waterman, IL 60556
815-264-8142
Fax: 815-264-7940
Jean.h.Tolliver@monsanto.com

Executive Director

Anita Hall
101 East State Street
PMB #214
Ithaca, NY 14850
607-256-3313
Fax 607-256-3313
scst@twcny.rr.com



SEED TECHNOLOGIST NEWSLETTER EDITORIAL STAFF

AOSA EDITOR

Cindy Finneseth
Seed Testing Coordinator
Division of Regulatory Services
University of Kentucky
103 Regulatory Services Building
Lexington, KY 40546-0275
859-257-2785
Fax 859-323-9931
Cindy.Finneseth@uky.edu

SCST EDITOR

vacant

NORTHWEST I

Maryanne Triggs
Washington State Dept. of Ag.
21 N. 1st Ave., Suite 203
Yakima, WA 98902
509-225-2630
Fax 509-454-4395
mtriggs@agr.wa.gov

MIDWEST IIA

Jim Lair
USDA/ NASS – Grain Yields Lab
c/o IL. Department of Agriculture
801 Sangamon Ave., P.O. Box 19281
Springfield, IL 62794
217-492-4295 Ext. 254
Fax 217-492-4291
j_lair@nass.usda.gov

MIDWEST IIB

Ronny Parmely
SDSU Seed Lab
P.O. Box 2207-A
Brookings, SD 57007
605-688-6636
Fax 605-688-4013
Ronny_Parmely@sdstate.edu

NORTHEAST III

Norma Rossel
Johnny's Selected Seeds
955 Benton Avenue
Winslow, ME 04901
207-861-3939 ext. 301
Fax 207-861-8381
nrossel@johnnyseeds.com

SOUTHWEST IV

Sue Alvarez
Seminis Vegetable Seed
2700 Camino del Sol
Oxnard, CA 93030
Phone: (805)918-2469
FAX: (805)918-2424
sue.alvarez@seminis.com

SOUTHERN V

Aaron Palmer
Arkansas State Plant Board
#1 Natural Resources Dr.
Little Rock, AR 72205
501-225-1598
Fax 501-225-7213
Aaron.Palmer@aspb.ar.gov

CANADA

Doug Ashton
CSAAC
108 Vaughan St
Almonte, ON
CANADA , K0A 1A0
613-256-7411
Fax 613-256-0485
csaac@rogers.com

BOOKSHELF

Harold Armstrong
Monsanto
460 E. Adams St.
Waterman, IL 60556
815-264-8142
Fax: 815-264-7940
harold.r.armstrong@monsanto.com

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NOTES FROM THE EDITORS

The Newsletter Committee had a very productive meeting at the AOSA/SCST annual meeting in Cody, WY. It was wonderful to have so much participation and there were many great suggestions for future articles. A great big thank you to Wendy Zillgitt for her many contributions as the Newsletter editor representing SCST. However, now the Newsletter Committee needs a successor. If you are interested, please contact me or Anita Hall for more information.

Please remember that articles can be submitted at anytime. Don't wait for the deadline! Anyone can submit an article, but we consider the appropriateness and timing, and will not break copyright laws. We reserve the right to edit, but will not change content.

Some suggestions for articles:

Seed testing or method ideas, Analyst news, Lab spotlight, General interest, Technical information, Position announcements/Employment opportunities, Workshop announcements, Seed school announcements and Meeting summaries or announcements

Cindy Finneseth, AOSA Editor

Deadline for the February 2008 Newsletter Issue: January 15, 2008

Submit articles by email to Cindy Finneseth or your regional editor. Find the names and contact information on page 4.

Websites

AOSA (www.aosaseed.com)
 SCST (www.seedtechnology.net)

EXECUTIVE BOARD REPORTS

AOSA Presidential Report

The summer has flown by way too quickly since our annual meeting in Cody. During that time I have attended to five meetings. I represented AOSA at the ASTA, AOSCA, and AASCO annual meetings. I represented the SDSU program at the Montana and Northern Seed Trade. All were excellent meetings and the face to face contact with other organizations pays off. One comment I heard a year or two ago that will stick with me was – "The world is ruled by those that show up." For our organization to maintain viability and relevance we have to have to be at the table. If we want to have influence on the seed industry we must have a presence at these meetings. We are only going to see an increase in seed testing and seed testing issues as more traits are added to seed, plus the fact that seed will keep increasing in value as traits are stacked. If our affiliate organizations know us, they will seek our input in seed testing issues and we will be present to offer to advice.

One of the affiliate meetings I attended was the ASTA Annual Convention in Denver this summer. The meeting had over 400 attendees from the USA and other countries representing a very wide variety of seed companies. It was a good meeting with lots of interesting lectures and discussions about seed issues. I had several conversations with seed company executives/owners about seed testing issues. There is definitely a lack of communication in general form AOSA about seed testing capabilities and limitations of certain tests, and how our rules for testing seed are developed. One comment I've also heard at this and other ASTA meetings concerning the possible consolidation is "why are there two seed testing organizations?" or "you mean there's more than one?" To a lot of people we are already one organization. ASTA continues to be a supporter of the AOSA Rules for Testing Seed – we just need to make sure we communicate and work with them on seed testing issues.

On the heels of the ASTA meeting was the American Association of Seed Control Officials (AASCO) meeting in St. Paul, MN. Several of you already wear dual hats in AOSA and AASCO. This is the third year I have attended this meeting – it is one of the best meetings as they bring in relevant and timely industry and government speakers on topics that directly affect us in seed testing. You get a chance to visit with seed regulatory personnel in many states and walk away with perspectives from multiple viewpoints. If you have an opportunity to attend one of their meetings, go! Their discussions/speakers covered topics including noxious weed seeds in wild bird feed, Roundup Ready alfalfa seed, GMOs in organic seed, Liberty-Link rice contamination, and many other relevant topics. AOSA/SCST consolidation was also a topic as Dr. Guerke gave an informative presentation at the meeting. No major concerns were raised about consolidation, discussion centered around fees and making sure state labs will be able to afford to belong to the consolidated organization.

The AOSCA meeting followed in Tunica, MS. As guaranteed by the host, Dr. Bennie Keith of the MS Crop Improvement, we did not have any snow to worry about in July. AOSCA is another of our strong and critical partners as they require certified seed to be testing according to AOSA Rules. AOSCA has seed testing concerns and requests they will be asking AOSA and SCST to address. Their meetings are always interesting as they bring in the field inspection side, which hopefully always matches what we see in the seed testing laboratory.

In all the meetings I attended, no group was opposed to the prospect of AOSA/SCST consolidation as long as we have checks and balances in place. Everyone sees the benefit of having one larger and stronger organization that will reduce duplication of effort and be more efficient.

Another thing I noticed at these meetings and the other two I attended was the presence (and sometimes absence) of seed testing labs. Personally I like to see multiple labs being represented at the meetings – that allows for multiple viewpoints to be heard from testing labs and not just one lab's version of the seed testing industry. I would highly encourage you to attend your state, regional and national seed industry meetings. If you're not there, you don't have a seat at the table saved for you and you are forgotten.

My take home message is that we (AOSA) need to be at these seed industry meetings. If you are a lab manager you need to attend the relevant seed industry meetings and represent your lab and the seed testing industry. Consistent, uniform, accurate seed testing is vital to the industry.

Sincerely,
Brent Turnipseed

SCST Presidential Report

Dear SCST Members:

The summer has been a fast one and time has gone quickly since the annual meeting. The meeting was very well attended, and much work was accomplished. Since the annual meeting in Cody, I have been finalizing the meeting details and closing out the meeting account.

This summer, I represented SCST at the ASTA meeting in Denver. Important topics for ASTA include issues surrounding the international export of seeds (including the protection of intellectual rights), native species issues, and an update on the court case which was unfavorable concerning how the APHIS approval process on Roundup Ready alfalfa was conducted. I reported on SCST activities during the Seed Industry Relations Committee meeting. We also discussed the proposed consolidation of AOSA and SCST and this was received favorably by the group. While in Denver I was able to

attend the 20th anniversary celebration of STA, it was nice to see several SCST members at this historic event.

I also attend the AASCO meeting in St. Paul and presented an SCST update. The seed control officials had excellent meetings with many interesting presentations and discussions. Topics included weed seed labeling for wild bird feed, the recent Round Up Ready Alfalfa decision, native seed testing and TZ labeling, the need for trait testing on non-trait varieties, and a new training manual for seed samplers. The AASCO discussed sharing booth space with AOSA and SCST at industry meetings and making a joint presentation with SCST and AOSA at the Independent Professional Seedsman Association (IPSA) annual meeting.

The AASCO meeting was held at the same hotel that our annual meeting will be held at in 2008. The facilities are plentiful, and our consolidation discussions alone require everyone's input. The hotel is very nice and well located, and I encourage everyone to make plans to attend.

The AOSCA meeting was held in Tunica, Mississippi. Discussion topics included concerns about native species testing issues, the roundup ready alfalfa situation, defending intellectual rights of PVP varieties, and variety review board issues. I gave a report on SCST activities during the Advisory Committee meeting.

Our organization has been busy with committee work this summer. A number of committees have had conference calls and are working hard on initiatives from the annual meeting. If you would like to organize a conference call for your committee please contact Anita for assistance.

We are blessed to have so many who are willing to serve, and help our organization grow and remain relevant. I thank all of you who are willing to roll up their sleeves, and help SCST further its cause in seed testing.

Sincerely,
Gil Waibel, RST
SCST President

SCST Membership Update
July-August, 2007

New RSTs- Congratulations!

Michael Aberle, Ransom Seed Lab, Carpinteria, CA
Steve Beals, Illinois Crop Improvement Association, Champagne, Illinois
Shannon Hofstadter, Mid West Seed Services, Brookings, SD
Erika Jones, Mid West Seed Services, Brookings, SD
Colleen Oliver, BioDiagnostics West LLC, Twin Falls, ID
Melissa Phillips, Mid West Seed Services, Brookings SD

Christine Young, Johnny's Selected Seeds, Winslow, ME

New CVTs- Congratulations!

Josh Bice, Syngenta Seeds, Owatonna, MN
Sarah Graybill, Mid West Seed Services, Brookings, SD
Michael Nieman, Mid West Seed Services, Brookings, SD

Additional CGT certification- Congratulations!

Usha Arora, RST, CGT (ELISA), Iowa State University, Ames, IA.

CSA Grandfathered as an RST- Welcome!

Andrae McMillian, Alabama Dept. of Agriculture, Montgomery, AL

New Associate Members- Welcome!

Chandra Shekara, BioDiagnostics, River Falls, WI

RST to RMI

Sharon Hanson-Gutormson, Mid West Seed Services, Brookings, SD
Stewart Oliver, GROWMARK, Bloomington, IL

RGT to RMI

Tracy Nelson, BioDiagnostics, Inc., River Falls, WI

Submitted by:

Anita Hall, SCST Executive Director

AOSA/SCST ANNUAL MEETING RECAP

USDA Workshop on Canadian Seed Grading Workshop

The USDA in conjunction with CFIA has begun a program of accrediting qualified analysts within the United States to issue Canadian Seed Grades on the certificates of analysis for seed exported to Canada from the United States. These analysts must demonstrate proficiency at reading, interpreting, and applying the Canadian Seed Grading tables to the seed sample. The analysts must successfully write the exam on each of the seven different Grade Tables. Analysts passing the exams become accredited to grade within the scope of one or more of the Grade Tables.



The workshop started with a welcome by Perry Bohn of the USDA and Frank Lewis of the CFIA. The instructors were David Bitzel of the USDA and Joanne Hinke of the CFIA. Each of the grade tables were detailed and examples given, with practice tests taken by the students. It was a long full day of training, but even so, it could have been longer. Approximately 20 individuals attended the training sessions. Some individuals wished to gain accreditation for one particular crop kind, some for several crops, and others for all crops.

The accreditation program is still in process of finalization between the United States and Canada and issuance of Canadian Grades cannot begin. It is hoped this program can be completed by the time this newsletter is published.

By accrediting highly qualified analysts within the U.S. to issue Canadian Seed Grades on seed tests performed for export, movement of the seed into Canada is facilitated and the industry saves time and expense of another grading examination at the border.

Larry Prentice
Mid-West Seed Services

Native Seed Symposium

The Seed Testing Research Foundation (STRF) sponsored the 7th Annual Native Seed Quality Symposium on Tuesday, June 5, at the 2007 AOSA/SCST Annual Meeting in Cody, WY. Agri Seed Testing, Salem, OR, Anchor Paper Co., St. Paul, MN and Mid-West Seed Services, Inc., Brookings, SD generously supported the program.

The morning session began with speaker remarks, followed by a question and answer opportunity regarding seed testing issues. The session featured: Scott Lambert, Bureau of Land Management, Boise, ID; Morgan Webb, Seed Check Technologies, Inc., Alberta, Canada; Stan Young, Utah Seed Certification, Logan, UT; Rod Fritz, Stock Seed Farm, Murdock, NE; Garth Kaste, Kaste Seed Farm, Fertile, MN; and Brenda Rogers, AOSCA/MN Crop Improvement Association, St. Paul, MN. The later portion related to seed testing consistency issues. Deborah Meyer of the CDFA, Sacramento, CA, discussed the importance of pure seed units in seed testing; Morgan Webb presented information regarding the Canadian seed industry, illustrating grade table usage; Larry Prentice, Mid-West Seed Services,



Brookings, SD, discussed warm season grasses; Sharon Davidson, Agri-Seed Testing, Salem OR, discussed cool season grasses; Victor Vankus, USDA National Seed Lab, Dry Branch, GA, presented information regarding purity, germination and tetrazolium testing and reporting of shrub species and Dr. Brent Turnipseed, South Dakota State University, Brookings, SD, outlined the evolution of seed testing.

Morgan Webb moderated the afternoon session focusing on regulatory changes, native seed research and testing and production considerations. Ethan Waltermire, Colorado Seed Lab, Ft. Collins, CO, presented background information and changes to the Colorado Seed Law regarding native species and described the "Criteria Key" used for determining appropriate use of TZ for species with no standard test method; Rick Dunne, Wholesale Seed at Wind River, Manderson, WY discussed his concerns with dormancy and testing of native species and recent changes to the Wyoming Seed Law; Deborah Meyer and Larry Prentice identified many of the sources of variability, including sampling and purity and the impact on germination and TZ results. Dr. Jeff Norcini, Univ. of FL, Quincy, FL discussed test methods and seed viability of *Coreopsis basalis*, *C. lanceolata*, *C. floridana* and *C. leavenworthii*. Stan Young reviewed the process and presented tips regarding development, preservation and release of native germplasm, focusing on the Great Basin area. Susan Winslow, Agronomist, Bridger Plant Materials Center, Bridger, MT, overviewed programs and activities of the Plant Materials Centers, focusing on the Yellowstone valley.



Following the lectures, the group proceeded to various production sites in the area then ended the day with tours of the Powell Research and Extension Center, including the seed laboratory facilities.

Cindy Finneseth
University of Kentucky Seed Program

TZ Workshop

Anette Miller coordinated an informative TZ workshop. Brent Turnipseed began with an overview of the history of tetrazolium testing and its importance in the seed industry. Brent stressed as our industry continues to change, tetrazolium testing will continue to be a reliable tool for seed analysts. The workshop was divided into 4 sessions:

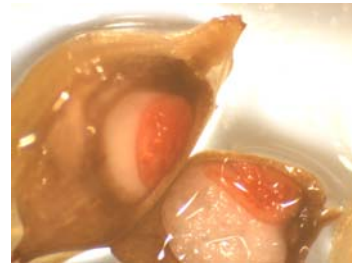
Pure Seed Determination and Effects on TZ
Moderators: Kari Fieldler and Sarah Danmen



Immature Seeds and TZ testing
Moderator: Richard Agnew

Evaluation of *Hypericum* and *Juncus*
Moderator: Kevin Buis and Cindy Finneseth

Hands on artifacts and preparation of TZ testing
Moderator: Victor Vankus

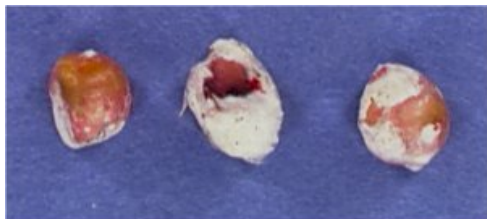


Each session provided informative information, even to the most seasoned seed analysts. The artifact session provided some entertainment, when trying to cut some extremely hard seeds. Brent Turnipseed mentioned using extra keen razor blades to ensure accurate cutting. For those of you interested they are available at www.emsidiasum.com.

Pamela Glanz, RST
NW Seed Testing, LLC.

Seed Pathology Workshop

The Seed Pathology Sub-committee workshop was held on the afternoon of June 6th, 2007 in Cody, Wyoming. Four excellent presentations were given to a packed room. During the half day session speakers spoke on multiple aspects of health hazards associated with work with seeds pathogens and airborne disease safety. The afternoon session was broken into two discussion topics, specific pathogen seed descriptions and Safety and Health issues related to working with seed.

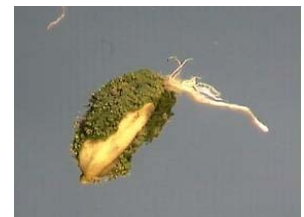


Dr. Bill Grey, Plant Pathologist at the Montana Foundation Seed Program, described head scab of wheat and the problems caused when *Fusarium* infection occurs. Primary and secondary infection and variation in germination results, as well as, toxins produced by *Fusarium* and the health

hazards related to contact and ingestion was discussed.

Receiving, storing and germinating freshly harvested seeds and conducting germination tests on seeds when *Aspergillus* is present was covered by Mike Stahr Iowa State Seed Science Center seed laboratory manger.

The focus of the workshop shifted to the hazards of working with seed and to safety when working with seeds either infected with pathogens or treated with seed treatments. Albert Patin, a Safety and Health Consultant at South Dakota State University, illustrated the hazards associated with airborne fungal spores and how to



prevent exposure to those hazards. Three methods to prevent hazardous spore exposure were discussed, direct and indirect ventilation (containment methods) and personal protective equipment and how it should be worn.

Chip Witcher, an industrial hygienist with Syngenta Crop Protection, spoke on the hazards of working with pesticide treated seeds, good laboratory practices and monitoring laboratories for contamination.

Amanda Patin,
Mid-West Seed Services

Statistics Workshop

The Statistics workshop was held on the morning of June 6th, 2007 in Cody Wyoming. Dr. Sabry Elias and Dr. Riad Baalbaki presented an information-packed review of experimental design and data analysis focusing on seed testing research. During the half day session statistical definitions, a brief history of statistics, principles of experimental design (including discussions on completely randomized design and randomized completed design), and data analysis methods including ANOVA and factorial design were presented. Methods to compare means were briefly discussed. A comprehensive packet containing items discussed in the workshop, as well as, statistical reference information and website links was given to each participant. Due to time limitations participants expressed a desire for a follow up statistics workshop. This follow up workshop would expand on the background basics presented.

Amanda Patin,
Mid-West Seed Services

Genetic Technology Workshop

The “New Technologies” workshop was organized by the Genetic Technology Committee and held on June 6th in Cody, WY. The following presentations were made:

- Dr. Lawrence Goodridge, Colorado State University, Immunomagnetic Separation: An Introduction to Diagnostic uses of the Technology.
- Dr. Luther Talbert, Montana State University, Wheat CAP, Marker-assisted genotyping
- Dr. Norm Weeden, Montana State University, Recent Developments in MAS
- Brian Whitmier, Applied Biosystems, Real-time PCR Techniques
- Lisa Grauer – Molecular Devices Corporation, Different Techniques for Micro-arrays and Plate Scanners.
- Andrew Lord , BioTrove, SNP Genotyping for Large Sample Numbers

The workshop concluded with a group discussion. Visit the Genetic Technology to view some of the presentations: http://www.seedtechnology.net/genetic_committee.htm

Annual Meeting Opening Session

The annual meeting began with an opening session breakfast buffet and greetings from affiliate organizations. AOSA president Brent Turnipseed and SCST President Diane Mesa each made speeches and they were followed by the following representatives from affiliate organizations: AASCO President Joe Garvey, AOSCA board member Michael Moore, ASTA vice president for governmental affairs Leslie Cahill, CSAAC president Dianne Gilhuly, ISTA secretary general Michael Muschick, and ISST board member Michael O'Neil.

Seed Issues Forum

There were 14 table presentations and 5 posters at the 2007 Seed Issues Forum on June 7. This presented an opportunity for authors of some of the new rules proposals to clarify their proposals. This provided a very low key way for clarification of points or a chance to visually appraise a technique such as the alternative planting media for pelleted onions. The results of a chickpea germination referee were also presented as well as a practice proficiency test for herbicide bioassay. This provided the opportunity to improve future virtual referees and make them much stronger. There were two different applications of the tall fescue blowing point presented: development of a uniform blowing point and uniform blowing of germination only samples. The Seed Pathology Committee Webpage was available for attendees to browse. The Seed Technology Training modules via DVD were available for exploration and this project is approaching completion. The US Grader Accreditation program and the Accredited Seed Lab program were explained to interested onlookers. This was a chance to preview potential revisions to Corn germination evaluation to be included in the next revision of the Seedling Evaluation Handbook. The Seed Issues Forum was an excellent opportunity to visit with representatives of the distance learning program through CSU Seed Technology Educational Programs (STEP).

Once again participants were actively participating throughout the session. The forum was an excellent opportunity for bench analysts to inform others as to practical lab problems in a very informal and low key manner on a one to one basis. The session was very well attended and we hope that next year sees the need for an even larger room.

Harold Armstrong,
Monsanto Seed Technology Center

Rodeo Nite!

After a delicious bbq dinner the meeting participants put on their jeans, boots, and cowboy hats and loaded buses to head out to the famous Cody Rodeo Nite. The group headed to the crows nest where a large seating area had been set aside.

Cody is the Rodeo Capital of the world, top cowboys from across the continent come to Cody for the Stampede Rodeo. This year marks the 88th Anniversary of the Buffalo Bill Cody Stampede in Cody. The Cody Stampede Rodeo is a truly Western event that has its roots in ranch contests and games as well as spectacle and drama borrowed from the world famous Wild West shows produced by Col. William F. "Buffalo Bill" Cody.



AOSA/SCST Banquet
June 9, 2007

The annual AOSA/SCST Banquet was held on June 9, 2007 in the Holiday Inn Central Room in Cody, Wyoming. The banquet was preceded by the STRF silent auction and reception. Jack Peters was the Master of Ceremonies. Jane Penrose gave the Invocation, and a moment of silence was held in memory of



Mike Dideriksen. Gil Waibel was presented a stuffed Yogi Bear by the children of seed analysts in attendance at the meeting, in appreciation for all his hard work in helping to put the meeting together.



Dinner consisted of salad and bread, prime rib, baked potato, steamed vegetables, and cheese cake. During the banquet, Wayne Guerke was presented with the AOSA Meritorious

Service award; the SCST Meritorious Service award was given to Mike O'Neil. Entertainment was provided by Gwen Peterson, who kept the audience laughing with her hilarious original poetry about SCST and AOSA members, as well as such topics as farming in Montana, the "long black hair" and other experiences with getting older. Ms. Peterson was very successful in getting the audience to participate in poetry and song (yeah, right), and she even managed to get Jack Peters to sing along while she played a little red guitar to the tune of "Glory,



Glory I'm a Codger." Interesting table centerpieces were given as door prizes. At the end of the banquet, the STRF quilt was raffled off; Ellen Mary was the winning ticket holder.

Sue Alvarez,
Seminis Vegetable Seeds

Day Trip to Thermopolis and Meeteese, WY June 7, 2007

Two yellow school buses filled with family members of AOSA-SCST meeting participants departed Cody, Wyoming on June 7th for a day of discovery 85 miles to the south in Thermopolis. It was a cold, windy day for early summer following the passing of a storm front the night before, so a visit to a hot springs area was particularly appealing. However, before visiting the hot springs, a stop at the Wyoming Dinosaur Center and Dig Sites was on the schedule.



The museum at the Wyoming Dinosaur Center has 12,000 square feet of exhibition area in which over 200 displays of fossils from early geologic time periods are displayed in chronological order. These displays include over 20 full-size mounted dinosaur skeletons. The museum included coverage of the exploration and excavation process, including digging, preparation of the fossils, and casting to make facsimiles for display. An area that was particularly captivating was a glass observation area where museum technicians were working on the preparation and casting of specimens. The museum gift shop was especially enjoyable for the children in the group since it had many novelty and educational items as well as toys relating to dinosaurs. Unfortunately, the dig sites were closed due to the heavy storm the previous evening.



The next stop in Thermopolis was Hot Springs State Park along the Big Horn River. This is the site of the "World's Largest Mineral Hot Springs" and some geologists think that it is connected with the Yellowstone hot springs system. The main attraction, especially for the children, was the Star Plunge, which has indoor and outdoor pools, hot tubs, whirlpools, a vapor cave and water slides, all of which have thermally heated spring water. The water temperature in some areas was in the upper 90 and low 100 degrees Fahrenheit. Those that

enjoyed the hot pools exited with a most relaxed, if not enervated, appearance. For those that took a walk outside on this cold, windy day were treated to terraces of

thermal pools bubbling up from the depths of the earth and “Rainbow Terraces” of long time deposits formed from the mineral laden water as it seeps down the embankment to the Big Horn River.

The tour group was delighted with an unannounced stop in the town of Meeteetse on the return trip to Cody. This small community 32 miles south of Cody, was founded in 1896 and takes its name from the Shoshone Indian word meaning “meeting place.” Meeteetse predates Cody and retains its western character with wooden boardwalks, watering troughs, hitching posts and historic buildings dating to the turn of the century. The star attraction in Meeteetse is the town’s free museum, which contains an extensive collection of photographs from Charles Belden and artifacts from the old west. There is also a wildlife exhibit featuring mounts of one of the largest bears known in the region as well as two grey wolves from Yellowstone. Following the museum visit, most of the group moseyed across the street to the “Cowboy Chocolatier and Soda Fountain” for a treat of hand-dipped ice cream, soda and delicious home-made chocolates.

A tired, but satisfied group returned to the Holiday Inn conference center in Cody in time for dinner.

Dr. Wayne Guerke

Post-Convention Tour to Yellowstone

On Monday, June 11, 2007, two yellow school buses filled with seed analysts and family members traveled west from Cody, Wyoming toward the East Entrance of Yellowstone National Park. The scenic route followed along the north fork of the Shoshone River, gaining 2000 feet in elevation along the way and passing by lingering snowfields and small waterfalls. The weather was cool and overcast, but the rain held off until the very end of the day.



After a short wait due to road construction, we entered a beautiful landscape filled with wildflowers such as lupines, blue flax, white phlox, glacier lilies and the Yellowstone flower fringed gentian. Birds were also numerous, including white pelicans, mallards, common flickers, violet-green swallows, Barrow’s goldeneye, mountain bluebirds, ravens, red-tailed hawks, osprey, and two bald eagles. We passed by Yellowstone Lake, bordered by occasional thermal steam vents, and got a view of the distant Tetons.

Some of the wildlife we saw included herds of bison and elk, mule deer, coyotes, and a red fox. From Fishing Bridge we could see plentiful native cutthroat trout. Vast areas that had

been burned in 1988 were showing evidence of forest regeneration. We passed through the area known as the “Grand Canyon of the Yellowstone” and stopped at the Lower Falls – each new view from the next vantage point was more fabulous than the last, and you couldn’t help but take beautiful photos along the way. At Grand View Point we stopped for a picnic lunch. Next we went on to Upper Falls for more beautiful views. Our final stop was the Upper Geyser Basin, with the world’s largest concentration of geysers. The timing was perfect, as Old Faithful went off ten minutes after we arrived (the average interval between eruptions is more than 1.5 hours). There were also plenty of other geysers, pools, mudpots, and springs in the area.



Photo credit: K. Von Lanken

The highlight of the tour occurred on the way out of the park. We were fortunate to get a very good look at a young grizzly bear foraging for grubs on a hillside just above the road. He didn’t seem to mind the two busloads of people taking countless photos at the side of the road! A few lucky travelers also spotted two moose on the way back to Cody.

Sue Alvarez,
Seminis Vegetable Seeds

COMMITTEE REPORTS

Rules Committee Update Guidelines for Submitting an AOSA Rules Proposal

The following guidelines are provided to aid in preparing a proposed change to the AOSA Rules for Testing Seeds. All rule change proposal forms must be submitted to the AOSA Rules Chair by October 15th, 2007 for review by the Rules Committee. After review, you may receive confirmation of acceptance by the Rules Committee for publication in the newsletter, or receive a request to amend your proposal and provide additional information for clarification, or the proposal may be rejected. For additional information, please visit the AOSA Rules Committee webpage:
http://www.aosaseed.com/rules_committee.htm#RULES%20COMMITTEE

What is the Purpose for Rule Change Proposals?

Rule change proposals are required for changes to be made to the AOSA Rules for Testing Seeds, the Uniform Classification of Weed and Crop Seeds Contribution No. 25 to the Handbook on Seed Testing, the Seedling Evaluation Handbook Contribution No. 35 to the Handbook on Seed Testing and The Uniform Blowing Procedure – Contribution No. 24 to the Handbook on Seed Testing.

When preparing a proposed change to the AOSA Rules please demonstrate the following:

- The proposed method is equal to or better than one currently in the AOSA Rules.
- The proposed method is repeatable within a laboratory and among laboratories.
- The proposed method is necessary to meet the needs of seed analysts or the seed industry or regulatory agencies.

Who May Submit A Rule Change Proposal?

Rule change proposals must be sponsored either by an AOSA Laboratory, AOSA Committee, AOSA Subcommittee, or SCST Registered Member.

How to Complete the AOSA Rule Change Proposal Form

1. **PURPOSE:** Please give a concise reason for submitting the rule proposal. If appropriate, include a financial impact statement (i.e., who and what will be affected by the proposal).
2. **PRESENT RULE:** If the rule proposal is to change or amend a present rule, please provide the wording of the present rule as it appears in the current AOSA Rules. If the proposal is a new rule, state "New Rule."
3. **PROPOSED NEW RULE:** Please provide your proposed rule change as you would like to see it worded in the AOSA Rules. If the proposal is to add a purity testing method, the author must also submit a proposal for a germination testing method for the kind, and in addition must also provide the appropriate rule change to Handbook 25. The same is true for adding a germination method for a new species; all three areas must be uniformly addressed.
4. **HARMONIZATION:** Does this proposal harmonize with the Federal Seed Act, Canadian Methods & Procedures, and the ISTA Rules? If not, please explain.
5. **SUPPORTING EVIDENCE:** The following are intended to be helpful guidelines.
 - A. If proposing a change to a current rule you must provide data that substantiates the change. This may include, but is not limited to:
 - 1) Experimental data to support a change of test duration, temperature requirements, substrate or dormancy breaking methods.
 - 2) GRIN or other noted authority for common name changes.
 - 3) Experimental data supporting a change in purity test procedures.
 - 4) Survey of laboratories or referee results.
 - B. If a new kind or species is being proposed, the following types of supporting evidence must accompany the proposal.
 - 1) Seed counts in accordance with Appendix 4 in AOSA Rules are required for adding new species to Table 1.

- 2) Pure seed unit (PSU) for kinds being added to purity or germination.
- 3) Handbook 25 classification scheme for new kinds being added for purity or germination methods.
- 4) Comparative germination data for new species, this should include the following:
 - A minimum of 10 lots, more lots of non-uniform kinds may be appropriate, less lots of kinds that are not readily available.
 - Dormancy breaking methods for fresh seed.
 - Alternating temperatures compared to constant temperatures.
 - Light vs. dark requirements.
 - Comparison of germination substrata.
 - Seedling evaluation guidelines.
- 5) Citation of related scientific publications, books, web-sites, etc., relevant to proposal, if any.
- 6) Coordination with Germination and Purity subcommittees when appropriate.

Data collected can be completed within a laboratory or in cooperation with other laboratories. Referee projects may be acceptable.

6. **SUBMITTED BY:** Name of individual submitting the proposal or committee name and contact person, address, phone, fax and email address.
7. **DATE:** The date of submission to the Rules Committee. If revised, the revision date must also be stated.

How to submit an AOSA Rules Change Proposal

Rule change proposals must be submitted in electronic format (WordPerfect or MS Word) via e-mail or on diskette or CD to the AOSA Rules Chair. Supporting evidence should also be submitted in an electronic format (WordPerfect, MS Word or MS Excel). If an electronic version of supporting evidence is not possible please submit one hard copy.

The deadline for submission of proposals is **October 15, 2007**. Proposals received after this date will not be considered.

Please note: Proposals submitted without following these guidelines will be returned to the author and will not be considered by the Rules Committee.

Submit proposals to the Rules Committee Chairperson:

Cindy Finneseth

University of Kentucky Seed Testing Laboratory
 103 Regulatory Services Bldg.
 Lexington, KY 40546-0275
 Phone: 859-257-2785
 FAX: 859-257-7351
 E-mail: Cindy.Finneseth@uky.edu

RULE CHANGE PROPOSAL FORM

PURPOSE OF PROPOSAL (Provide a brief general description of the intent of the proposal. Include a financial impact statement if appropriate.)

PRESENT RULE (Show present rule as published, or if a new rule, state "New Rule.")

PROPOSED RULE (State the proposal exactly as it would appear in the AOSA Rules.)

HARMONIZATION STATEMENT (Explain how proposal will harmonize with Federal Seed Act, Canadian Methods & Procedures, and ISTA Rules. If the proposal does not harmonize with these procedures explain why not.)

SUPPORTING EVIDENCE (Please include research data, literature citations, copies of published papers, or other appropriate information.)

SUBMITTED BY (Name, complete address, phone, fax, e-mail and sponsorship affiliation.)

DATE SUBMITTED

<i>Member</i>	<i>Term Expiration</i>	<i>Location</i>
Cindy Finneseth, Chair	2011	Kentucky State Seed Lab
Mark Hafdahl	2011	North Dakota State Seed Lab
Joanne Hinke	2011	CFIA Saskatchewan

Patsy Jackson	2009	USDA-AMS, Seed Regulatory and Testing Branch
Nancy Ashby	2010	WA Department of Agriculture
RULES COMMITTEE- Ex-officio Members		
<i>Member</i>	<i>Ex officio</i>	<i>Location</i>
Dr. Sabry Elias	Research Committee	Oregon State Seed Lab
Ken Greger	Referee Committee	Idaho State Seed Lab
Dr. Allen Knapp	Editorial Committee	Iowa State University
Michael Gerdes	SCST Representative	Syngenta Seeds
Steve Jones	ISTA Rules Committee	NIAB United Kingdom

**AOSA/SCST REFEREE RESEARCH PROJECTS
2007/2008**

AOSA Chair – Ken Greger
kgreger@agri.idaho.gov

SCST Chair – Jean Tolliver
jean.h.tolliver@monsanto.com

Region I – Northwest

AOSA Regional Chair – Victor Shaul
vshaul@agr.wa.gov

SCST Regional Chair – Victor Shaul
vshaul@agr.wa.gov

- Garden Pea temperature to 25°C – Mike Gerdes
- 1/3 seed rule germination on thickspike wheatgrass or wildrye – Cindy Davis
- Spinach Temperature @ 10°C or 20°C – Barbara Cleave
- Florescence on ryegrass – Sabry Elias

Region II – Midwest

AOSA Regional Chair – Mike Stahr
mgstahr@iastate.edu

SCST Regional Chair – Laura Carlson
laurac@mwseed.com

- Virtual Corn Seedling Referee – changes to Seedling Evaluation Handbook - Mike Stahr
- Sunflower Referee – comparing the germination testing of different seed types of sunflower – Laura Carlson & Larry Prentice

Region III – Northeast

AOSA Regional Chair – Chuck Boettinger
cboettinger@state.pa.us

SCST Regional Chair – Norma Rossel
nrossel@johnnyseeds.com

- Do hot peppers need to have a longer final count date
- Methods for facilitating emergence of garden beans from seed coat for ease of seedling evaluation

Region IV – Southwest

AOSA Regional Chair – Ethan Waltermire **SCST Regional Chair – Sue Alvarez**
csi@lamar.colostate.edu sue.alvarez@seminis.com

- Pelleted onion – Organic growing media vs standard germination (T) methods – Sue Alvarez & Ha Ung
- Virtual Referee on Beta vulgaris – Ethan Waltermire
- Sakata – Triploid watermelon germ – Guin Jenanyan & Olga Maseda

Region V – Southern

AOSA Regional Chair – Cindy Finneseth **SCST Regional Chair – Amanda Patin**
Cindy.Finneseth@uky.edu amandap@mwseed.com

- Bromus Virtual & Real Seed ID Referee – Cindy Finneseth
- Browntop Millet TZ vs Germ – Paul Johnson

Region VI – Canada

AOSA Regional Chair – Janine Maruschak **SCST Regional Chair – Lisa Behnke**
jmaruschak@inspection.gc.ca lisa@seedcheck.net

- Poacea ID – mixture of different sp – mix crop, weed, noxious, & foxtail

GENERAL AND TECHNICAL INFORMATION

Turf-type and Forage-type Varieties of Tall Fescue
 Pennsylvania State Seed Lab
 Johnny Zook

In the Seed Technologist Newsletter Volume 78 No1 page 74-76 there was published a listing of turf-type and forage-type varieties of tall fescue. The list is made available to seed analysts for proper testing and labeling of tall fescue seed which is to be sold in Delaware, Maryland, Pennsylvania, New Jersey, Virginia and West Virginia.

The following is a revised list of tall fescue varieties as approved by the six states whose seed laws have special labeling requirements for tall fescue varieties. The list is not necessarily complete as new varieties are constantly being released. Additions or deletions are welcome at any time. For changes please e-mail jzook@state.pa.us .

TURF TYPE TALL FESCUE

5MN	ADVENTURE II	APACHE	ARISTOTLE
ACCORD	AIRLIE	APACHE II	ARIZONA
ACEQUICA	ALAMO	APACHE III	ARRIBA
ADOBE	ALAMO E	AQUARA	ARROYO
ADORA	AMBASSADOR	ARABIA	ASHVILLE
ADVANCE	AMIGO	ARID	ASTRO
ADVANTAGE	ANTHEM	ARID 3	ASTRO 2000
ADVENTURE	ANTHEM II	ARID II	ATF 707

ATF799	BONSAI PLUS	CROSSFIRE II	FINELAWN ELITE
ATF 806	BRAHMA	DAVINCI	FINELAWN I
ATHENS	BRANDY	DAYTONA	FINELAWN
AUSTIN	BRAVO	DEBUTANTE	PETITE
AVALON	BROOKSTON	DEFIANCE	FINESSE
AVANTI	BULL	DELMARVA	FINESSE II
AVANTI II	BULL II	DEMETER	FIREBIRD
AVENGER	BULLDAWG	DESIRE	FIVE POINT
AVID	CAMARILLO	DOMINION	FLORIDIAN
AXIOM	CAMBRIDGE	DUKE	FOCUS
AZTEC	CAREFREE	DUR	FORTE'
AZTEC II	CAREFREE II	DURANA	FORTUNE
BAJA	CAVALCADE	DURANGO	GALA
BANDANA	CAYENNE	DUSTER	GALWAY
BARANZA	CHAPEL HILL	DYNAMIC	GAZELLE
BARBIZON	CHESAPEAKE	DYNASTY	GENESIS
BARCELINA	CHIEFTAIN	EARTHSAVE	GLEN EAGLE
BARFELIX	CHIEFTAIN II	EINSTEIN	GOOD-EN
BARLEXAS	CHINOOK	ELDORADO	GQ
BARLEXAS II	CHIPPER	ELDORADO GOLD	GRANDE
BARNONE	CIMARRON	ELISA	GRANDE II
BARRERA	CLASS ACT	EMPEROR	GRASSLANDS
BARROBUSTO	CLEMFINE	EMPEROR II	GARLAND
BARRINGTON	COCHISE	EMPRESS	GREENKEEPER-
BARTES	COCHISE II	ENDEAVOR	WAF
BARUNDI	COCHISE III	ENDURE	GREMLIN
BARVADO	CODY	ENFORCER	GREYSTONE
BEACON	COLONEL	EQUINOX	GUARDIAN
BEAGLE	COMPANION	ERA	GUARDIAN 21
BEAVO	COMSTOCK	ESCALADE	HELIX
BENTON	CONESTOGA	EVERGREEN	HERITAGE
BILTMORE	CONSTITUTION	EXCALIBUR	HILLTOP
BINGO	CORGI	EXPEDITION	HOMESTEAD
BLACK	CORONADO	FALCON	HOUNDOG
BEAUTY	CORONADO	FALCON II	HOUNDOG 5
BLACK MAGIC	GOLD	FALCON III	HOUNDOG 6
BLACKWATCH	CORTEZ	FALCON IV	HOUNDOG II
BLADE RUNNER	CORTEZ II	FATIMA	HUBBARD 87
BONANZA	COVENANT	FESTIVAL	HUNTER
BONANZA II	COYOTE	FIDELITY	INFERNO
BONSAI	COYOTE II	FINELAWN	INNOVATOR
BONSAI 2000	CREWCUT	FINELAWN 5GL	INSIGNIA
BONSAI 3000	CREWCUT II	FINELAWN 88	ISI 8952
BONSAI E	CROSSFIRE	FINELAWN 8851	JAGUAR

JAGUAR 3	2 ND MILLENNIUM	PENN1901	SAVANNAH
JAGUAR II	MERIDIAN	PETITE	SAVOY
JB-2	MESA	PHOENIX	SCORPIO
JT-3	MIC 18	PICASSO	SCORPION
JT-9	MIRAGE	PICK 127	SCORPION II
JUBILEE	MICRO	PICK ZMG	SDB
JUSTICE	MICRO DD	PIEDMOUNT	SENTINEL
KALAHARI	MINI-MUSTANG	PIXIE	SERENGETI
KENTUCKY-31E	MINK	PIXIE E+	SHANNON
KICKOFF	MINX	PLANTATION	SHENANDOAH
KITTY HAWK	MIRAGE	PLATO	SHENANDOAH II
KITTYHAWK 2000	MOHAWK	POLY 6-38	SHERIDAN
KITTYHAWK SST	MOJAVE	POLY DUR	SHORTCUT
KOKANEE	MONACO	PRIDE	SHORTSTOP
L-89	MONARCH	PROSPECT	SHORTSTOP II
LABARINTH	MONTAUK	PURE GOLD	SIESTA
LANCER	MONTEBELLO	PYRAMID	SIGNIA
LANCER-E	MORGAN	QUANTUM	SILVERADO
LANCER 31	MURIETTA	QUEST	SILVERADO II
LARAMIE	MUSTANG	RAPTOR	SILVERSTAR
LEGEND	MUSTANG II	REBEL	SIX POINT
LEGITIMATE	MUSTANG 3	REBEL 2000	SOLARA
LEOPARD	MYSTIX	REBEL 3D	SOUTHPAW
LEPRECHAUN	N.D.	REBEL EXEDA	SOUTHEAST
LEXINGTON	N-25	REBEL II	SOUTHERN
LEXUS	NINJA	REBEL III	CHOICE
LF220	NINJA II	REBEL IV	SOUTHERN
LINDBERGH	NK 82508	REBEL JR.	CHOICE II
LION	NOBEL	REBEL PRO	SOUTHERN
LONGHORN	NORDIC	REBEL SENTRY	COMFORT
LS-1000	OASIS	REDCOAT	SOUTHERN
MAGELLAN	OBSDIAN	REGIMENT	COMFORT II
MARATHON	OL' GLORY	REGIMENT II	SOUTHLAND
MARKSMAN	OLYMPIC	REMBRANDT	SPHINX
MARKSMAN II	OLYMPIC GOLD	RENDITION	SR 8000
MASTERPIECE	OLYMPIC II	RENEGADE	SR 8100
MATADOR	ONCUE	RENEGADE II	SR 8200
MATADOR GT	ONYX	RESERVE	SR 8210
MAVERICK	P58	RICHMOND	SR 8250
MAVERICK II	PACER	RIVERSIDE	SR 8300
MB 215	PADRE	SAFARI	SR 8400
MEDALLION	PALISADES	SAMSON	SR 8500
DWARF	PEDESTAL	SANTA FE	SR 8550
MILLENNIUM	PEGASUS	SAPPHIRE	SR 8600

SRX 8350
ST. ANDREWS
STAG
STAGECOACH
STARFIRE
STARLET
STETSON
STONEWALL
SUCCESS
SUNDANCE
SUNDANCE II
SUNPRO
TAHOE
TALISMAN
TAOS
TAR HEEL
TAR HEEL II
TAURUS
TEMPEST
TEMPO
TEMPO II
TERRANOVA
TF 8805
TF-66

THOROUGHbred
THUNDERBIRD
TIP
TIPTON
TITAN
TITAN 2
TITAN Ltd.
TITANIUM
TOMAHAWK
TOMAHAWK-E
TOMAHAWK
GOLD
TOMAHAWK GT
TOMBSTONE
TOMCAT
TORPEDO
TOTAL
TRACER
TRADITION
TRAILBLAZER
TRAILBLAZER II
TRANSITION
TRAVELER
TRIBUTE

TRIDENT
TROOPER
TULSA
TULSA II
TURBO
TURNBERRY
TUSCANY
TUSCANY II
TUXEDO
TWILIGHT
TWILIGHT II
ULTIMATE
VEGAS
VELOCITY
VENANZIO
VERANDA
VIRTUE
VIRTUOSO
WAF
WATCHDOG
WILDCAT
WILDFIRE
WILLAMETTE
WINCHESTER

WINDSOR
WINDSOR II
WOLFPACK
WOLVERINE
WPEZE
WRANGLER
WRANGLER II
WYATT
YOSEMITE
ZANZIBAR

FORAGE TYPE TALL FESCUE

ALTA
ALTA II
ARONDE
AU TRIUMPH
BARCEL
BARFA 6FRD
BARIANE
BAROLEX
BARVETIA
BRONSON
CAJUN
CATTLE CLUB
CHALLENGER
COURTENAY
DESOTO
DESPERADO
DOVEY
ENDO FREE

ENHANCE
FAWN
FESTORINA
FORAGER
FUEGO
GEORGIA 5
GLORIA
GOAR
GRASSLANDS
ADVANCE
GRASSLANDS
FLECHA
GRASSLANDS
ROA
HIMAG
HOEDOWN
HOKURYO
JESUP

JOHNSTONE
KENHY
KENMONT
KENTUCKY 31
KENWELL
KORA
MANADE
MARTIN
MARTIN 2
MAX
MAXIMIZE
MAXQ-JESUP
MISSOURI-96
MOZARK
NANRYO
OREGON 99
ORYGUN
PENNGRAZER

PENNINGTON
63-70
PHYTER
SAFE
SEINE
SELECT
SIBILLA
SOUTHERN
CROSS
STARGRAZER
STEF
STELLAR
STOCKMAN
TETON
YAMANAMI

Cotton Cool Germination Study Group

2006-2007

Fiedler, K.A., A.L. Patin, T.J. Gutormson
Mid-West Seed Services, Inc., Brookings, South Dakota USA

Introduction

This study group was designed to include laboratories routinely conducting or planning to conduct cotton cool and warm germination tests. The group's objective was to compare within and among laboratory variation of cotton cool and warm germination results across six seed lots and six testing periods within a testing season (October-April). Within and among laboratory variation results are reported. A tetrazolium test was also performed on one seed lot by five laboratories. Mid-West Seed Services, Inc. administered the study, assembled the data and performed analysis.

Methods

Participating Laboratories

Laboratories routinely conducting cotton cool and warm germination tests or laboratories considering conducting this test type were included in this study. A participation fee was charged. The 2006-2007 participating laboratories were:

- Alabama Department of Agriculture-John Crayton, Laboratory Manager
- Bayer Crop Science-Cathy Spencer, Project Supervisor
- Bayer Crop Science-Jeremy Blair, QA Laboratory Manager
- BioDiagnostics, Inc.- Marcia Huppert, Supervisor, Diandra Viner, RST, CGT
- Delta and Pine Land Company-Dennis Ledbetter, QA Manager Western Region
- Delta and Pine Land Company-Brian McKenzie, Regional QA Manager
- Delta and Pine Land Company-Doug Stutler, Regional QA Manager Texas
- J.G.Boswell Company-Shirley Roberts, RST
- Mid-West Seed Services, Inc.- Kari Fiedler, RST, CGT, Herbicide & Vigor Coordinator
- Mississippi State Seed Testing Laboratory - Fabian Watts, RST
- Monsanto-Jean Tolliver, RST, IST, QA Seed Services, Herbicide Coordinator
- Texas Department of Agriculture-Jeffery Claxton, CSA in germination
- Texas Department of Agriculture-Marilyn Demons, CSA in germination, purity
- Texas Department of Agriculture-Brenda Ahlhorn, CSA in germination, purity
- West Gaines Seed and Delinting-David Bush, QA Manager

Seed Lots

Six seed lots were supplied by participating seed companies and used throughout the testing season. All sub-samples were packaged in individual plastic sample bags at the beginning of the study and stored in a 10°C chamber until they were shipped for testing. Each sample size was approximately 1000 seeds. In April, an additional seed lot was sent out for the tetrazolium test.

Testing Months

Six seed lots were shipped for testing at each testing interval. Testing months were October, November, December, January, February and April. Participating laboratories were requested to plant the study within seven days of receipt.

Data Collection

A standard laboratory data form and a data faxing form (including laboratory code, seed lot numbers, normal, abnormal and dead) were developed. The data forms were faxed or e-mailed to MWSS as soon as testing was completed. All data was entered into a spreadsheet and overall means and standard deviation were calculated. All laboratories received monthly results with the next sample shipment. Cool and warm germination values were the primary data collected. Laboratories were also asked to complete a testing methods sheet. In addition a tetrazolium data sheet, one seed lot, and working papers on TZ were sent to five of the participating laboratories.

Results and Discussion

Participating laboratories submitted their testing methodology. The measurement method was documented; five laboratories utilized 4 cm (1.57 inches) measurement for cotton cool while eleven laboratories utilized 1.5 inches (3.81 cm). We propose standardizing the measurement length to 4 cm, as both ISTA and AOSA vigour handbooks state 4 cm should be utilized. AOSA also states 1.5 inches. Additional potential source of variation among laboratories involves chilling media prior to placing seeds on towels. Thirteen laboratories prechilled their towels this year compared to ten laboratories in the 2004-2005 study group. We propose chilling of towels to 18°C prior to placing seeds on towels (ISTA recommendations 1995). Resolving these two sources of variation should lead to increased standardization of the cool cotton test.

Five laboratories also participated in the tetrazolium test on one seed lot. The five laboratory average of viable seeds was 94.2% while viability results ranged from 88-98%.

Participating laboratories cool germination percentages for six seed lots averaged across testing intervals (October, November, December, January, February, April) are presented in Table 1. In order to assess within laboratory variation for the cotton cool test, standard deviations were computed and are presented in Table 2. In 2007, average cool germination standard deviation ranged from 3.8-21.7 with six laboratories above 7.0. The mean standard deviation across laboratories was 8.4. These results help individual laboratories assess their data variability across the same seed over different testing times.

Standard germination mean percentages ranged between 83% and 92% and are presented in Table 3. Warm germination standard deviation ranged from 1.5-5.2 with ten laboratories at or above 2.5 (Table 4). The mean standard deviation across laboratories was 3.3.

Conclusion and Acknowledgements

The study identified some potential areas for further standardization including measurement units and chilling media prior to seed placement. We hope to work with study participants in the upcoming months to further identify and improve the uniformity of cotton cool tests.

The Mid-West Seed Services, Inc. staff would like to thank all the participants and companies supplying seed for a successful study.

Table 1. Mean cotton cool germination percentages of six seed lots tested at one month intervals (October 2006-April 2007) by fifteen laboratories.

Seed Lots						
	1	2	3	4	5	6
Lab #	Germination %					
1**	61	60	39	68	85	55
2**	67	66	62	73	85	68
3	67	63	51	74	91	70
4	58	54	36	66	87	64
5	61	63	49	76	91	71
6***	65	63	48	71	89	71
7*	59	61	35	73	82	65
8	43	53	27	60	74	46
9	57	56	47	68	89	68
10	63	65	58	75	88	73
11	65	57	40	70	88	65
12***	59	59	46	75	89	65
13	n/a	n/a	n/a	n/a	n/a	n/a
14***	64	61	56	74	89	66
15	n/a	n/a	n/a	n/a	n/a	n/a
16***	65	70	60	76	89	74
17**	65	64	59	78	87	70
AVG	61	61	47	71	87	66

***Missing three months of data**

**** Missing two months of data**

*****Missing one month of data**

Table 2. Cotton cool test standard deviation values of six seed lots tested by fifteen laboratories during six different months (October 2006-April 2007) sorted by average standard deviation value.

Seed Lots							
Lab #	1	2	3	4	5	6	Avg Std Dev
2**	3.6	5.5	6.7	0.5	2.6	3.9	3.8
17**	3.3	5.7	9.3	1.5	5.4	6.5	5.3
3	3.9	2.1	14.5	6.0	3.3	3.0	5.5
9	5.6	3.5	10.1	4.1	2.7	9.0	5.8
14***	6.4	7.0	9.6	4.9	4.4	4.3	6.1
6***	4.3	6.0	18.7	3.5	2.0	2.4	6.2
10	4.9	7.0	12.1	5.7	3.8	6.1	6.6
16***	9.1	5.0	13.2	3.7	3.5	5.4	6.7
12***	6.3	8.1	6.9	2.7	1.8	14.2	6.7
5	9.8	12.0	12.8	4.9	2.1	2.9	7.4
4	7.4	7.4	11.6	6.9	5.1	11.0	8.2
1**	12.0	8.3	15.5	5.9	1.2	10.4	8.9
11	11.5	11.8	11.0	7.3	5.9	22.5	11.7
7*	11.8	6.3	17.0	6.4	16.3	14.1	12.0
8	26.1	26.7	23.0	14.0	18.6	21.8	21.7
13	n/a	n/a	n/a	n/a	n/a	n/a	n/a
15	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AVG	8.8	8.3	13.0	5.5	5.2	9.4	8.4

***Missing three months of data**

**** Missing two months of data**

*****Missing one month of data**

Table 3. Mean cotton warm germination test percentages of six seed lots tested during six different months (October 2006-April 2007) by fourteen laboratories.

Seed Lots						
	1	2	3	4	5	6
Lab #	-----%-----					
1**	87	89	88	88	92	94
2**	84	84	86	86	93	85
3	84	82	86	85	93	87
4	82	82	87	82	91	86
5	85	86	92	90	97	94
6***	85	86	92	88	94	93
7*	86	87	89	88	94	86
8	78	82	85	79	83	88
9	75	77	83	83	93	78
10	78	79	87	87	93	86
11	88	84	90	87	91	92
12***	85	84	91	83	92	87
13	n/a	n/a	n/a	n/a	n/a	n/a
14	n/a	n/a	n/a	n/a	n/a	n/a
15	n/a	n/a	n/a	n/a	n/a	n/a
16***	89	90	92	90	95	94
17**	89	88	93	89	91	94
AVG	83	84	88	86	92	88

***Missing three months of data**

**** Missing two months of data**

*****Missing one month of data**

Table 4. Cotton warm germination standard deviation values of six seed lots tested by fourteen laboratories during six different months (October 2006-April 2007) sorted by average standard deviation value.

Seed Lots							
Lab #	1	2	3	4	5	6	Avg Std Dev
2**	1.4	0.6	0.6	3.1	2.1	0.9	1.5
16***	2.1	2.2	0.9	3.3	2.1	0.7	1.9
6***	1.2	3.0	1.4	2.4	1.7	2.9	2.1
7*	2.1	3.0	2.0	2.2	2.8	1.4	2.2
17**	4.4	0.9	0.4	4.0	4.0	2.6	2.7
9	7.6	4.0	2.0	2.4	0.9	0.9	3.0
11	3.8	4.0	2.6	2.5	3.1	2.1	3.0
10	5.1	3.1	4.5	1.7	2.2	4.0	3.4
3	5.1	4.8	2.3	1.3	2.5	5.0	3.5
4	6.6	1.7	3.3	2.9	1.2	6.3	3.7
5	7.2	7.4	4.1	1.8	1.2	3.7	4.2
12***	5.1	6.1	1.3	5.2	3.7	4.7	4.4
8	3.2	4.6	6.0	3.8	6.7	4.7	4.9
1**	11.1	3.8	5.0	4.6	4.9	1.5	5.2
13	n/a	n/a	n/a	n/a	n/a	n/a	n/a
14	n/a	n/a	n/a	n/a	n/a	n/a	n/a
15	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AVG	4.7	3.7	2.8	2.9	2.7	3.0	3.3

***Missing three months of data**

**** Missing two months of data**

*****Missing one month of data**

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ISTA .2003. ISTA Working Sheets on Tetrazolium Testing Volume 1. Agricultural, Vegetable and Horticultural Species. *Gossypium* pages.

Peters, J. (Ed.). 1970. Tetrazolium Testing Handbook, Contribution No. 29. Association of Official Seed Analysts.

California Seed Testing Workshop

The California Department of Food and Agriculture (CDFA), Plant Pest Diagnostic Center hosted the California Seed Analysts and Seed Researchers Seed Testing Workshop, April 25–27, 2007.

Paul Peterson (CDFA) covered germination methods and seedling evaluation of vegetable crops in the Aizoaceae, Apiaceae, Liliaceae, and Chenopodiaceae. In addition to the slide presentation, participants received notebooks containing discussion of seed and seedling structures, comparison of germination methods, and seedling evaluation criteria. The notebooks contained more than 500 color photographs of seeds and seedlings at various stages of development.

A presentation by Riad Baalbaki (CDFA) focused on members of the grass family (Poaceae). He gave an excellent review on the domestication of cereals and grass plant structures (e.g., stems, leaves, roots, crowns, inflorescences, floral parts, seed coat, endosperm, and embryo). Water imbibition, internal and external factors affecting germination, germination testing methods, and details of seedling evaluation were the main focus of the presentation. A notebook and CD of the slide presentation were provided to each participant. Riad also presented information on the soon to be published AOSA Seed Moisture Testing Handbook. He discussed the basics of the moisture determination methods, sources of error in the test, and the advantages and disadvantages of the air-oven and microwave-oven methods.

Jane Kohn (Incotec) demonstrated the affect of different germination methods on seedlings grown from onion pellets containing trigard/progro/thiram seed treatments. Seedlings of onion pellets grown in rolled towels exhibited shorten roots; while seedlings of onion pellets grown under a thin covering of potting soil and vermiculite within the rolled towel had well developed roots.

Participants were surveyed on their interpretation of pure seed and inert matter definitions in the AOSA Rules. Following the exercise, Deborah Meyer (CDFA) presented information on how to properly classify items as either pure seed or inert matter. The survey responses were used as discussion points to identify problem areas in classification of pure seed and inert matter.

Deborah provided a brief overview of the noxious weeds seeds of California and the CDFA pest rating system. This was followed by a hands-on seed identification session. A seed identification manual containing color photographs of the seeds and fruits of 158 noxious weed species representing 37 plant families was given to each participant.

The group had a lively discussion of the 2007 AOSA Rules change proposals.

Submitted by Jim Effenberger

New SCST Members



Michael Aberle, RST

Hello, thank you for the warm reception into the SCST. My introduction to seed testing came when I started work at Ransom Seed Laboratory in the summer of 2001. My interest in botany, however, started as far back as high school when I began to take notice of the beauty and diversity of the plants in the Santa Barbara foothills. I studied Biology at the University of San Diego and went on to get a Master's degree in Plant Pathology at the University of California at Riverside in 2000.

In my years of work at Ransom I have had a focus on the testing of native species. It is enjoyable to work with these

same plants that piqued my interest in botany in the beginning. My hobbies include sailing and playing music on the guitar and lute.

Shannon Hofstadter, RST

I graduated from South Dakota State University with a bachelor's degree in Geography. I also had minors in Agronomy, Biology, and Chemistry. From there I continued my education at SDSU and graduated with a master's degree also in Geography. During grad school I worked for the USGS at the National Center for EROS making land cover maps. I started working at Mid-West Seed Services in September of 2004. In my spare time I like to try to be crafty but am rarely successful. I also enjoy reading and spending time with my husband and our two daughters.



Michael Nieman, CVT

I was raised in Iowa on a beef farm then worked for my father-in-law after being married in 1978. During the mid 80's farm crises I went to Iowa State University and received a BS degree in Agricultural Business Management with a minor in Agronomy. I worked my way through college at the ISU Seed Testing Laboratory as a planter and evaluator. I completed a one semester assistantship program in Soybean Breeding under Dr. Walt Fehr. After college, I worked in Foundation Seeds at The Committee for Agricultural Development. Since 2002, I have been employed at Mid-West Seed Service as a seed technologist and earned my CVT in 2007. My hobbies include motorcycling, hunting, fishing,

and gardening.

Erika Jones, RST

Hello SCST Members:

I am Erika Jones. I became an RST at the annual meeting in Cody, WY. I am originally from Hartford, SD. My seed testing experience began at Mid-West Seed Services during my senior year of college. In 2005, I graduated from South Dakota State University with a degree in biology. After graduation, I started full time as a seed technologist at MWSS.



I enjoy biking, reading, and being outdoors. I recently got engaged. My fiancé, Luke, and I are busy planning a wedding for next summer. I'm excited to be a new member and look forward to working with SCST.

2007 Anna Lute Award Winner: Barbara Ann Atkins



Presentation by Melissa Simpson.

Barbara Atkins is really a lot like Anna Lute—no nonsense, but willing to share information, is exuberant about seed testing, and cares deeply about her customers.

She has drawn on her rural Colorado upbringing and her academic training in Denver (B.S. degree) and at New York's Cornell (M.S. Degree). She worked at laboratories in Nebraska and Colorado (Applewood Seed Company) before running her own Laboratory in Denver (B.A. Atkins Seed Testing) in the 1980's. Since 1989, she has worked at STA Laboratories in Longmont, Colorado.

Her approach has always been balanced between seed analysis and seedsmen. She has always been well respected in the industry. People send seed to STA Labs because they want *her* to test it. When she owned her own seed testing business she once accepted samples on Christmas eve.

She attends all the functions in her state seed industry, all the regional events, and many national events. She once remarked, "Once I didn't attend an AOSA meeting and I was lost for three years." She has been on SCST board, and active on numerous committees. She made significant contributions to the TZ Handbook, Handbook 25 and multiple rule proposals over the years.

Barbara received her RST almost 30 years ago. She received a very high score—people wondered if she wrote the test. Barbara loves to share what she knows. She trained several RSTs. Her expectations of trainees are very high. She gives her RST trainees an encyclopedia of references to study. Though they discover later that just a fraction of the information would prove to be on the test, they come to appreciate Barbara's thoroughness as a mentor and teacher. She doesn't just help her RST trainees pass the test, she helps them excel as well-rounded analysts. The FRSA is proud to present the 2007 Anna Lute Award to Barbara Ann Atkins.

For more information about the Anna Lute Award and previous recipients, visit the FRSA website: www.frsa.org.

2007 SCST Meritorious Service Award Michael O'Neil, RST

The recipient of the SCST Meritorious service award was born in West Branch Iowa, and earned his degree at Central College in Pella, Iowa where he played football. He became an RST in 1980,



and in the last 27 years has served on the SCST Board of Directors, chaired the lab standardization and documentation committee, served as an SCST representative on the ISST board of examiners, presented information at multiple workshops including ISO standards, quality assurance and vigor testing. He currently lives with his wife outside Grange, Iowa where he enjoys wood working and playing with his three, soon to be four, grandchildren.

AOSA Merit Award Dr. Wayne Guerke

Dr. Guerke has served the Association for a long time at various capacities. He served as an associate editor and editor of Seed Technology Journal for over 15 years. He chaired various AOSA committees during his profession and serviced as vice president and president of the Association.

Dr. Guerke participated in many research projects that contributed to promoting uniform laboratory methods and developing uniform techniques. He has appreciable research publications in the field of seed technology. As a seed control official, Dr Guerke has effectively furthered the use of high quality seed through continued extension activities at state and national levels. He also contributed to fostering effective, workable seed control legislation and regulation. Dr. Guerke has contributed significantly to education in the field of seed technology through numerous presentations, consultation, publications, and as an editor of Seed Technology Journal.



Dr. Guerke has established a reputation as an efficient and progressive administrator in the area of seed technology and law enforcement. Also, he has made worthy contributions to the area of seed testing at the international level and has established a good communication channels with ISTA.

Dr. Guerke is a man of character, integrity, and outstanding achievement in the area of seed technology. If any person deserves recognition for serving the AOSA and for significant accomplishments in the area of seed testing and law enforcement, it will be without doubt Dr. Wayne Guerke.

BOOKSHELF

I was asked if there was a basic Botany text that would be a good match for new analysts without formal training. The text should be inexpensive, readily understandable and not include large volumes of information that a new analyst really does not need. The real problem is that there really is no Botany text that focuses on seeds or seed anatomy.

I think that Thomas J. Elpel's Herbal Field Guide to Plant Families, **Botany in a Day**, the Patterns Method of Plant Identification, 5th Edition, HOPS Press, 12 Quartz Street, Pony

Montana 59747-0697 225 pp. might fit this need. Further information and order information can be found at: www.hopspress.com or www.wildflowers-and-weeds.com. The list price of the large format paperback book is \$25.00 plus shipping. The book is well written to be easily understood by any lay person.

The value of this text is in how it takes you back to the basics. It is important for a beginning seed analyst, and advanced analysts encountering a new species, to think in terms of patterns. Members of the same family have traits in common. Members of the same genera within that family also have traits in common.

Eppel starts out by discussing the importance of learning plant by the scientific names. If you know the Family name then you can add genus and finally species. If you recognize the pattern of an unknown seed as being similar to another species you have taken a valuable shortcut toward identification. He explains the reason for the similarities as part of the process of evolution of plants.

Quite often my eyes start to glaze over when I read a text that is defining terms and relationships. Eppel cleverly inserts terms into a story that unfolds as you read the book. He does include a discussion of fruit form in the chapter on learning plants by families, but does not include a lot of seed morphology information. He uses line drawings to illustrate terminology.

Some people are intimidated by plant keys. Eppel includes a number of keys to identify families. There is a key to dicot trees and shrubs by their fruits that is of particular interest to seed analysts. Part II is a Reference Guide to herbal properties within various plant families. The recognition pattern for each family covered is described along with the medicinal or herbal properties of various genera. The wildflowers and weeds website contains pictures of more than 500 species discussed in the book.

Overall, this book is a very approachable means to introduce someone with a limited previous knowledge of plant form and function into the world of botany in a form that subtly educates one without pain.

As always, I encourage anyone that has a topic to cover to contact me, either at harold.r.armstrong@monsanto.com or by writing to: Harold Armstrong, Monsanto Seed Technology Center, 460 E. Adams, Waterman, IL 60556

Harold Armstrong,
Monsanto Seed Technology Center

ANNOUNCEMENTS

Consolidation Task Force Name Challenge

During the 2007 AOSA-SCST Annual Meeting in Cody, WY it was decided that an entirely new name should be developed for the proposed consolidated organization. The consolidation task force is soliciting suggestions for the name of the new organization. From these suggestions the final name or names will be selected for a final decision by the AOSA and SCST memberships.

General Guidelines:

- The words 'commercial' and 'official' should not be used.
- Regional reference should be avoided (ex. Mid West, North American, Northern Hemisphere).
- Please consider how the name will look when shortened to an acronym.

Please send your (serious) suggestions to Anita Hall, 607-256-3313, scst@twcny.rr.com or Jan Osburn, 405-780-7372, aosaoffice@sbcglobal.net by October 1st. **Please provide background or supporting data for your suggestions.**

Meeting Announcement

Translational Seed Biology: From Model Systems to Crop Improvement
University of California, Davis
September 17 - 20, 2007

The ability to modify seeds with specific developmental and compositional changes provides enormous potential to meet the growing global demand for food, but only if those discoveries can be adapted to the biological requirements of seeds as propagules and the pragmatic and economic demands of the marketplace. The objective of this symposium is to bring together leading public- and private-sector scientists across all aspects of seed biology in a format that emphasizes the connections between fundamental discoveries and their applications in agriculture, conservation, and ecology. An objective of the symposium is to identify high priority challenges and opportunities that can be targeted by complementary research in model, crop, and ecological systems. The focus on translational seed biology will demonstrate how public and private funding of fundamental work in model systems is being applied to benefit producers, consumers and the environment, particularly for applications in the regions of the world where the needs are greatest. We invite you to join a distinguished group of speakers and participants at this symposium.

Symposium website:

<http://www.plantsciences.ucdavis.edu/seedsymposium2007/index.htm>

Accredited Seed Grader Training and Testing

Workshop January 30, 2008, Exam January 31, 2008

USDA/AMS SRTB will present a training session for anyone interested in becoming accredited to assign grades to seed for export to Canada. The session will be held on Wednesday, January 30, 2008, from 8 am to 4:30 pm at Oregon State University, Corvallis, Oregon. On Thursday, January 31, 2008 individuals will have the opportunity to be tested for grader accreditation. Testing will begin at 8 am and continue no later than 4:30 pm. While anyone may participate, upon registration and payment of fees, in either the training or the testing sessions, only individuals who are RSTs or CSAs and who work for Accredited Seed Labs (ASL) or ISTA accredited labs may be accredited as graders. This training will be limited to the first twenty participants who register and pay fees. To obtain a brochure, register and pay associated registration costs please contact Karen Sussman (Karen.sussman@usda.gov).

Registration form is available on the AOSA website: <http://www.aosaseed.com/workshops.htm>

Genetic Super Workshop

February 4-8, 2008

The Genetic Technology Committee is organizing a Genetic Technology Superworkshop II to be held at the Iowa State University Seed Science Center. Each of the genetic working groups will hold a one day workshop that will include lecture and hands on activities. There will also be a full day session on genetics, molecular genetics, molecular biology, and plant breeding. These workshops are intended for those studying to take the Registered Genetic Technologist (RGT) exam, technicians currently working in genetic testing, or those just getting started.

Preliminary schedule:

Monday- Herbicide Bioassay

Tuesday- Molecular Genetics and Breeding

Wednesday- Immunoassay/ELISA

Thursday- Electrophoresis

Friday- PCR

Please check the SCST website for agenda updates and registration information.

The Idaho Seed Analyst Association Workshop

The ISAA is planning a seed testing workshop on AOSA, ISTA and Canadian methodology with emphasis on reporting.

The workshop will be hosted by BioDiagnostics West, LLC. The dates are May 19, 20, 21, 2008, to be held at the College of Southern Idaho in Twin Falls, Idaho. More information will be made available at a later date. For questions please contact:

Pat Brownfield
BioDiagnostics West, LLC
1775 Eldridge Ave.
Twin Falls, Idaho USA 83303
Phone: 208-732-0013
Email: pat.brownfield@BDWTesting.net

2008 Annual Meeting- St. Paul, MN



Thursday, June 5 – Thursday, June 12, 2008
Crowne Plaza St. Paul Riverfront Hotel
www.stpaulhotels.crowneplaza.com

Hosted by the Seed Analysts of the Midwest

Meeting Highlights:

Friday & Saturday - workshops (to be announced)
Sunday morning - Opening Session Brunch
Sunday night – Riverboat Dinner Cruise
Monday night – No dinner planned, your night to explore!!
Tuesday night – Banquet and Silent Auction

Meeting website coming soon!
For additional information: Rosie Nelson, 952-492-3402

Area attractions web sites:
Explore Minnesota: www.exploreminnesota.com/
St Paul: www.stpaulcvb.org/visitors_v2.cfm
Minneapolis: <http://www.minneapolis.org/thingstodo/>
Bloomington - Mall of America: <http://www.bloomingtonmn.org/>

Request for Recipes

Barbara Cleave is working on a recipe book for next years STRF silent auction. Please send your recipes for appetizers, breakfast dishes, salads, soups, sauces, home preserves, breads, main dishes, meats, or desserts to Barbara Cleave: barbara_cleave@alfseed.com by October 1, 2007.

Seedimages.com Subscription renewal and Seed Identification & Educational Programs



TO: Seed Technologists
FROM: Seed Technology Educational Programs (STEP)
Colorado State University
SUBJECT: Seedimages.com Subscription renewal and Seed Identification & Educational Programs

Now is the time to renew your subscription to the virtual seed herbarium SEEDIMAGES.COM. This database has been available to you for the past three years as a STEP promotional, paid for you by your association at a greatly reduced rate. We hope it has been a valuable tool for your lab for identification and educational purposes.

There are 5 different subscription options available. However, the most cost effective is the 24 month subscription for \$200.00 wherein subscribers are able to lock in their subscription rate and avoid the risk of a price increase after the first 12 months. Otherwise, the 12 month subscription rate is \$100.00. To renew your subscription or to initially subscribe, visit the Seedimages.com web page at www.seedimages.com and click on *Subscribe Now*.

The benefits of this database include over 1700 images of seeds; 100x magnification; user friendly search mechanism; identification by scientific and common names; identification by noxious, weed, and crop categories including seeds that are on the associations' professional examinations. These are just a few of its valuable features. Seedimages.com is the go to resource for seeds.

STEP at Colorado State University also provides many educational opportunities as part of the National Seed Science Distance Education Program in collaboration with Universities in Kentucky, Virginia, and Iowa. The program offers seven different distance education courses and a certificate program all focusing on seed science. At the present time, several courses are being pilot tested and will be available in the near future. These courses are Seed Conditioning; Seed Storage and Deterioration; and Large Seeded Legume Seed Production, Colorado State University; Seed Vigor Testing, University of Kentucky; Vegetable Seed Production, Virginia Polytechnic Institute and State University; and Seed Dormancy, Iowa State University. For more information and for updates regarding the progress of these courses at Colorado State University and the affiliated institutions, please visit <http://www.seedprograms.colostate.edu/index.html>.

The courses currently available for registration at Colorado State University are Seed Anatomy & Identification; Seed Development & Metabolism; Seed Purity & Analysis; and Seed Germination & Viability. For more information on these 4 courses and to register, visit the Continuing Education website at www.learn.colostate.edu/courses.

Our hope is that you will take advantage of these identification and educational opportunities as you STEP into the World of Seeds.

CALENDAR

2007

September

9-13 Seed Ecology II Conference. Perth, Australia. Information: www.seedtest.org

17-20 Translational Seed Biology: From Model Systems to Crop Improvement University of California, Davis. Information:
<http://www.plantsciences.ucdavis.edu/seedsymposium2007/index.htm>

October

8-12 ISTA Workshop on Moisture, Purity and Germination. Geves-Snes, Beaucouze, France. Information: www.seedtest.org.

10 FRSA Meeting. STA Labs, Longmont, CO. Information: www.frsa.org.

November

5-9 ISTA Preharvest sprouting symposium. Mendoza, Argentina. Information: www.seedtest.org.

10-13 Western Seed Association Annual Convention, Kansas City, MO, Westin Crown Center

11-12 ASTA's 53rd Farm & Lawn Seed Conference, Kansas City, MO, Westin Crown Center

11-13 Soy/Oilseed Summit. Chicago, IL. Information: www.seedtest.org.

19-21 International Seed Trade Conference. Cairo, Egypt. Information: www.seedtest.org.

December

4-7 ASTA Corn & Sorghum and Soybean Research Conference Seed Expo, Chicago, IL
Information: www.amseed.com

2008

January

22-25 ASTA Vegetable & Flower Seed Conference. New Orleans, LA. Information: www.amseed.com.

30-31 USDA/AMS SRTB Accredited Seed Grader Training and Testing. Oregon State University, Corvallis, Oregon. Information: <http://www.aosaseed.com/workshops.htm>

April

14-18 ISTA Seed Health Symposium. Kruger National Park, South Africa. Information: www.seedtest.org.

May

19-21 Idaho Seed Analysts Association Workshop. Information: Pat Brownfield, BioDiagnostics West, Twin Falls, ID, 208-732-0013, pat.brownfield@BDWTesting.net.

26-28 ISF Congress. Prague, Czech Republic. Information: www.seedtest.org.

June

6-11 AOSA/SCST Annual Meeting. St. Paul, MN. Information: <http://www.aosaseed.com/workshops.htm>

16-19 ISTA Annual Meeting. Bologna, Italy. Information: www.seedtest.org.

21-25 ASTA Annual Convention. Kissimmee, FL. Information: www.amseed.com.

23-25 CSAAC Annual Meeting. London, Ontario. Information: www.seedanalysts.com.

24-27 GMO Conference. Como, Italy. Information: www.seedtest.org.