



Seed Regulatory and Testing Branch

# ITEMS OF INTEREST IN SEED

October 2009

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## EDITOR'S NOTES

*“After you’ve done a thing the same way for two years, look it over carefully. After five years, look at it with suspicion. And after ten years, throw it away and start all over.”*

- Alfred Edward Perlman, *New York Times*, 3 July 1958  
(Former President, New York Central Railroad)

Although there are many great thoughts relating to the change, this particular one emphasizes the importance of reevaluation. Where do you see your organization? If you are at the two-year mark, are you looking over your services *carefully* to ensure that you are providing the customer the best possible service? If you are at the five-year mark, are you looking at your services with *suspicion*? For many of us, business may have become routine, thus we find ourselves in the *throw it away and start all over* category. No matter which category we place ourselves in, change is never easy but often it is necessary.

A few years ago, in an effort to meet the demands of an ever-widening audience, the “Items of Interest in Seed’s” (IOI) editorial team began focusing attention on ways to expand this publication. The most significant changes occurred when we increased the number of scientific articles and added digital images. With this issue, we continue improving the IOI by introducing a new cover, designed to represent the purpose and spirit of our publication. Future IOI publications will include articles based on the technical aspects of seed testing. These visual aids should be helpful with seed identification skills.

Each time we take a moment to reevaluate our services, it benefits a customer. Every time we make an effort to attend a meeting to exchange ideas with State seed control officials, seed organizations, and seed company representatives, it benefits us all.

This issue highlights several important meetings and workshops that Seed Regulatory and Testing Branch (SRTB) staff members have participated in recently, including the 126<sup>th</sup> Annual Convention of the American Seed Trade Association (ASTA), the 91<sup>st</sup> Annual Meeting of the Association of Official Seed Certifying Agencies (AOSCA), and the 23<sup>rd</sup> Annual Meeting of the Association of American Seed Control Officials (AASCO). Other features include Botanist Sandy Dawson’s article on verification of blower air velocity, Botanist Todd Erickson’s second article in a series on seed unit definitions, and Seed Marketing Specialist Jerry Irwin’s Seed Segments interview with SRTB Assistant Branch Chief and Laboratory Supervisor Susan Maxon. Ms. Maxon began her career with USDA in 1975 as a lab technician and became the SRTB Laboratory Supervisor in 2003. I hope you will take time to read this special interview.

Finally, your feedback concerning our IOI provides SRTB an excellent way to measure whether or not we are addressing the topics that interest you the most. Please send your comments and suggestions to me at [linda.vanderhoof@ams.usda.gov](mailto:linda.vanderhoof@ams.usda.gov).

On behalf of the SRTB staff, I hope you enjoy these articles and continue to find them informative.

Linda Vanderhoof  
IOI Editor

## **AGRICULTURAL SECRETARY VILSACK NAMES RAYNE PEGG AS ADMINISTRATOR OF THE AGRICULTURAL MARKETING SERVICE**

Agriculture Secretary Tom Vilsack announced the appointment of Rayne Pegg as Administrator of the U.S. Department of Agriculture's Agricultural Marketing Service. The agency is part of USDA's Marketing and Regulatory Programs mission area which works to ensure a productive and competitive global and domestic marketplace for U.S. agricultural products. Pegg began serving in this role in early July.

"Rayne Pegg brings years of experience to USDA from her work on agricultural issues both as a distinguished public servant and in the non-profit community," said Secretary Vilsack. "Rayne's background makes her the ideal person to further the development of programs to ensure efficient, fair marketing of U.S. agricultural products as we work to meet the needs of consumers and industries and provide a safe, sustainable food supply for all Americans."

Pegg most recently served as the Deputy Secretary of Legislation and Policy for the California Department of Food and Agriculture. In this role, she was the principal advisor to both the Secretary of the Department and the cabinet of the Governor of California on the Department's legislative and policy issues. Pegg represented the Department before the California legislature, regulating bodies and interested parties on issues potentially impacting the Department's programs. She has worked with growers and the public to find common ground and reach agreement on controversial issues. She also worked on legislation and public policy that address invasive species, the Farm Bill, the Department's budget, organic production, food safety, farmers markets, government oversight, and trade barriers.

As an advocate with the California Farm Bureau Federation, Pegg analyzed California agriculture's foreign market opportunities and competition and participated in the World Trade Organization and US-Korea Free Trade Agreement negotiations. She has worked with USDA to resolve phytosanitary barriers that restrict the movement of California products to foreign and domestic markets. In addition, Pegg was previously appointed to the USDA, Agricultural Trade Advisory Committee on Fruits and Vegetables. Pegg was also a principal in the creation of the California Leafy Green Product Handler Marketing Agreement, which was established in response to the spinach *E. coli* outbreak in 2006.

Pegg earned her BA in Psychology from the College of Notre Dame of Maryland. On a personal level, she is a mentor for Wonder Inc., a support network for foster children.

For information regarding this article, please contact USDA, Office of Communications at (202) 720-4623; <http://www.usda.gov>.

### **FEDERAL SEED ACT CASES SETTLED**

The following cases were settled administratively under the Federal Seed Act between March 10 and September 11, 2009. Under the administrative settlement procedure, the Seed Regulatory and Testing Branch and the firms agreed to settle the cases, for the amount specified, with the firms neither admitting nor denying the charges. Official Program Announcements on each of these cases are accessible on the following Web site under the "Latest Releases" link: <http://www.ams.usda.gov/news/newsrel.htm>.

Allied Seed, LLC, Nampa, ID, has paid \$3,575 for cases involving three seed shipments into Kentucky and Missouri. Seed regulatory officials in Kentucky and Missouri cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of pure seed, inert matter, and weed seed percentages, test date; and
- failure to label the presence of noxious-weed seeds.

Barenbrug USA, Tangent, OR, has paid \$7,475 for cases involving four seed shipments into Louisiana, Missouri, and Texas. The shipments into Louisiana and Missouri were subsequently shipped into Indiana and Pennsylvania, respectively, where they were officially sampled. Seed regulatory officials in Indiana, Pennsylvania, and Texas cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of pure seed, other crop seed, weed seed, and germination percentages, test date, and kind and variety name;
- failure to label the presence of noxious-weed seeds;
- failure to test for germination prior to interstate shipment; and
- failure to keep or supply required records.

Barenbrug USA, Tangent, OR, has paid \$7,150 for cases involving seven seed shipments into Illinois, Kansas, Missouri, New York, Texas, and Virginia. The shipments into Illinois were subsequently shipped into Indiana, Pennsylvania, and Texas. The shipment into Kansas was subsequently shipped into Missouri. The shipment into New York was subsequently shipped into Pennsylvania. Seed regulatory officials in Indiana, Missouri, Pennsylvania, and Texas cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of pure seed and other crop seed percentages, date of test, and noxious-weed seeds rate of occurrence;
- failure to label as a mixture;
- failure to list components of a mixture in order of predominance; and
- failure to keep or supply complete records of the seed.

Oregro Seeds, Inc., Albany, OR, has paid \$2,700 for cases involving five seed shipments into Georgia and Texas. Seed regulatory officials in Georgia and Texas cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of pure seed, weed seed, and other crop seed percentages, date of test, and noxious-weed seeds rates of occurrence;
- shipping seed containing prohibited noxious-weed seeds; and
- failure to label the presence of noxious-weed seeds.

Pennington Seed, Inc., Madison, GA, has paid \$11,375 for cases involving 12 seed shipments into Georgia, Kentucky, Maryland, Missouri, Ohio, Texas, and Wisconsin. Portions of the shipments into Maryland, Missouri, and Ohio were subsequently shipped into New York, Minnesota, and Indiana, respectively, where they were officially sampled. The shipment into

Wisconsin was subsequently shipped into Minnesota where it was officially sampled. Seed regulatory officials in Georgia, Indiana, Kentucky, Minnesota, New York, and Texas cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of pure seed, inert matter, weed seed, and germination percentages, kind name, test date; and
- failure to keep required records.

Western Hybrid Seeds, Inc., Hamilton City, CA, has paid \$1,225 for cases involving three seed shipments into Oregon and Pennsylvania. All shipments were subsequently shipped into North Carolina where they were officially tested. The alleged violations were:

- false labeling of variety names and
- failure to keep required records including those establishing the seed variety name.

## **FALL TRUENESS-TO-VARIETY OVERVIEW**

Each year the Seed Regulatory and Testing Branch (SRTB) conducts trueness-to-variety (TTV) field tests to determine if seed lots are properly labeled for variety name, as required by the Federal Seed Act (FSA) and State seed laws. Field testing is conducted by crop experts at State universities and State departments of agriculture in cooperation with SRTB. SRTB relies on State seed control programs to submit samples for inclusion in the TTV tests.

Since October 2008, about 750 TTV samples have been planted: sweet corn at Southern University and A&M College, Baton Rouge, LA; alfalfa and clovers at North Carolina State University Sandhills Research Station, Jackson Springs, NC; tomatoes, peppers, and eggplants at North Carolina State University Piedmont Research Station, Salisbury, NC; grain sorghum and sorghum-sudangrass at Texas Department of Agriculture, Giddings, TX; and radishes, collards, garden beans, and turnips in the SRTB greenhouse.

The SRTB would like to thank the seed control programs in Alabama, Arizona, Arkansas, California, Connecticut, Florida, Georgia, Idaho, Illinois, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Montana, Nebraska, New Mexico, New York, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, West Virginia, and Wisconsin for participating in the TTV program. Information about potentially mislabeled seed is still being gathered and evaluated. After TTV results and information have been compiled, participating States will be notified of any mislabeled samples.

This fall, SRTB is conducting a TTV test with annual and perennial ryegrass at the Sandhills Research Station, Jackson Springs, NC. The varietal labeling of these samples will be evaluated next spring and early summer. We encourage all State seed control programs to submit annual or perennial ryegrass seed samples for TTV testing.

Photo by Dr. Mike Lovelace, USDA, AMS, 2009



SRTB and North Carolina State University Sandhills Research Station employees transplant alfalfa seedlings for a TTV trial conducted last year.

If there are any questions concerning the TTV program or directions for submitting samples, please contact Agronomist Mike Lovelace at (704) 810-7261; [michael.lovelace@ams.usda.gov](mailto:michael.lovelace@ams.usda.gov).

## QUESTIONS AND ANSWERS

- Q. Does a variety for which the Title V option was chosen have to be sold as a class of certified seed after Plant Variety Protection (PVP) expires?
- A. It is the opinion of the U.S. Department of Agriculture's Office of General Counsel that when a PVP certificate expires (1) sale of that variety is no longer restricted and (2) the date of harvest is immaterial for Federal Seed Act (FSA) enforcement. All requirements, rights, and privileges under Title V of the FSA afforded to the owner of that certificate also become null and void. This allows seed of a variety with an expired PVP certificate to be sold by variety name without being a class of certified seed. After the certificate expires, there are no restrictions on production, storage, or sale of the variety.
- Q. Can a company's Web site address be used in lieu of a company's full name and address on a label?
- A. According to sections 201.23 and 201.27 of the Federal Seed Act (FSA) Regulations, the full name and address of either the shipper or consignee shall appear upon the label. If the name and address of the shipper are not shown upon the label, a code designation identifying the shipper shall be shown. The address should include the city and state location. The code designation refers to the "AMS number," which can be obtained from the Seed Regulatory and Testing Branch. An interstate shipper has two options for fulfilling this

requirement. The company shipping seed in interstate commerce must put either its own name and address on the label or the name and address of the consignee, along with the shipping company's own AMS number identifying it as the interstate shipper. Since the company's Web address is not likely to include all the required information described here, the Web address would not be sufficient to meet the FSA requirement for the full name and address or AMS number. The Web address may be included on the label as additional information.

For information regarding these questions and answers, please contact Seed Marketing Specialist Kevin Robinson at (704) 810-7264; [kevin.robinson2@ams.usda.gov](mailto:kevin.robinson2@ams.usda.gov).

## **REVISED PUBLICATIONS CONCERNING TREATED SEED LABELING REQUIREMENTS AND SEED COMPANY RECORDS UNDER THE FEDERAL SEED ACT**

The Seed Regulatory and Testing Branch (SRTB) revised its publications, "Labeling Requirements for Chemically Treated Seeds" and "Seed Company Records and the Federal Seed Act." These publications were updated to ensure that the information is current and to improve readability. The new versions are posted on the SRTB Web site under "Publications."

To receive an e-mail notification when SRTB posts new or revised publications, go to <http://www.ams.usda.gov/seed>, click on "Subscribe to Publications" and follow the instructions.

For information regarding this article, please contact Seed Marketing Specialists Roger Burton or Jerry Irwin at [roger.burton@ams.usda.gov](mailto:roger.burton@ams.usda.gov) or [jerry.irwin@ams.usda.gov](mailto:jerry.irwin@ams.usda.gov).

## **AN IMPORTANT NOTE TO OUR STATE SEED CONTROL OFFICIALS**

Please contact the Seed Regulatory and Testing Branch (SRTB) when your office or laboratory has changes regarding the following information:

- Seed Control Officials, regulatory and laboratory contacts
- Commissioners, Directors, and/or Secretaries
- Titles
- Department names (division, section, bureau, etc.)
- Addresses (physical or mailing)
- Telephone numbers (voice and fax)
- E-mail addresses
- Web sites

SRTB wants to make sure laboratory reports, copies of regulatory correspondence, training notices, program announcements, and requests for information reach the correct person as soon as possible. Sometimes SRTB needs to refer a customer to a State office, and directing them to the appropriate contact person can be a helpful service. SRTB takes pride in knowing their contacts, and feels that details like correctly spelled names and current titles are important.

For further information or to submit updates, please contact Seed Marketing Specialist Jerry Irwin at (704) 810-8878; [jerry.irwin@ams.usda.gov](mailto:jerry.irwin@ams.usda.gov).



## **FEDERAL SEED LAB PROVIDES NEW LABORATORY SERVICES**

Seed Regulatory and Testing Branch (SRTB) Botanists Todd Erickson and Patsy Jackson are approved to assign Canadian Seed Grades to U.S. seed destined for Canada. This service will allow seed to go directly to customers in Canada without retesting or grading. Mr. Erickson and Ms. Jackson are approved to grade seed for the following 6 categories: Group 1 - Grade Tables I-VI, Group 2 - Grade Table VII, Group 3 - Grade Tables VIII-X, Group 4 - Grade Tables XI-XII, Group 5 - Grade Tables XIII-XV, Group 6 - Grade Tables XVI-XX. For the kinds listed in each group, go to page 12 of the "Instructions for Assignment of a Canada Pedigreed Grade Name to Seed for Marketing in Canada" ([Kinds Listed in the Grade Tables](#)).

USDA Process Verified certificates may now be issued on seed being tested by SRTB under the Accredited Seed Laboratory (ASL) Program. For examples of this certificate see page 5 of the "USA Accredited Seed Laboratory (ASL) Program, Specified Program Requirements – Appendix A" ([Process Verified Certificate](#)). If this certificate would aid your company in international movement of seed, please contact Perry Bohn.

For more information about this article contact Botanist Todd Erickson at 704-810-7266; [todd.erickson@ams.usda.gov](mailto:todd.erickson@ams.usda.gov), Botanist Patsy Jackson at 704-810-8881; [patsy.jackson@ams.usda.gov](mailto:patsy.jackson@ams.usda.gov), or U.S. OECD Program Manager Perry Bohn at 704-810-7262; [perry.bohn@ams.usda.gov](mailto:perry.bohn@ams.usda.gov).

## **FEDERAL SEED ANALYSIS CERTIFICATES WILL SOON HAVE A NEW LOOK**

The Seed Regulatory and Testing Branch (Federal Seed Lab) will begin using a new software program in October 2009. Federal Seed Analysis Certificates will contain the same information, but will have slight formatting changes and a slightly different appearance. The certificates will still be printed on eagle-watermarked bond paper.

For further information, please contact Carolyn Camidge at (704) 810-7263; [carolyn.camidge@ams.usda.gov](mailto:carolyn.camidge@ams.usda.gov) or Susan Haney at (704) 810-8870; [susan.haney@ams.usda.gov](mailto:susan.haney@ams.usda.gov).

## **AN IMPORTANT NOTE TO OUR SEED COMPANY CUSTOMERS**

Please contact the Seed Regulatory and Testing Branch when your company has changes regarding the following information:

- Addresses (physical, mailing, or billing)
- Telephone numbers (voice and fax)
- Company contacts
- Updated DBA (doing business as) information
- Any other changes to your existing account, such as mailing or courier instructions for Seed Analysis Certificates, etc.

For further information or to submit updates, please contact Carolyn Camidge at (704) 810-7263; [carolyn.camidge@ams.usda.gov](mailto:carolyn.camidge@ams.usda.gov).

## NOMENCLATURE CHANGE FOR TOMATO

The Germplasm Resources Information Network (GRIN) now recognizes *Solanum lycopersicum* as the scientific name of tomato with the previous name, *Lycopersicon esculentum*, retained as a synonym. The International Seed Testing Association (ISTA) "International Rules for Seed Testing" and the Association of Official Seed Analysts (AOSA) "Rules for Testing Seeds" continue to recognize the name *Lycopersicon esculentum*. The "ISTA List of Stabilized Plant Names," 5<sup>th</sup> Edition accepts *Lycopersicon esculentum*, with *Lycopersicon lycopersicum* and *Solanum lycopersicum* as synonyms.

Current Federal Seed Act Regulations Section 201.2(i) lists the scientific name for tomato as *Lycopersicon esculentum*.

Visit the following Web sites for information: AOSA ([www.aosaseed.com](http://www.aosaseed.com)), Federal Seed Act Regulations ([www.ams.usda.gov/seed](http://www.ams.usda.gov/seed)), GRIN ([www.ars-grin.gov](http://www.ars-grin.gov)), and ISTA ([www.seedtest.org](http://www.seedtest.org)).

For information regarding this article contact Botanist Sandy Dawson at (704) 810-7270; [sandy.dawson@ams.usda.gov](mailto:sandy.dawson@ams.usda.gov).

## VERIFICATION OF BLOWER AIR VELOCITY

The Association of Official Seed Analysts (AOSA) changed the uniform blowing procedure for orchardgrass and Kentucky bluegrass in October 2007. This procedure requires an anemometer to determine the equivalent air velocity (EAV) of a General-type blower at the optimal blowing point for a species, as determined by calibration with a master calibration sample. Each time a sample requires the uniform blowing procedure, an analyst only needs to verify that the blower is operating at the EAV for that species, to insure that it is still in calibration. This confirmation is necessary because variations in environmental conditions may affect the velocity so that a different gate setting is required to produce the EAV. A brief description of the verification process follows.

- Set the gate to the expected value based on the previous calibration with a master calibration sample of the species being tested.
- Turn on the blower and measure the air velocity in m/sec using the anemometer as described in AOSA Handbook 24, "The Uniform Blowing Procedure."
- If the anemometer reading does not match the established EAV, adjust the gate setting and recheck the velocity. Repeat until a gate setting produces the EAV.
- Proceed with the uniform blowing procedure using the gate setting determined above.

The anemometer procedure saves time by requiring re-calibration only after the blower undergoes a change such as maintenance or repair, or when the accuracy of separations is questionable. Consistency of results between laboratories depends on blower condition, uniformity of the master calibration samples, accurate determination of the EAV, and verification of the EAV prior to using the blower.

Analysts in the Federal Seed Laboratory use this procedure for verification of air velocity when testing by Federal Seed Act (FSA) Regulations as well as when testing by AOSA Rules, since there is nothing in the FSA Regulations that is incompatible with the procedure.

For additional information, see the article, "New Loan Procedure for the Association of Official Seed Analysts Master Calibration Samples," in the October 2007 issue of "Items of Interest in Seed," or visit the AOSA Web site (<http://www.aosaseed.com>) and click on "Resources."

For information regarding this article contact Botanist Sandy Dawson, (704) 810-7270; [sandy.dawson@ams.usda.gov](mailto:sandy.dawson@ams.usda.gov).

## **THE SEED UNIT CONTINUED: BAHIAGRASS SPIKELETS**

A previous article on seed units highlighted the differences between Federal Seed Act (FSA) Regulations, Association of Official Seed Analysts (AOSA) "Rules for Testing Seeds," and International Seed Testing Association (ISTA) "International Rules for Seed Testing" for ryegrass and tall fescue seed unit definitions (see "Understanding the Seed Unit: Ryegrass and Tall Fescue" in the April 2009 issue of "Items of Interest in Seed"). An examination of bahiagrass (*Paspalum notatum*) seed unit definitions will demonstrate some morphological structures and differences between the three sets of rules not previously encountered with tall fescue or ryegrass.

FSA Regulation 201.47a(b)(3) and ISTA Pure Seed Unit (PSU) definition #36 both categorize the bahiagrass seed unit as an entire spikelet. A grass spikelet consists of one to many florets and a basal pair of glumes (fig. 1). If a bahiagrass spikelet has attached structures below the glumes, such as the pedicel or rachis, the analyst would remove these and classify them as inert matter, according to FSA Regulations and ISTA Rules. AOSA Rules define the pure seed unit for all varieties of bahiagrass other than Pensacola in the same way as FSA Regulations and ISTA Rules: the spikelet (PSU #14).

The FSA Regulations and the AOSA Rules treat Pensacola bahiagrass differently than the other varieties of bahiagrass. Pensacola bahiagrass is subject to the uniform blowing procedure under the FSA Regulations and the AOSA Rules. Also, the AOSA Rules assign Pensacola bahiagrass a different PSU number (23). Under PSU #23, the pedicel is part of the seed unit and remains attached to the spikelet. The pedicel is the stalk that attaches the spikelet to the main stem of the plant (fig. 2).

The morphology of bahiagrass is interesting in that the sterile floret and glumes press tightly against the fertile floret. Thus, what might at first appear to be a single bahiagrass floret is actually the entire spikelet. This is important to remember when determining the seed unit. The analyst may occasionally find multiple bahiagrass units all attached to a central rachis (fig. 3). While this structure may appear to be a single spikelet, it actually consists of a number of individual spikelets, with each spikelet considered a separate seed unit.

When conducting a bahiagrass purity separation, the analyst should be aware of the variety, the anatomy of a bahiagrass spikelet, and the appropriate rules under which the seed sample is being tested.

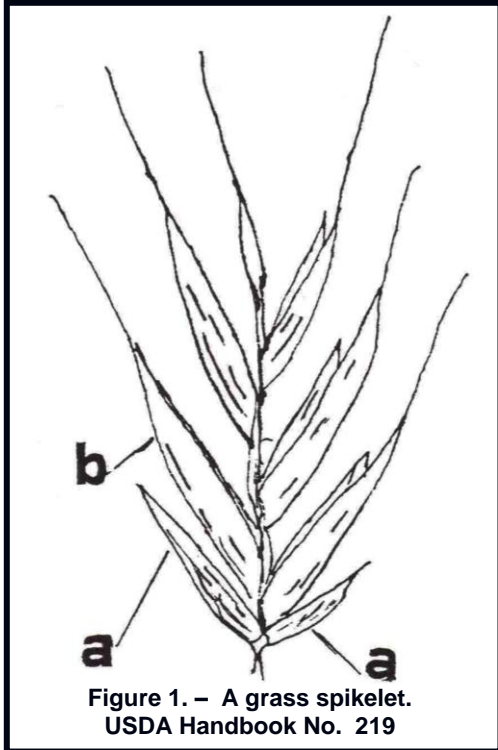


FIGURE 1.—Grass spikelet: a=glumes, b=floret

Photo by Todd Erickson, USDA, AMS, 2009



FIGURE 2.—Bahiagrass spikelet with attached pedicel.

Photo by Todd Erickson, USDA, AMS, 2009



FIGURE 3.—Multiple bahiagrass spikelets attached to central rachis.

For more information on this article, please contact Botanist Todd Erickson at (704) 810-7266; [todd.erickson@ams.usda.gov](mailto:todd.erickson@ams.usda.gov).

### **VERIFICATION OF SUNFLOWER VARIETIES USING A COMBINATION OF ESTERASE AND COOMASSIE STAINS**

Sunflower seeds, which contain high levels of vitamin E and vitamin B<sub>1</sub>, are a common food for both humans and animals. Sunflower is an economically important crop in the United States, with a production of 3.42 billion pounds in 2008 (from the National Sunflower Association's 2008 U.S. Sunflower Crop Quality Report). An accurate variety test can help avoid large economic losses by identifying contaminated or mislabeled seed lots.

Generally, seed variety identification is based on distinguishing morphological characteristics or molecular level differences. To improve upon these existing methods, Seed Regulatory and Testing Branch (SRTB) Plant Physiologist Yujia Wu has developed a new method using iso-electric focusing (IEF) protein separation technology.

Ten pure seed samples were collected following purity testing by International Seed Testing Association (ISTA) rules. The samples were divided into three distinct groups as follows: samples 1-5 are small, black in color, and labeled as 'Armada'; samples 6-7 are large, brown in color, and labeled as 'Royal CL'; and samples 8-10 are medium in size, dark brown in color, and labeled as 'Marker' (fig. 4). An IEF protein gel was used for the protein separation. The samples were prepared by removing and discarding the seed hulls, grinding the seeds in extraction buffer (75 mM Tris pH 7.5 and 0.1%  $\beta$ -mercaptoethanol), and then centrifuging at 10,000 rpms for 10 minutes at 4°C. Supernatants were loaded onto a pH 5-8 IEF gel and run at 100 V for 60 minutes; 250 V for 60 minutes, and 500 V for 30 minutes. After running, the gel

was immediately stained for 30 minutes in a solution to detect esterase isozymes. The gel was then transferred to a Coomassie blue solution, for as long as needed, to stain additional proteins.

Preliminary results (fig. 5) indicate that protein bands stained with both esterase (dark-colored bands at the bottom of the gel) and Coomassie blue (blue color) reveal different banding patterns in different varieties. Variation in banding patterns of samples of the same variety were detected and may be influenced by factors such as seed age, storage conditions, and the growth conditions of the parent plant. Protein bands stained with either esterase or Coomassie alone are not strong enough to use as an identification tool for the tested varieties. A combination of esterase and Coomassie staining reveals banding patterns that are suitable to confidently distinguish among these varieties of sunflower seed.

Photo by Yujia Wu, USDA, AMS, 2009

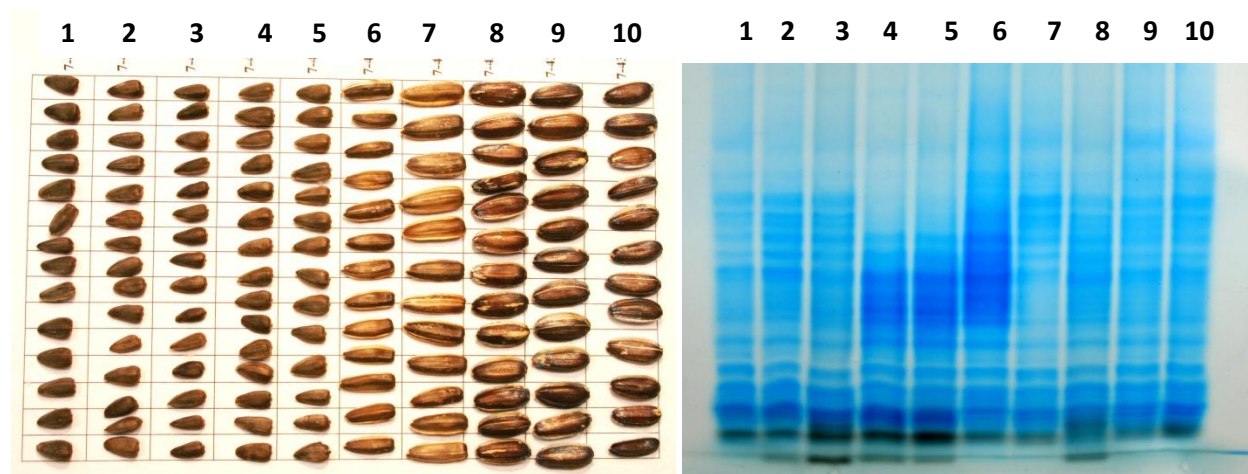


FIGURE 4.—Sunflower seed test samples

FIGURE 5.—Sunflower seed IEF gel

For information regarding this article contact Plant Physiologist Dr. Yujia Wu at (704) 810-7267; [yujia.wu@ams.usda.gov](mailto:yujia.wu@ams.usda.gov).

### SEED ANALYSTS MEETING IN FORT COLLINS, CO

The 2009 joint annual meeting of the Association of Official Seed Analysts (AOSA) and Society of Commercial Seed Technologists (SCST) was held June 2-5, 2009, in Fort Collins, CO. Seed Regulatory and Testing Branch (SRTB) staff attended this meeting as a member laboratory.

Fourteen proposed rule changes were submitted to improve clarity and add supplemental information to the current AOSA rules. Authors of the uniform blowing point proposal for tall fescue withdrew their rule proposal prior to the meeting. Seven proposals were amended prior to voting and twelve were adopted. AOSA rule changes go into effect October 1, 2009. More details on these changes are available at <http://www.aosaseed.com>.

A rule change was adopted to allow the tetrazolium test (TZ) to be stated on the report of analysis as the only measure of viability. This change conflicts with sections 201.6 and 201.20 of the Federal Seed Act (FSA) Regulations that require germination records be maintained and germination percentages be labeled for seed shipped in interstate commerce. (See "Labeling Agricultural Seeds" section 201.20 "Germination;" "Records for Agricultural and Vegetable

Seeds" section 201.6 "Germination;" "Germination Tests in the Administration of the Federal Seed Act" section 201.57a "Dormant seeds;" and the article, "TZ Testing Under the Federal Seed Act" in the October 2006 edition of the "Items of Interest in Seed.")

AOSA/SCST adopted two tentative rule proposals to modify the current purity analysis method for coated seed and to adjust the time elapsed between de-coating seed during the purity analysis and planting the seed for the germination test. AOSA/SCST initiated these changes in response to issues related to coated and encrusted seed currently in the marketplace.

The AOSA/SCST Consolidation Task Force recommended sending a ballot to all voting members to decide whether to merge these organizations. During the SCST business meeting, a motion passed to postpone mailing the merger ballot pending legal consultation. AOSA and SCST continued to work toward combining the examinations that applicants must pass to become a Certified Seed Analyst (AOSA) or a Registered Seed Technologist (SCST). The AOSA and SCST examination subcommittees met, both separately and jointly, to discuss the strengths of both exams.

SRTB Botanist Patsy Jackson participated in the Statistics Workshop and the AOSA Rules Committee meetings. She displayed a poster in the Seed Issues Forum on seed characteristics of *Solanum*, *Physalis*, *Datura* and *Quincola*. Ms. Jackson is a member of the AOSA Purity, Certification, and Cultivar Purity Committees. SRTB Agronomist Michael Lovelace participated in the Statistics Workshop and chaired the AOSA Cultivar Purity Committee meeting. SRTB Plant Pathologist Sandra Walker, who chairs the Seed Pathology Sub-committee, attended two workshops sponsored by this committee. Nick and Kim Hill of Agrinostics conducted a workshop on endophyte testing. Participants learned the science underlying the test along with techniques to prevent smears and other possible test evaluation problems. Eurofins STA Laboratories in Longmont, CO hosted a workshop about their pathology and trait testing methods. Lisa Shepherd presented information about the National Seed Health System and Ms. Walker explained the Accredited Seed Laboratory Program. Ms. Walker also participated in the SCST International Committee meeting where she took part in discussions concerning the creation of a Registered Seed Health Technologist position.

The next AOSA/SCST annual meeting is June 4-11, 2010, in St. Louis, MO.

For information regarding this article contact Botanist Patsy Jackson at (704) 810-8881, [patsy.jackson@ams.usda.gov](mailto:patsy.jackson@ams.usda.gov); Agronomist Mike Lovelace at (704) 810-7261, [michael.lovelace@ams.usda.gov](mailto:michael.lovelace@ams.usda.gov); or Plant Pathologist Sandra Walker at (704) 810-7268, [sandra.walker@ams.usda.gov](mailto:sandra.walker@ams.usda.gov).

## 2009 OECD SEED SCHEMES MEETING HIGHLIGHTS

The Organization for Economic Cooperation and Development (OECD) Seed Schemes met June 9-12, 2009 in Paris, France. U.S. OECD Seed Schemes Program Manager Perry Bohn and Deputy Administrator of the Livestock and Seed Program Dr. Craig Morris attended the meetings. Representatives from the American Seed Trade Association (ASTA) and the Association of Official Seed Analysts (AOSA) also attended.

Some key accomplishments include the following:

- Adopted the decision paper “Use of Variety Synonyms in International Trade”
- Changed the name and focus of the Working Group on Varietal Identity and Varietal Purity to the Technical Working Group (TWG) and determined that it will remain in place for another three years with open membership
- Approved the inclusion of two new species, *Eragrostis tef* (teff grass) and *Paspalum vaginatum* (seashore paspalum), as recommended by the United States
- Tentatively approved the Ukraine to participate in the OECD Seed Schemes
- Approved the OECD Seed Schemes Strategic Plan
- Began the process of consolidating the OECD Seed Schemes Rules, or “Yellow Book,” which will eliminate redundant information and reduce the size of the rules (expected completion date is April 2010)
- Formed a working group to study the Vegetable Seed Scheme and propose actions to improve its relevance

The next Extended Advisory meeting is scheduled for November 4-6, 2009 in Paris, France, and the Annual Meeting is scheduled for March 22-26, 2010 in Christchurch, New Zealand.

For more details regarding this year’s meeting or for more information regarding this article, contact [U.S. OECD Seed Schemes](mailto:perry.bohn@ams.usda.gov) Program Manager Perry Bohn at (704) 810-7262; [perry.bohn@ams.usda.gov](mailto:perry.bohn@ams.usda.gov).

## BOHN ELECTED VICE CHAIR OF INTERNATIONAL SEED ORGANIZATION

Perry Bohn of the Seed Regulatory and Testing Branch was recently elected Vice Chairman of the 57-nation Organization for Economic Cooperation and Development (OECD) Seed Schemes Bureau and will become the Chairman two years from now. Perry serves as the Program Manager of the U.S. OECD Seed Schemes.

The OECD Seed Schemes facilitates the international movement of seed through the adoption of uniform standards and common definitions among participating trading nations. The harmonization of procedures for the varietal certification of seed helps ensure seed quality and reduces technical barriers to trade and transaction costs. Last year, 197 million pounds of seed, representing about 200 different species, were certified and traded under this system. The OECD Seed Schemes also serves as a prerequisite for shipping seed into the European Community and is of major importance to the U.S. agricultural seed sector.



Photo by Dr. Mike Lovelace, USDA, AMS, 2009



Perry Bohn

For information regarding this article, contact Seed Marketing Specialist Gene Wilson at (704) 810-8888 or [gene.wilson@ams.usda.gov](mailto:gene.wilson@ams.usda.gov).

## **MEETING OF THE INTERNATIONAL SEED TESTING ASSOCIATION**

Seed Regulatory and Testing Branch Assistant Chief/Laboratory Supervisor Susan Maxon participated in the annual meeting of the International Seed Testing Association (ISTA), June 14-18, 2009, Zurich, Switzerland. Of the 73 ISTA member countries, 42 were represented by Designated Members entitled to vote at the Ordinary Meeting, exceeding the required quorum of 29. Susan Maxon also participated in the ISTA Executive Committee meetings on June 13 and 19. She is currently serving a three-year term on the ISTA Executive Committee.

Mr. Garlich von Essen, Secretary General of the European Seed Association, gave the keynote presentation on the seed industry in Europe entitled “Breeding and Seed Production for the 21<sup>st</sup> Century—Challenges and Expectations of the EU Seed Industry.” Europe constitutes the second largest seed market worldwide and is the largest exporter of seed worldwide. He also pointed out the importance of seed of new varieties as the single largest contributor to growth in agricultural productivity. The European Seed Association favors seed-specific rules and regulations that will strengthen the competitiveness of the EU seed industry. Mr. von Essen’s presentation is available on the ISTA Web site at [https://www.seedtest.org/upload/cms/user/ESA\\_09.0457.pdf](https://www.seedtest.org/upload/cms/user/ESA_09.0457.pdf).

A one-day workshop on ISTA Seed Analyst Training was held June 14. Pieter Oosterveld, ISTA Past President, facilitated the workshop, which included small group discussions. On June 15, a one-day ISTA Seminar on Purity Testing was led by Dr. Maria Rosaria Mannino, ISTA Purity Committee chair. This seminar included informative presentations on pure seed definitions and

seed identification. In addition, Dr. Adriel Garay's presentation on the use of the anemometer to calibrate the uniform blower elicited interest in determining whether this method would prove acceptable for use in ISTA testing; a working group is pursuing this.

Highlights of the business meeting:

- Adoption of the "Position Paper on ISTA'S view regarding the units for reporting quantitative results on the presence of seeds with specified traits in conventional seed lots"
- Approval by majority vote of the membership for the proposal to increase the annual dues by 2.4% for 2010 (The U.S. delegate spoke in opposition and voted against this increase, as did delegates from several other countries.)
- Discussion of the letter from the ISTA president announcing the increase of the laboratory accreditation fee from 10,000 Swiss francs to 13,000 Swiss francs in 2010
- Adoption of the rule change proposals, which will take effect January 1, 2010

The next meeting is the ISTA Congress in Cologne, Germany, June 15-22, 2010.

For more information, contact Susan Maxon (704) 810-8877; [susan.maxon@ams.usda.gov](mailto:susan.maxon@ams.usda.gov).

### **AGRICULTURAL MARKETING SERVICE REPRESENTATIVES PARTICIPATE IN THE 2009 AMERICAN SEED TRADE ASSOCIATION MEETING**

The American Seed Trade Association (ASTA) held their annual meeting in Scottsdale, AZ, June 21-24, 2009. Seed Regulatory and Testing Branch (SRTB) Chief Dr. Richard Payne and U.S. Organization for Economic Cooperation and Development (OECD) Seed Schemes Program Manager Perry Bohn participated.

Richard Payne gave presentations to both the Lawn Seed and the Vegetable and Flower Seed Divisions about the SRTB trueness-to-variety (TTV) field testing program. The TTV program monitors labeling of grass, vegetable, and field crop seeds to ensure they meet the requirements of the Federal Seed Act (FSA). Dr. Payne also made a presentation to the Legislative and Legal Concerns committee about proposed revisions to the FSA Regulations. Perry Bohn made a presentation to the ASTA Seed Industry Relations Committee about various OECD Seed Schemes issues, including program funding and the 2009 OECD Seed Schemes Annual Meeting recently held in Paris, France.

For more details regarding this year's meeting or for more information regarding this article, contact U.S. OECD Seed Schemes Program Manager Perry Bohn at (704) 810-7262; [perry.bohn@ams.usda.gov](mailto:perry.bohn@ams.usda.gov)

For more information on ASTA go to <http://www.amseed.com/>.

## **DR. RICHARD PAYNE RECOGNIZED BY THE ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES**

The Association of Official Seed Certifying Agencies (AOSCA) awarded their Distinguished Service Award to Seed Regulatory and Testing Branch (SRTB) Chief Richard Payne at their 91<sup>st</sup> Annual Meeting on June 30, 2009, in Portland, OR. Dr. Payne was recognized for his leadership in the seed industry and his assistance with certification efforts throughout the United States. Congratulations to Dr. Payne for this honor and recognition.

Dr. Payne's distinguished career began in 1975 as a plant physiologist with SRTB. In 1982, he became the SRTB Laboratory Supervisor. He has been the SRTB Branch Chief since 1999.

For information regarding this article, contact U.S. OECD Seed Schemes Program Manager Perry Bohn at (704) 810-7262; [perry.bohn@ams.usda.gov](mailto:perry.bohn@ams.usda.gov).

## **ASSOCIATION OF AMERICAN SEED CONTROL OFFICIALS MEETING**

Seed Regulatory and Testing Branch (SRTB) Chief Richard Payne and Seed Marketing Specialists Jerry Irwin and Gene Wilson attended the 23<sup>rd</sup> Annual Meeting of the Association of American Seed Control Officials (AASCO) July 20-23, 2009, hosted by the Arizona Department of Agriculture in Scottsdale, AZ. Representatives of 12 State seed control programs, the Canadian Food Inspection Agency Seed Section, USDA Animal and Plant Health Inspection Service, allied organizations, and seed companies attended the meeting.

At the general session, Richard Payne presented "Seed Marketed by Count versus Weight" and participated in the "Testing and Labeling Coated Seed" panel discussion along with Anita Hall (Association of Official Seed Analysts/Society of Commercial Seed Technologists) and Kris Mantey (The Scotts Miracle Gro Company). Dr. Payne also gave an account of 2008 Federal Seed Act (FSA) activities at the general session and at the North Central Seed Control Officials Association regional meeting. Jerry Irwin reported FSA activities at the Southern Seed Control Officials Association regional meeting and Gene Wilson reported FSA activities at the Western Association of Seed Control Officials regional meeting. There was no regional meeting for the Association of Seed Control Officials of the Northeastern States due to lack of attendance by member States.

Brenda Ball (AZ) and Gil Waibel (WY) presented "Native and Heirloom Seeds and Testing," and John Heaton (CA) and Larry Nees (IN) presented "Monitoring Low Level Presence of GM" at the general session. Chet Boruff's (Association of Official Seed Certifying Agencies) topic was "Understanding the Seed Certification Process" and Dr. Reed Barker's (Grass Genomic Testing, Inc.) topic was "Molecular Markers for Purity in Ryegrass."

Other discussions included the following:

- Proposed labeling for susceptible "refuge" seed and seed with biotechnology-derived insect-resistant traits sold in the same bag, a concept being referred to as "refuge in a bag," which is still pending Environmental Protection Agency approval;

- Importance of training new seed professionals who will be replacing many retirees; and
- The use of teleconferencing or videoconferencing the committee or regional meetings to include those members who are unable to attend the annual meetings.

Meeting attendees visited the U.S. Arid Land Agricultural Research Center at USDA's Agricultural Research Service in Maricopa, AZ (<http://ars.usda.gov/pwa/maricopa>). Their

research units are Plant Management and Control, Plant Physiology and Genetics, and Water Management and Conservation. The vision of all three units is sustaining agriculture in a water-limited environment.

The following was announced:

- The 24<sup>th</sup> annual meeting will be held in Portland, OR
- Tentative dates for the meeting are August 6-8, 2010
- The current AASCO officers are
  - President – Ron Pence (OR)
  - First Vice-President – John Heaton (CA)
  - Second Vice-President – Brenda Ball (AZ)
  - Secretary – Larry Nees (IN)
  - Treasurer – Greg Helmbrecht (WI)
  - Past President – David Buckingham (KY)

For more information about AASCO, go to <http://www.seedcontrol.org>.

For information regarding this article, please contact Seed Marketing Specialist Jerry Irwin at [jerry.irwin@ams.usda.gov](mailto:jerry.irwin@ams.usda.gov).

## **SEED ANALYST TRAINING IN GASTONIA, NC**

The Seed Regulatory and Testing Branch (SRTB) held a Federal Seed School during the week of August 10-14, 2009, with the objective of promoting uniformity in seed testing among laboratories and analysts. Topics covered Monday through Wednesday included seed identifications, structure and terminology reviews, ryegrass fluorescence testing, and the uniform blowing procedure. Thursday and Friday, the focus was on advanced testing techniques such as bioassay for fungicide detection, gel electrophoresis for variety identification, and Enzyme-Linked Immunosorbant Assay (ELISA) strategies for trait quantification in biotechnology derived seed. The Seed Grader Training/Certification workshop ran concurrently to the seed school with training on Thursday and the test on Friday. The Seed Grader Workshop, as well as a Quality Management Workshop are offered as requested.

Two Federal Seed Schools are offered each year. State government and private industry analysts are welcome to attend. In order to better meet seed analysts' training needs, SRTB requests that anyone interested in attending a 2010 Federal Seed School submit suggestions for topics and preferred dates, as soon as possible. All Certified Seed Analysts and Registered Seed Technologists receive continuing education points for attending.

Photo by Dr. Yujia Wu, USDA, AMS, 2009



Federal Seed School participants in Gastonia, NC

For more information about the Federal Seed Schools, please contact Botanist Ernest L. Allen at [ernest.allen@ams.usda.gov](mailto:ernest.allen@ams.usda.gov) or Botanist Patsy Jackson at [patsy.jackson@ams.usda.gov](mailto:patsy.jackson@ams.usda.gov). Please contact Perry Bohn at [perry.bohn@ams.usda.gov](mailto:perry.bohn@ams.usda.gov) for more information regarding Seed Grading Certification and Quality Systems Management training.

## **SEED SEGMENTS** By Jerry Irwin

### **A JOURNEY TO THE FEDERAL SEED LABORATORY**

The reporter stayed close to home this time to learn more about the Seed Regulatory and Testing Branch (SRTB), Federal Seed Laboratory. Susan Maxon is the Assistant Branch Chief and Laboratory Supervisor. The laboratory was established in 1895 in Washington, D.C. and is currently located in Gastonia, NC. SRTB is accredited by USDA's Agricultural Marketing Service as a USA Accredited Seed Laboratory (ASL) and by the International Seed Testing Association (ISTA) as an ISTA Accredited Member Laboratory. SRTB is also a charter member of the Association of Official Seed Analysts (AOSA) and ISTA. Ms. Maxon is one of the eight Members-at-Large on the ISTA Executive Committee and serves as the U.S. voting delegate to ISTA. She answered several questions about various laboratory activities.

Photo by Dr. Yujia Wu, USDA, AMS, 2009



SRTB Assistant Branch Chief/Laboratory Supervisor Susan Maxon

### What are the main functions of the SRTB Federal Seed Laboratory?

First and foremost, the laboratory carries out seed testing, both to support enforcement of the Federal Seed Act (FSA) and to provide service under the Agricultural Marketing Act (AMA). In addition, the laboratory provides training in various aspects of seed testing in order to promote uniformity.

### How many people make up the laboratory?

The seed testing staff includes five botanists, two biological science laboratory technicians, an agronomist, a plant pathologist, and a plant physiologist. They carry out the various seed testing activities. In addition, the laboratory depends on all the other SRTB staff for many essential functions, including administrative functions, computer support, and quality management to name a few. Five regulatory staff members are also inspectors authorized to sample seed, train other inspectors, and assess submitted samples as authorized by the AMA or that are subject to the FSA.

### What unique challenges does the laboratory staff face?

The seed samples we test cover a wide range of agricultural and vegetable kinds. For FSA enforcement, tests are carried out in accordance with the testing methods in the FSA regulations, which are very similar to the seed testing rules of the Association of Official Seed Analysts (AOSA). For service tests, the samples are tested according to the set of rules per customer request; this may be the "International Rules for Seed

Testing,” the “AOSA Rules for Testing Seed,” or the Federal Seed Act regulations. So the testing staff must be knowledgeable regarding a wide range of crop kinds and the requirements of three sets of rules. Because the seed we test originates not only from all over the country but from many places around the world, our staff is challenged with seed identification of a wide range of weed species. The staff must be familiar with the noxious-weed seeds of the states, the Federal noxious-weed seeds, and the noxious-weed seeds of the countries that our service-testing customers are exporting to.

Photo by Dr. Yujia Wu, USDA, AMS, 2009



Ms. Maxon, explaining characteristics of an abnormal seedling to SRTB botanists.

Most of the seed in the service-testing program is for export; this requires our staff to have some familiarity of the import regulations of the countries our customers ship to. Our service testing customers occasionally encounter problems getting their seed shipments cleared through ports-of-entry of the importing country. We can provide them with the appropriate contacts in other USDA agencies such as the Animal and Plant Health Inspection Service (APHIS) and the Foreign Agriculture Service (FAS) who can help deal with those situations.

How does the SRTB laboratory benefit from the cooperative agreements between AMS and the State seed programs?

AMS has a cooperative agreement with each of the States for enforcement of the Federal Seed Act. Under these cooperative agreements, the State seed control programs sample and test seed that is subject to the FSA, that is, agricultural and vegetable seeds that have been shipped in interstate commerce. If the State's test

results indicate that the seed lot was mislabeled, the State submits an official sample of that seed lot to the SRTB as an alleged violation of the FSA. Our laboratory then tests that official sample. Most of the samples we test for FSA enforcement have already been tested by the cooperating State seed laboratory, and we compare our results to theirs using the tolerances in the FSA regulations. The State seed laboratories are the first line in the enforcement effort to ensure truth-in-labeling under the FSA. Undoubtedly, the State seed laboratories test many samples that they find are correctly labeled, which they do not send to us. Therefore, we can concentrate our enforcement testing efforts on the seed lots that already have an indication of problems. In addition, communication with the States may alert us to situations with the potential to result in problems with seed, for example, unfavorable growing conditions that may be detrimental to seed quality of a particular crop kind.

Tell me how you and the laboratory staff prepare and conduct the seed schools.

In order to promote uniformity in seed testing, training of seed analysts from Federal, State, and private-sector laboratories has been integral to the work of the Federal Seed Laboratory almost from the beginning. Currently for our Federal Seed Schools, the botanists prepare the presentations on seed identification and purity in Power Point. In the last year or so, they have replaced all the old slide sets with Power Point presentations that have many new color photographs of seeds. Prior to each Seed School, they recheck the hands-on study sets with seeds of the species that will be presented. Our agronomist and plant physiologist have developed presentations on techniques for variety testing, with hands-on training exercises in the laboratory. Similarly, our plant pathologist provides hands-on training in seed health testing, such as endophyte testing and bioassay for detecting seed treatment. The handouts of all the presentations are organized into a booklet with a comb binder spine to be used for reference during and after the seed school. Having the Seed Schools at our facility in Gastonia enables all our testing staff to present various topics in their areas of expertise. Since providing this training is a high priority, we have equipped the conference room with video equipment that includes a high-resolution monitor. For seed identification, we have a microscope for each participant, which aids in observing the distinguishing seed characteristics of similar-appearing species.

What other activities are the laboratory staff involved with?

Many of the laboratory staff are active on technical committees of the AOSA and ISTA. Participation in technical committees enhances uniformity in seed testing—both in the application of current testing rules and in the development of proposed rules. Agronomist Mike Lovelace chairs the AOSA Cultivar Purity Committee and Plant Pathologist Sandra Walker chairs the AOSA Seed Pathology Committee. Sandra is also a member of the ISTA Seed Health Committee, heading up that committee's editorial working group. Botanist Patsy Jackson is on the AOSA Certification Committee and has just ended a term on the AOSA Rules Committee. In 2010, Botanist Ernest Allen becomes a member of the AOSA Rules Committee. Botanist Sandy Dawson is a member of the ISTA Nomenclature Committee. Sandy has also handled requests for the AOSA Master Calibration Samples for the last two years.



In order to maintain our status as an ISTA accredited laboratory and a USA Accredited Seed Laboratory (ASL), participation of all members of the staff in the quality management system is essential. All branch employees have assigned quality documents that they are responsible for reviewing and updating. The laboratory staff are responsible for reviewing the standard operating procedures pertaining to various aspects of testing and laboratory safety. Various staff members have also conducted our yearly internal audits.

What is the most unusual seed-related incident you've seen in the lab?

Seed analysts from around the country send seeds for identification. On occasion, we also have received seeds for identification from archeologists, wildlife officers, and law enforcement agencies. Trying to identify seeds from a midden or a duck gizzard can be a challenge, but seeds sent in by law enforcement present their own unique challenges. In one instance, a law enforcement agency sent an article of clothing from a murder suspect. We had the daunting task of picking through the mud-caked item to find any embedded seeds. We found a single seed and identified it, but we were not called upon to appear in court to testify. In another request for seed identification from law enforcement, we puzzled over the seeds for a while. The seeds looked familiar, but we couldn't immediately identify them. We ruled out *Cannabis sativa* (although the size, shape, and color were similar). Finally, we realized that we were looking at spinach seeds, which we usually receive for testing only a few times a year. We wondered about the circumstances of how spinach seeds had come to the attention of law enforcement!

Photo by Dr. Yujia Wu, USDA, AMS, 2009



Ms. Maxon, in the SRTB purity laboratory, examines seed samples from the herbarium to aid seed identification.

In 1999 the Front Range Seed Analysts' presented you with the Anna Lute<sup>1</sup> Award "for devotion to seed analysis and the seed industry" and in 2003 the Society of Commercial Seed Technologists granted you Honorary Membership. Do you have any advice for seed analysts and others involved with seeds?

My advice is to always keep learning and to always remember the importance of this work to the customer. In the Federal Seed Laboratory, we deal with seeds of perhaps a hundred crop kinds on a regular basis, perhaps another hundred only occasionally, and hundreds of weed species. So far in my career, I haven't run out of things to learn about seeds. Every week there is some aspect of seed testing that presents a challenge, or a seed to identify, or a customer with a problem that we can help solve. My greatest reward is being able to share my knowledge and expertise with the staff here and with other seed analysts, which ultimately helps our customers, the seed industry, all seed growers, and all of us who consume or otherwise benefit from the abundance of those crops.

<sup>1/</sup>Anna Maude Lute was a seed analyst, agrostologist, taxonomist, educator, researcher, an employee of the USDA Division of Seed Investigations in Maryland in 1910, in charge of the Agricultural Experiment Station's seed laboratory in Fort Collins, CO, from 1920-1941, AOSA president in 1925, an ISTA delegate in 1935, and much more.

The SRTB thanks Ms. Maxon for submitting information for the IOI's Seed Segments column. The Seed Segments reporter may contact you to share information about your seed program.

For information regarding this article, contact Seed Marketing Specialist Jerry Irwin at (704) 810-8878; [jerry.irwin@ams.usda.gov](mailto:jerry.irwin@ams.usda.gov).

## **AG-DISCOVERY STUDENTS VISIT FEDERAL SEED LABORATORY**

Ag-Discovery is an outreach program designed to give high school students the opportunity to explore careers in plant science. The Ag-Discovery Program is sponsored by the Animal and Plant Health Inspection Service (APHIS), and the visit to Gastonia was coordinated by Dr. Betsy Randall-Schadel. Sixteen high school students, four North Carolina State University (NCSU) student-counselors, and an NCSU instructor visited the USDA facility in Gastonia, NC, on July 16, 2009.

Photo by Sandra Walker, USDA, AMS, 2009



SRTB Botanists Ernest Allen and Todd Erickson assist Ag-Discovery students with seedling evaluation.

Photo by Dr. Yujia Wu, USDA, AMS, 2009



Dr. Lovelace explains the basics of lateral-flow testing to detect various proteins in seed.

Seed Regulatory and Testing Branch staff provided hands-on activities. Botanist Patsy Jackson held a seed identification contest and awarded prizes to the winners. The participants were very good at identifying seeds of common crops. Botanist Charlene Burton and Laboratory Technician Anitra Walker helped students plant seeds for germination tests, and Botanists Ernest Allen and Todd Erickson demonstrated how to evaluate seedlings of several crop species to complete the tests. Agronomist Mike Lovelace shared his expertise in detecting the presence of biotechnology-derived traits in seed, and gave students the opportunity to try the tests themselves. Plant Physiologist Yujia Wu talked about using gel electrophoresis to separate varieties of the same crop and Plant Pathologist Sandra Walker discussed a bioassay method to detect fungicide on seeds.

For more information about the Ag-Discovery Program, contact Plant Pathologist/Risk Analyst Dr. Betsy Randall-Schadel at [betsy.randall-schadel@aphis.usda.gov](mailto:betsy.randall-schadel@aphis.usda.gov). For more information about this article, contact Plant Pathologist Sandra Walker at (704)-810-7268; [sandra.walker@ams.usda.gov](mailto:sandra.walker@ams.usda.gov).

## **RYEGRASS FLUORESCENCE LIST**

Open the following pdf file to view the current ryegrass fluorescence list by the National Grass Variety Review Board. Access the Web site for additional reports and information (<http://www.aosca.org/VarietyReviewBoards/Grass.html>).



VFL0809-3.pdf

## **PLANT VARIETY PROTECTION CERTIFICATE STATUS**

Check the status of certification and search for expired certificates by accessing the Plant Variety Protection Office's Web site and entering its Public Access Databases:

<http://www.ams.usda.gov/science/pvpo/PVPindex.htm> or <http://www.ars-grin.gov/cgi-bin/npgs/html/pvplist.pl>.

## **SUBSCRIPTION INFORMATION**

The Seed Regulatory and Testing Branch (SRTB) Web site (<http://www.ams.usda.gov/seed>) contains links to our publications, including current and past issues of the "Items of Interest in Seed (IOI)." An electronic subscription option is available on our home page. This subscription service provides an e-mail notification when SRTB publications are issued or changed. The e-mail notice includes the option of unsubscribing or viewing the publications.

For information regarding this article, contact Seed Marketing Specialist Jerry Irwin at (704) 810-8879; [jerry.irwin@ams.usda.gov](mailto:jerry.irwin@ams.usda.gov).

## CALENDAR OF EVENTS

Organization for Economic Cooperation and Development (OECD) Seed Schemes Extended Advisory Meeting Paris, France	November 4-6, 2009
Western Seed Association Meeting Kansas City, MO	November 7-10, 2009
American Seed Trade Association (ASTA) 2009 Farm and Lawn Seed Conference Kansas City, MO	November 8-9, 2009
American Seed Trade Association (ASTA) Corn and Sorghum and Soybean Conference 2009 Chicago, IL	December 8-11, 2009
American Seed Trade Association (ASTA) 49 <sup>th</sup> Vegetable & Flower Seed Conference Las Vegas, NV	January 23-26, 2010
Organization for Economic Cooperation and Development (OECD) Seed Schemes Annual Meeting Christchurch, New Zealand	March 23-26, 2010
Association of Official Seed Analysts (AOSA) Annual Meeting St. Louis, MO	June 4-11, 2010
International Seed Testing Association (ISTA) 29 <sup>th</sup> Congress Meeting Cologne, Germany	June 15-22, 2010
American Seed Trade Association (ASTA) 127 <sup>th</sup> Annual Convention San Antonio, TX	June 26-30, 2010
American Association of Seed Control Officials (AASCO) Annual Meeting Portland, OR	August 6-8, 2010

Seed Regulatory and Testing Branch (SRTB)-sponsored training schedule to be determined.

For further information regarding the Calendar of Events contact Branch Secretary Winston Robinson at (704) 810-8871; [winston.robinson@ams.usda.gov](mailto:winston.robinson@ams.usda.gov).

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*“Flowers and fruit are only the beginning.  
In the seed lies the life and the future.”*

*- Marion Zimmer Bradley  
American author of fantasy and science fiction novels*

(Contributed by Seed Regulatory and Testing Branch Botanist Sandy Dawson)

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