

Seed Regulatory and Testing Division

ITEMS OF INTEREST IN SEED

(Federal Seed Communicator)

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EDITOR'S NOTES

In the mid 1890s, USDA established its first seed laboratory. It wasn't until 1902, however, that USDA named someone to head the laboratory. His name was Edgar Brown and he remained in that position until 1938. For our readers who have not heard the news, Deputy Director and Laboratory Supervisor Susan R. Maxon retired from the Seed Regulatory and Testing Division (SRTD) on February 2, 2013. Susan became the first woman laboratory supervisor at the Federal Seed Laboratory in 2003; one hundred and one years after Edgar Brown accepted the first appointment. On page 4, you will find an article on Susan's many contributions to this division, USDA, seed organizations, and the seed industry as a whole. SRTD would like to sincerely thank Susan for her many years of Federal service and invaluable contributions to this division. We wish her the very best on her future endeavors.

In this edition of the Items of Interest in Seed (IOI), we have several articles to highlight. SRTD Director Dr. Fawad S. Shah and Seed Marketing Specialist Roger Burton conducted an SRTD-ISTA (International Seed Testing Association) seed sampler training session in California. The inspectors trained on the various aspects of sampling and also trained on the possible issuance of ISTA Orange International Seed Lot Certificates (see page 7). Seed Marketing Specialist Kevin Robinson's article on SRTD's trueness-to-variety (TTV) program reminds all State seed control programs that carrot, collard, melon (cantaloupe), and soybean seed samples must be submitted to the SRTD office by May 1, 2013, for inclusion in our upcoming TTV field tests (see page 12 for a complete listing of samples and submission deadlines). Botanist Charlene Burton provides information on the upcoming Federal Seed School in Gastonia, NC, on page 13. The AOSA/SCST (Association of Official Seed Analysts/Society of Commercial Seed Technologists) exam will be offered at our facility following the seed school. If you are interested in attending the seed school or taking the exam, please register soon.

We encourage you to visit the SRTD Web site at www.ams.usda.gov/seed. The Web site contains a vast array of information, as well as the capability to retrieve past issues of the IOI or to search for articles by subject matter. Whether you are looking for information regarding service testing, State noxious-weed seed requirements, variety names, the OECD Seed Schemes Program, USA Accredited Seed Laboratory, the Accreditation Seed Sampling Program, or important SRTD program updates, you will find the information on our Web site. We are in the process of updating our SRTD Web site. The new site will include a section where you can find important news updates.

On behalf of the SRTD staff, I would like to thank our readers for their continued support of this IOI publication.

Linda Vanderhoof IOI Editor

DEPUTY DIRECTOR AND LABORATORY SUPERVISOR SUSAN R. MAXON RETIRES

Botanist Susan Maxon retired on February 2, 2013, after approximately 40 years of service in the Federal Government, 36 of those with the USDA, AMS, Seed Regulatory and Testing Division (SRTD/Federal Seed Laboratory). Susan began her career in the Federal Seed Laboratory as a Biological Science Laboratory Technician/Plants in Beltsville, MD and quickly moved into the position of Botanist. She served in that position until the 'Seed Branch' relocated to Gastonia, NC, in 2003. At that time, Susan became Assistant Branch Chief and Laboratory Supervisor. Her title changed to Deputy Director/Laboratory Supervisor a few years ago when the 'Branch' became the Seed Regulatory and Testing Division.

Through dedication and hard work, Susan has left a long list of accomplishments that have brought her much respect and numerous awards. Her work over the years has supported the Federal Seed Act by promoting uniformity in seed testing in the United States and internationally, and truthful labeling of seed which results in clearer choices for consumers and fairer competition within the seed trade. Susan has always been an educator and has transferred a massive amount of knowledge to colleagues and employees at the Federal Seed Laboratory, as well as to many others in the seed industry through

Photo by Dr. Yujia Wu, USDA, AMS, 2012

Susan Maxon at a recent Federal Seed School

Federal Seed Schools and through her work with various seed organizations. Her knowledge of seed-testing rules, seed identification, regulatory issues, and quality systems is staggering and she has acquired a vast number of contacts and friends in the seed world.

A few of Susan's accomplishments include: Association of Official Seed Analysts (AOSA) Rules Committee member (1992-1996); Chairman of the AOSA Editorial Committee and Editor of the AOSA Journal of Seed Technology (1993-1996); AOSA Handbook Editor (1998-1999); AMS Representative at the USDA Biotechnology Policy Group, Biotechnology Coordinating Committee, and the Office of Science and Technology Policy's Interagency Group on Adventitious Presence (2001-2002); Head of the U.S. delegation to the Organization of Economic Cooperation and Development (OECD) Seed Schemes (2001-2003); International Seed Testing Association (ISTA) Executive Committee Member-at-Large (2004-2010); U.S. voting delegate to ISTA (2002-2012); Items of Interest in Seed (IOI) Staff Supervisor (2004-2012); and Acting Director of the SRTD (1/2012-4/2012).

Awards presented to Susan for exceptional accomplishment include: the Anna Lute Award, presented by the Front Range Seed Analysts (1999), Certificate of Honorary Membership in the Society of Commercial Seed Technologists (2003), AMS Superior Service Award presented to the Process Verified Seed Team (2008), Society of Commercial Seed Technologists (SCST) Meritorious Service Award (2012), and the AOSA Merit Award (2012).

Susan, we thank you for your years of Federal service and consistent dedication throughout your career and we wish you and your family success and happiness in all of your future endeavors.

FEDERAL SEED ACT CASES SETTLED

The Federal Seed Act (FSA) regulates the interstate shipment of agricultural and vegetable seeds. The FSA requires that seed shipped in interstate commerce be labeled with certain information necessary for the seed buyer to make an informed choice. The labeling information and any advertisements pertaining to the seed must be truthful. The FSA helps promote uniformity among the state laws and fair competition within the seed trade.

The following cases were settled administratively under the FSA between September 5, 2012, and March 8, 2013. Under the administrative settlement procedure, the Seed Regulatory and Testing Division 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.

B&G Seed Processors, Inc., Williston, FL, has paid \$3,150 for cases involving four seed shipments to Georgia. Seed regulatory officials in Georgia 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, inert matter, and germination percentages;
- false labeling of test date; and
- failure to keep or supply complete records of the seed.

Barenbrug USA, Tangent, OR, has paid \$5,200 for cases involving three grass-seed shipments to Kentucky, Missouri, and Texas. Seed regulatory officials in Kentucky, Missouri, and Texas cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of germination, pure seed, and weed-seed percentages;
- false labeling of test date and kind name:
- failure to label the presence of noxious-weed seeds (undesirable grass seed); and
- failure to keep or supply complete records of the seed.

Beachner Seed Company, St. Paul, KS, has paid \$6,500 for cases involving six grass-seed shipments to Georgia and Kentucky. Seed regulatory officials in Georgia and Kentucky cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- · false labeling of germination percentage and
- false labeling of variety name.

Discount Seeds, Inc., Watertown, SD, has paid \$2,475 for cases involving three seed shipments to Missouri and Texas. Seed regulatory officials in Missouri and Texas cooperated in the initial sampling and inspection. The alleged violations were:

- failure to label the presence of noxious-weed seeds and
- failure to keep or supply complete records of the seed.

DLF International Seeds, Halsey, OR, has paid \$1,575 for cases involving two seed shipments to Texas. Seed regulatory officials in Texas cooperated in the initial sampling and inspection. The alleged violations, while not the same for both shipments, were:

- failure to label the presence of noxious-weed seeds and to label as a mixture;
- false labeling of test date and variety name; and
- failure to keep or supply complete records of the seed.

Grassland Oregon, Salem, OR, has paid \$1,050 for cases involving three grass-seed shipments to Missouri. Seed regulatory officials in Missouri cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

• false labeling of pure seed and germination percentages.

Johnston Seed Company, Inc., Ashburn, GA, has paid \$14,850 for cases involving 17 seed shipments to Alabama and Mississippi. Seed regulatory officials in Alabama and Mississippi cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of other crop seed and germination percentages;
- false labeling of test date; and
- failure to keep or supply complete records of the seed.

North Florida Peanuts, Inc., Trenton, FL, has paid \$1,400 for cases involving three seed shipments to Georgia and North Carolina. Seed regulatory officials in Georgia and North Carolina 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 other crop seed percentages and
- failure to label the presence of noxious-weed seeds.

OreGro Seeds, Inc., Albany, OR, has paid \$3,375 for five grass-seed shipments to Georgia, Louisiana, Tennessee, and Texas. Seed regulatory officials in Georgia, Oregon, Tennessee, and Texas cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of varietal purity, other crop seed, and germination percentages;
- failure to label the presence of noxious-weed seeds and to label as a mixture;
- misleading lot representation as to variety; and
- failure to keep or supply complete records of the seed.

Turner Seed, Inc., Lavergne, TN, has paid \$2,800 for six seed shipments to Kentucky. Seed regulatory officials in Kentucky cooperated in the initial sampling and inspection. The alleged violations, while not the same for all shipments, were:

- false labeling of pure seed and germination percentages;
- false labeling of noxious-weed seeds rate of occurrence; and
- failure to label as a mixture.

NOXIOUS-WEED SEED LIST FOR 2013

The Seed Regulatory and Testing Division (SRTD) staff recently revised the State Noxious-Weed Seed Requirements Recognized in the Administration of the Federal Seed Act. The

SRTD staff is grateful to the State seed control officials and contacts for submitting State seed law changes to this office.

SRTD posted the 2013 issue in March. To receive e-mail notification of new publications or changes to current publications, visit http://www.ams.usda.gov/seed, choose "Subscribe to Publications" under the Resources heading, and follow instructions to select the option to receive electronic publications.

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

SRTD-ISTA SEED SAMPLER TRAINING

Seed Regulatory and Testing Division (SRTD) Director, Dr. Fawad S. Shah, and Seed Marketing Specialist Roger Burton conducted a two-day SRTD-International Seed Testing Association (ISTA) Seed Sampler Training in Davis, CA on February 20-21, 2013. Fourteen California State and County inspectors participated. Inspectors were trained on the proper rules, methods, and techniques for sampling and submission of seed samples for testing and possible issuance of ISTA Orange International Seed Lot Certificates. ISTA sampling will be conducted using the current "ISTA Seed Sampling Guidelines for the Seed Regulatory and Testing Division."

The following topics were covered:

- Health and safety issues in seed sampling
- Planning seed sampling activities
- Approved sampling equipment and procedures
- Sealing of seed lots
- Marking and labeling of seed lots
- Seed lot homogeneity (uniformity) and heterogeneity (non-uniformity)
- Seed sampling and purpose of the submitted sample
- Mixing and dividing methods for submitted samples
- Proper handling, storage, and shipping of seed samples
- Proper sampling intensities, minimum submitted sample weights, and maximum lot sizes

Throughout the training sessions, SRTD personnel emphasized hands-on practice in sampling, and worked with participants to demonstrate proper use of each sampling trier. Following the training session, each inspector was required to take a written test designed to evaluate their general knowledge of the "ISTA Seed Sampling Guidelines for the Seed Regulatory and Testing Division." SRTD personnel evaluated the inspectors as they conducted actual seed sampling procedures.

Our deepest gratitude goes out to Mr. John Heaton of the California Department of Food and Agriculture (CDFA), Seed Services Program, for hosting and for providing unwavering assistance that made the SRTD-ISTA Seed Sampling Training possible.

A sincere thank you also goes to Mr. Paul Lehman, USDA Farm Service Agency in Davis, CA, for the use of the facility during the general training session; and to Mr. Robert Stewart and Clyde Clark, University of California Davis Foundation Seed Warehouse, for the use of their facilities during the hands-on seed sampling training sessions.

For information regarding this article, contact Seed Marketing Specialist Roger Burton at (704) 810-7265; roger.burton@ams.usda.gov.

WHO IS RESPONSIBLE FOR LABELING SEED SHIPPED IN INTERSTATE COMMERCE?

The U.S. Congress enacted the Federal Seed Act (FSA) in 1939 to require labeling and to prevent misrepresentation of seeds in interstate commerce. Agricultural and vegetable seed transported or delivered for transportation in interstate commerce is subject to the FSA.

Most often, the responsible party is the dealer, otherwise known as the interstate shipper. A dealer, as defined in the regulations under the FSA, is any person who cleans, processes, sells, offers for sale, transports, or delivers for transportation, seeds in interstate commerce. The term "person" includes a partnership, corporation, company, society, association, receiver, or trustee. This could also include a broker or the grower, although the dealer is in the best position to determine the quality of the seed and properly label it. A broker, however, may be held responsible for having "sold" seed for shipment in interstate commerce. When a company buys seed from a dealer, that dealer is responsible for having sold the seed to the company, whether the dealer ships the seed to the company or the company picks up the seed from the dealer. Each dealer must assure the seed is labeled correctly at the time of interstate shipment.

Facts, suggestions, and publications for the seed dealer:

- Relabeling carry-over seed The FSA considers the test date on new labels as the new date of interstate shipment, when submitted by the interstate shipper.
- Predated test dates It is not permissible to use a predated test date for interstate shipment. The label shall show the calendar month and year that the test was completed for determination of the percentages of germination and hard seed, if present.
- Unlabeled seed Seed may be shipped without labels if all of the following conditions are met:
 - o The seed is in containers and in quantities of 20,000 pounds or more.
 - The omission from each container is with the knowledge and consent of the consignee prior to the shipment.
 - o Each container bears a lot designation.
 - The invoice or other records accompanying and pertaining to the seed bears the labeling information. See FSA section 201(a), (b), and (i); and section 201.44 of the regulations under the FSA.

Suggestions:

 Maintain complete records of seed shipped in interstate commerce, including records of receiving, documents establishing the stated variety, processing/handling/conditioning, test reports, labeling, sales/shipping, and a file sample. Keep them readily available, as records must be kept for at least three years. The seed sample (file sample) may be discarded one year after disposal of the entire lot of seed.

- Have methods to detect and remedy non-uniformity such as sampling from different portions of the lot. If non-uniformity is indicated, clean, blend and/or subdivide a large lot into several smaller lots, or otherwise condition the seed to eliminate the non-uniformity.
- Acquire your own test whether it is from a private company or State laboratory. An
 interstate shipper is taking a risk by relying solely on their supplier for labeling
 information.
- Consider asking your State Department of Agriculture to take an official sample and have it officially tested by their laboratory.
- When relabeling carry-over seed, consider pulling and testing a sample from the lot at the warehouse or retail location where the seed is stored. A germination test conducted on a file sample, stored in ideal conditions, may not accurately represent the seed stored in less than ideal conditions.
- Know the noxious-weed seed restrictions and prohibitions of the State in which the seed will be shipped.
- Be aware of interstate shipping regulations according to the FSA.

The following publications are found on the SRTD Web site (www.ams.usda.gov/seed):

- Federal Seed Act (FSA)
- Federal Seed Act (FSA) Regulations Part 201
- State Noxious-Weed Seed Requirements Recognized in the Administration of the Federal Seed Act
- Seed Company Records and the Federal Seed Act
- Labeling Requirements for Chemically Treated Seed
- Facts About Naming and Labeling Varieties of Seed
- Items of Interest in Seed (IOI)

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

SPECIAL CONSIDERATIONS WHEN USING THE UNIFORM CLASSIFICATION OF WEED AND CROP SEEDS (HANDBOOK 25, AOSA RULES VOLUME 3)

The Uniform Classification of Weed and Crop Seeds (Rules Volume 3) published by the Association of Official Seed Analysts (AOSA) is a useful tool for seed analysts. The handbook allows seed analysts to classify an undesirable contaminating seed as crop or weed in any given lot based on the species class of the pure seed component(s). The seed analyst and the seed dealer or broker should be mindful, however, that some State seed regulations regarding

the classification of noxious-weed seeds takes precedence over the Uniform Classification handbook when there is a conflict.

Seeds of *Dactylis glomerata* (orchardgrass) and *Festuca arundinacea* (tall fescue) are examples of species, listed in the Uniform Classification handbook, that occasionally conflict with some State seed regulations. The Uniform Classification handbook considers these two species as "crops" across all contaminating classifications. There are several states, however, including but not limited to, Delaware, Maryland, New Hampshire, New Jersey, Pennsylvania, Virginia, and West Virginia, that require these seeds, under certain circumstances, to be labeled and treated as "Noxious-weed Seeds" or "Undesirable Grass Seeds." This noxious-weed seed classification only applies when these seeds are found in certain species of seed (subject to individual State regulations), and/or grass seed mixtures containing any of the listed species. An individual State's noxious-weed seed regulations may not apply to seed lots clearly labeled for reclamation, forage, hay, pasture, or conservation usage.

In addition, when tall fescue or orchardgrass seed(s) are found in quantities of five percent or more by weight, the seed need not be labeled as a noxious-weed seed. Any seed kind, kinds, or varieties exceeding five percent of the lot are required under Federal Seed Act regulations to be labeled as a component (See sections 201.9, 201.10, and 201.48 of the FSA regulations).

When found and identified as contaminants in samples from seed lots not purposed for lawn or turf, orchardgrass and tall fescue fall under the guidance given in the Uniform Classification handbook. Due to unique labeling requirements in each state, it is important for the seed analyst and the seed dealer or broker to know and understand the Uniform Classification guidelines, and the rules, regulations, and policies regarding restricted or prohibited seeds, where the seed is being shipped.

For information regarding this article, contact Botanist Ernest L. Allen at (704) 810-8873; Ernest.Allen@ams.usda.gov.

AN ALTERNATIVE METHOD OF REMOVING COATING MATERIAL BY STIRRING

Federal Seed Act Regulation 201.51b(c) and AOSA Rule 3.8e (3) require that before conducting a purity test on coated seed, the analyst remove coating material "by washing with water or other solvents such as, but not limited to, dilute sodium hydroxide (NaOH). Use of fine mesh sieves is recommended for this procedure and stirring or shaking the coated units may be necessary to obtain de-coated seed." The washed sample is then dried overnight and separated into its component parts through a normal purity test. The weight of the coating material is calculated by subtracting the final combined weight of all the component parts from the initial working weight obtained before washing.

Washing may yield varying results, depending on such things as the type of coating, number of layers/applications, duration of washing, and the size and/or shape of the seed. The analyst may find that agitating the seed along the surface of the sieve mesh helps to remove additional coating, but care must be taken to avoid damage to the seed.

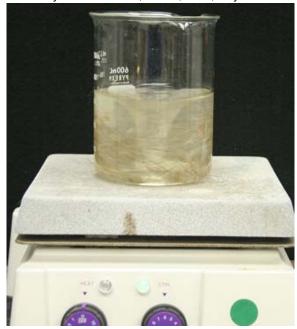
The use of a magnetic stir bar and plate is a very time-efficient and useful way to remove coating material and has a number of advantages: it frees the analyst from the repetitive motion of shaking the sieve, reduces the chance of spillage, and eliminates the chance of abrading the

seed against the sieve mesh. To wash seed using this method, add an ample amount of water to a beaker to minimize contact between the spinning stir bar and the seed. Add the seed and stir bar to the beaker and place it on the magnetic plate. The rotation speed of the bar should be kept at a moderate level, as excessive stir bar movement could damage delicate seed. Although this procedure may reduce the need for multiple washings, a second wash may be carried out if a significant amount of coating remains on the seed following the first wash. Once washing is complete the contents of the beaker must still be poured through a sieve to remove the water. The analyst should take care during this step not to lose any seed, and should check that no seed remains stuck to the beaker or the stir bar.

Trials were set up to compare the percentage (by weight) of coating removed by the two methods. Ten repetitions of a coated tall fescue sample were decoated: five using the sieving method and five using the stir bar method. Each sample was weighed, washed for ten minutes, dried overnight, and reweighed. The stir-bar method removed an average of 30.92% of the coating, while the sieve method averaged 29.32%. These results are not significantly different, indicating that the methods are interchangeable (t = 0.88, α = 0.05). There was no visible damage to the seeds with either method.

Neither the FSA Regulations nor AOSA Rules give specific guidelines on the method for washing the seed by stirring. This stir bar method could therefore be considered a valid alternative to the sieve method. Using the stir bar achieves results that are statistically the same as the sieving method, and has the advantages of saving time and increasing uniformity by removing possible analyst subjectivity during the sieving process.





Magnetic stir plate and stir bar removing coating material from a tall fescue sample.

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

SPRING TRUENESS-TO-VARIETY OVERVIEW

Each year the Seed Regulatory and Testing Division (SRTD) conducts trueness-to-variety (TTV) field tests to determine if seed lots are properly labeled for variety, 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 SRTD. SRTD relies on State seed control programs to submit samples for inclusion in the TTV tests.

The SRTD is currently conducting tall fescue TTV testing at the Piedmont Research Station, Salisbury, NC. We are in the process of preparing summer TTV samples. **Carrot, collard, melon** (cantaloupe), and **soybean** TTV samples should be submitted by May 1, 2013. Upcoming summer TTV samples will be grown at various locations including: Clemson University, Clemson, SC; Piedmont Research Station, Salisbury, NC; and the SRTD Greenhouse, Gastonia, NC.

SRTD encourages all State seed control programs to submit seed samples of the previously mentioned kinds (**in bold**) for TTV testing.

If there are any questions concerning the TTV program or directions for submitting samples, please contact Seed Marketing Specialist Kevin Robinson at (704) 810-7264; kevin.robinson2@ams.usda.gov.

FEDERAL SEED SCHOOL AND AOSA/SCST CONSOLIDATED EXAM IN GASTONIA, NC 2013

The Seed Regulatory and Testing Division (SRTD) will hold a Federal Seed School in Gastonia, NC, August 5-7, 2013. Presentation of topics will be on a level appropriate for beginning and experienced seed analysts.

The Seed School will focus on purity and identification of similar crop and weed species. Other topics such as the uniform blowing procedure, fluorescence tests, and pure seed definitions will also be covered. Planned topics are subject to change depending on participant requests and time constraints.

These seed schools are open to seed analysts from private and government seed testing laboratories. Enrollment will be limited to 20 participants due to the hands-on nature of the topics and one-on-one attention from the instructors. Participants from non-government laboratories will be charged a fee of \$96 (\$32 per day).

In addition to the Seed School, the SRTD will host the AOSA/SCST (Association of Official Seed Analysts/Society of Commercial Seed Technologists) consolidated exam, August 8th and 9th. Information regarding this exam can be found on the AOSA Web site: http://www.aosaseed.com/Certification-Committee.htm. Botanist Pattsy Jackson (e-mail address below) is the contact for the Gastonia, NC exam (Southern-Region V).

For more information about this Seed School or to request a pre-registration sheet, please contact Botanist Pattsy Jackson at pattsy.jackson@ams.usda.gov or Botanist Charlene Burton at charlene.burton@ams.usda.gov.

RYEGRASS FLUORESCENCE LIST

The Association of Official Seed Certifying Agencies (AOSCA) revises its report of the Variety Fluorescence Levels Recognized by the AOSCA National Grass Ryegrass Review Board twice a year. Click on the Grass National Variety Review Board section of the Web site (http://www.aosca.org/VarietyReviewBoards/Grass/Grass.html) then click on the link for the National Perennial Ryegrass Variety Fluorescence Report to view the most current list.

PLANT VARIETY PROTECTION CERTIFICATE STATUS

The Plant Variety Protection Office (PVPO) posts a public version of the Certificate Status Database. Access <u>PVPO Certificate Status Database</u> to check the status of certification or to search for expired certificates. To view PVPO's list of U.S. protected varieties, access <u>PVPO List of U.S. Protected Varieties</u>. It may take time for the list to open due to its large size. The PVPO updates these public access databases monthly or as time permits.

CALENDAR OF EVENTS

Association of Official Seed Analysts (AOSA/SCST) Annual Meeting Boise, ID	May 17-23, 2013
Organization for Economic Cooperation and Development (OECD) Seed Schemes Working Group and Annual Meeting Paris, France	June 3-6, 2013
International Seed Testing Association (ISTA) Congress and Annual Meeting Antalya, Turkey	June 12-18, 2013
American Seed Trade Association (ASTA) 130 th Annual Convention Nashville, TN	June 15-19, 2013
American Association of Seed Control Officials (AASCO) Annual Meeting Annapolis, MD	June 21-25, 2013
Association of Official Seed Certifying Agencies (AOSCA) Annual Meeting Dearborn, MI	June 23-26, 2013

Federal Seed School Gastonia, NC

August 5-8, 2013

Additional training sponsored by the Seed Regulatory and Testing Division may be added later.

For further information, please visit organization Web sites.

STAFF DIRECTORY

Director

Dr. Fawad Shah, (704) 810-8884, fawad.shah@ams.usda.gov

Laboratory Supervisor/Deputy Director

VACANT

Management Analyst

Marshalle (Tina) Jackson, (704) 810-8882, marshalle.jackson@ams.usda.gov

Office Automation Assistant

Carolyn Camidge, (704) 810-7263, carolyn.camidge@ams.usda.gov

Biological Science Laboratory Technician

Anitra Walker, (704) 810-7269, anitra.walker@ams.usda.gov

Botanists

Ernest Allen, (704) 810-8873, ernest.allen@ams.usda.gov
Charlene Burton, (704) 810-8880, charlene.burton@ams.usda.gov
Sandy Dawson, (704) 810-7270, sandy.dawson@ams.usda.gov
Todd Erickson, (704) 810-7266, todd.erickson@ams.usda.gov
Pattsy Jackson, (704) 810-8881, pattsy.jackson@ams.usda.gov

Information Technology Specialist

Matthew Arthen, (704) 810-8885, matthew.arthen@ams.usda.gov

Plant Pathologist

Sandra Walker, (704) 810-7268, sandra.walker@ams.usda.gov

Plant Physiologist

Dr. Yujia Wu, (704) 810-7267, yujia.wu@ams.usda.gov

Seed Marketing Specialists (International)/OECD Seed Schemes Program

Gene Wilson, (704) 810-8888, gene.wilson@ams.usda.gov Karen Sussman, (704) 810-7272, karen.sussman@ams.usda.gov

Seed Marketing Specialists (Regulatory)

Roger Burton, (704) 810-7265, roger.burton@ams.usda.gov
Jerry Irwin, (704) 810-8878, jerry.irwin@ams.usda.gov
Kevin Robinson, (704) 810-7264, kevin.robinson2@ams.usda.gov
Linda Vanderhoof, (704) 810-8879, linda.vanderhoof@ams.usda.gov

Main Office Phone, (704) 810-8871 Main Lab Phone, (704) 810-8870

Regulatory Section Fax, (704) 852-4109 Testing Section Fax, (704) 852-4189

SEED REGULATORY AND TESTING DIVISION

IOI Editorial Staff

Linda Vanderhoof, Editor Sandy Dawson, Co-Editor Ernest Allen, Co-Editor Dr. Fawad S. Shah, Director

IOI Staff Writers

Ernest Allen, Botanist
Charlene Burton, Botanist
Roger Burton, Seed Marketing Specialist
Sandy Dawson, Botanist
Todd Erickson, Botanist
Jerry Irwin, Seed Marketing Specialist
Kevin Robinson, Seed Marketing Specialist
Karen Sussman, Seed Marketing Specialist
Linda Vanderhoof, Seed Marketing Specialist

"First the farmer sows the seed,
Then he stands and takes his ease,
Stamps his foot and claps his hands
And turns him round to view the land."

- Verse from a 15th Century Planting Song

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

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