Seed Regulatory and Testing Branch

ITEMS OF INTEREST IN SEED

October 2010

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USDA Agricultural Marketing Service

TABLE OF CONTENTS

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EDITOR'S NOTES

"Farming looks mighty easy when your plow is a pencil
and you're a thousand miles from the corn field."
- Dwight David Eisenhower
(34th President of the United States of America)

This summer, I faced the challenge of planting my first container garden. As the quote above suggests, gardening is much easier from a distance. While the weeks passed, I began to notice that the tomato plants I purchased, two different varieties, did not fit the variety descriptions printed on their plant markers. For reasons unknown, the tomato varieties I harvested were not the tomato varieties I thought I had planted. I was disappointed, of course, but the incident emphasizes the importance of ensuring that seed is labeled correctly, not just for farmers who cultivate hundreds of acres or greenhouse operators who plant seed to grow transplants for sale, but for home gardeners as well.

Mislabeled seed varieties are considered serious violations of the Federal Seed Act (FSA), with actions against the seed company ranging from a warning letter to monetary penalties. Each spring and fall, the Seed Regulatory and Testing Branch (SRTB) verifies variety labeling through its trueness-to-variety (TTV) program. The TTV program's main objective is to identify seed lots that bear the wrong variety name on the label or that have significant levels of off-type seeds within the lot.

State departments of agriculture and State universities support our TTV program by submitting samples or conducting field tests. In each "Items of Interest in Seed" (IOI) publication, you will notice a TTV overview, written by SRTB Agronomist Mike Lovelace, that includes a request for specific samples from State departments of agriculture for upcoming TTV test sites. We appreciate the support of State seed control programs in this regard. Through these coordinated efforts to eliminate variety mislabeling, we hope there will continue to be fewer findings in the future. In addition, this issue of the IOI includes a second article by Dr. Lovelace concerning the possibility of offering grow-out tests for post control on seeds shipped through the Organization for Economic Cooperation and Development (OECD) Seed Schemes, or for other purposes. A tentative list of estimated charges for post-control field-testing is included in the article.

This issue highlights several important meetings and workshops that the SRTB staff members have participated in recently, including the annual meetings of the American Association of Seed Control Officials (AASCO), American Seed Trade Association (ASTA), the Association of Official Seed Analysts and Society of Commercial Seed Technologists (AOSA-SCST), Association of Official Seed Certifying Agencies (AOSCA), the OECD Seed Schemes, and seed analyst and inspector training. Also, see Botanists Sandy Dawson's and Todd Erickson's articles on seed identification of *Brassica* species and quackgrass/wheatgrass, respectively, and Seed Marketing Specialist Jerry Irwin's interview with Mary Smith, Seed Division Director of the State Plant Board in Little Rock, AR.

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

Linda Vanderhoof
IOI Editor

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, as required by the Federal Seed Act (FSA) and State seed laws. Field testing is conducted by crop experts at State universities and departments of agriculture in cooperation with SRTB. SRTB relies on State seed control programs to submit samples for inclusion in the TTV tests.

Last year, the SRTB obtained about 750 total TTV samples of alfalfa, clovers, sweet corn, tomatoes, peppers, eggplants, sorghum, sorghum sudangrass, radishes, and turnips. Last year's samples were obtained by the SRTB from local retail stores and submitted by the seed control programs in Arizona, Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Missouri, Nebraska, New York, North Carolina, Ohio, Pennsylvania, South Carolina, South Dakota, Texas, Utah, Vermont, Virginia, West Virginia, and Wisconsin. Thirty-seven of the 750 samples were determined to be mislabeled. Mislabeling violations included complete variety substitutions, excessive presence of off-type plants, and varietal mixtures labeled as single varieties. Information and records for these samples were provided to SRTB seed marketing specialists for investigation of mislabeling.

This summer, the SRTB is conducting TTV tests on okra at Alcorn State University, Lorman, MS; soybeans at Clemson University, Clemson, SC; garden beans at the Piedmont Research Station, Salisbury, NC; and melons and cantaloupes at the Texas Department of Agriculture, Giddings, TX. Then in the fall, the SRTB will conduct TTV trials for collards, broccoli, cabbage, cauliflower, Brussels sprouts, and peas. Samples for this year's TTV trials were obtained by the SRTB from local retail stores and submitted by the State seed control programs in Alabama, Arkansas, California, Delaware, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Missouri, North Carolina, Nebraska, New York, Ohio, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Vermont, and Wisconsin.

The SRTB would like to thank the States for participating in the TTV program. Once results and information have been compiled, participating States will be notified of any mislabeling.

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

USE OF EXISTING VARIETY NAMES

There are several acceptable ways to name new varieties of seed that are derived from an existing variety. One obvious way is to give the new variety an entirely new name. Another possibility is to use the name of the original variety plus a prefix or suffix that makes the variety name unique. If the name of an existing variety is used as part of the new name, the new variety must be derived from or closely related to the existing variety. It is expected that the new variety will be similar to the existing variety but contain one or more new, improved, or value-added traits. For example, if the current variety name is 'ABC' squash and the name suggested for a variety is 'Early ABC' squash, the new variety must be derived from ABC and contain a trait for earlier maturity.

Occasionally we have determined that a new variety with the name of an existing variety as part of its name is not actually related to or derived from the existing variety. In most instances, the existing variety is a popular variety and accounts for a significant market share. In these cases, it appears that the company marketing the new variety is attempting to capitalize on the popularity of the existing variety. This practice is a violation of the Federal Seed Act (FSA) because it is misleading to consumers, who would expect the new variety to be similar to the existing variety with certain minor differences or improvements.

For more information on naming varieties, please visit our website at www.ams.usda.gov/seed and go to the publications section for "Facts About: Naming and Labeling Varieties of Seed."

If there are any questions concerning variety names, please contact Seed Marketing Specialist Kevin Robinson at (704) 810-7264; kevin.robinson2@ams.usda.gov.

AGRICULTURAL MARKETING SERVICE (AMS) FIELD GROW-OUT OPTION

Due to recent cutbacks in funding and personnel, some States have inquired about the possibility of the Seed Regulatory and Testing Branch (SRTB) performing field grow-out tests, especially post-control tests. The Organization for Economic Cooperation and Development (OECD) Seed Schemes requires post-control tests on a percentage of seed lots shipped through the program. These tests are conducted on selected samples of certified seed lots shipped through OECD to verify varietal identity and purity. The Designated Authority of each participating country oversees the post-control tests, tabulates the results, and reports them to the OECD Seed Schemes Secretariat.

The SRTB has the necessary resources to conduct post-control testing. Currently, the SRTB conducts field trueness-to-variety (TTV) testing on seed samples to enforce the variety-labeling provisions of the Federal Seed Act. These TTV tests are conducted at several locations with various soil types and environmental conditions that will satisfy the needs of most crops. The procedures for conducting the post-control grow outs will be very similar to those already being used to evaluate TTV seed samples.

Below are examples of some estimated charges for post-control field-testing:

- Grasses–-two rows of 50 transplanted plants - $70/entry
- Corn, soybean, and/or sunflower—200 seeds - $40/entry
- Check sample accompanying a test sample - $15/entry
- Others: To Be Determined

Additionally, the SRTB has the capability for conducting other independent, unbiased field variety tests as a service to interested states, seed companies, or other entities.

If you have any interest or questions about post-control or any other field-testing need, contact Agronomist Mike Lovelace, Ph.D., at (704) 810-7261; michael.lovelace@ams.usda.gov.

2010 OECD SEED SCHEMES ANNUAL MEETING HIGHLIGHTS

The Organization for Economic Cooperation and Development (OECD) Seed Schemes met March 22-26, 2010, in Christchurch, New Zealand. Prior to the beginning of the Annual Meeting on March 25, 2010, U.S. OECD Seed Schemes Program Manager Perry Bohn participated in Advisory Group meetings and chaired the Technical Working Group meeting as part of his responsibilities as Vice Chairman of the OECD Seed Schemes.

Representatives from the Association of Official Seed Certifying Agencies (AOSCA) and the Association of Official Seed Analysts (AOSA) also attended the Annual Meeting.

Key accomplishments of the Annual Meeting include:

- Adoption of the Guidelines for Multiplication Abroad
- Acceptance of the new compacted Rules and Regulations of the Seed Schemes
- Approval of the amendment to the Rules for Acceptance of Varieties
- Extension of the participation of South Africa to include the Cereal Seed Scheme
- Approval of the amended proposal for changes to the Rules for admission of new countries to the OECD Seed Schemes
- Approval of the revisions of the Guidelines for Post-control Plot Tests and Field Inspections for all crop groups, except the section regarding maize, which will be reviewed during the upcoming year

The next Extended Advisory Group meeting is scheduled for November 16-19, 2010, at the OECD headquarters in Paris, France. The next annual meeting will be held May 9-13, 2011, in Istanbul, Turkey.

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. For more information on the OECD Seed Schemes, go to http://www.oecd.org.

ASSOCIATION OF OFFICIAL SEED ANALYSTS-SOCIETY OF COMMERCIAL SEED TECHNOLOGISTS ANNUAL MEETING

The 2010 joint annual meeting of the Association of Official Seed Analysts (AOSA) and the Society of Commercial Seed Technologists (SCST) was held June 7-10, in St. Louis, MO. Botanist Ernest Allen and Agronomist Michael Lovelace represented the Seed Regulatory and Testing Branch at the meeting.

The AOSA Rules Committee presented fourteen rule change proposals for review and adoption. Several proposals involved reassignment of species into different pure seed definitions that better characterize their seed morphological features. Other rule change proposals were intended to clarify existing testing procedures. The AOSA and SCST voted to accept all rule change proposals for implementation on October 1, 2010.

Two of these newly adopted AOSA rule changes conflict with Federal Seed Act (FSA) regulations. The first conflict involves the procedures for conducting a purity analysis and germination test on coated Poaceae seeds. Current AOSA rules and FSA regulations stipulate that for single coated kinds, "coated seed units shall be placed on the substratum in the condition in which they are received without rinsing, soaking, or any other pretreatment" (FSA regs 201.58(c)(1), AOSA Rules 3.8.(d); 6.8(l)(a)). Currently, analysts plant coated seed units in the condition in which they are received to evaluate effects of the coating material during germination. The forthcoming AOSA rule mandates washing single-component seed samples of Poaceae for purity analysis; thus analysts will plant washed seeds of Poaceae for germination tests. Although the FSA regulations require washing of coated seeds to determine the percentage of coating material as part of the inert matter component, germination is conducted on the unwashed coated seed units, except for mixtures of kinds that cannot be distinguished with the coating intact.

The second conflict involves changes to the AOSA blue grama (*Bouteloua gracilis*) uniform blowing point procedure. The current AOSA rules and FSA regulations specify that after blowing, only crop seeds, weed seeds, and inert matter are removed from the heavy portion. All remaining seeds in the heavy portion are considered pure. In the light portion, only crop and weed seeds are removed; all remaining material is considered inert (FSA regulations (201.51(a)(4); AOSA Rules 3.6(d)). The uniform blowing procedure was originally introduced to save time and eliminate analyst bias by using air flow to uniformly separate seeds into pure and inert components. The forthcoming AOSA rule specifies that analysts blow seeds using the original method, then hand-pick through the heavy portion for empty seeds (inert) that did not blow into the light portion and hand-pick through the light portion for filled seeds (pure) that did not remain in the heavy portion.

In addition to the rule change proposals, there was significant discussion concerning ryegrass genetic testing as a supplement or replacement test for the fluorescence test. The genetic test under discussion examines genes involved in flowering control and vernalization responses, which are considered closely associated with growth type. This method focuses on seedlings that exhibit questionable levels of fluorescence in a fluorescence test and may introduce bias because it does not take into account the annual-type plants that can exist in the non-fluorescing fraction (sometimes referred to as "big uglies"). The genetic test does provide an alternative for differentiating between annual-type and perennial-type ryegrass plants; however, very few seed testing laboratories possess the resources necessary to perform the test, and costs may be prohibitive for some laboratories. For regulatory purposes, this ryegrass genetic test does not appear to offer any clear benefit over the fluorescence test.

Another topic of discussion concerned "Refuge-in-a-Bag." In this case, the term "refuge" describes the portion of a grower's field that must be planted with a non-resistant variety when the bulk of the field is planted with a variety containing one or more genetically engineered insect resistant traits. The purpose of the refuge is to ensure that a susceptible insect population is maintained. Seed companies that sell genetically-engineered insect-resistant seed are required to ensure that the refuge acreage is planted. There is concern that some growers are not complying with the refuge planting requirement and potentially jeopardizing the long-term value of a genetically-engineered insect-resistant trait. Seed companies are seeking regulatory approval to add refuge seeds directly to bags containing the genetically-engineered seeds. This would help growers meet refuge planting requirements while avoiding a separate

planting of a non-resistant variety. Although Refuge-in-a-Bag could simplify production practices, members of AOSA and SCST expressed concerns about adequate and truthful labeling and the need to distinguish the refuge and genetically-engineered seeds in the bag for testing purposes. However the concept to combine genetically-engineered (biotech) seed and refuge seed in one bag (Refuge-in-a-Bag) could be one way for growers to benefit from this type of technology and meet the refuge requirements.

For more information on this year's AOSA-SCST meeting, please visit www.aosaseed.com. The 2011 AOSA-SCST annual meeting is scheduled June 6-11, in Williamsburg, VA.

For more information regarding this article, contact Botanist Ernest L. Allen (704) 810-8873, ernest.allen@ams.usda.gov; or Agronomist Michael Lovelace, Ph.D., (704) 810-8886, michael.lovelace@ams.usda.gov.

INTERNATIONAL SEED TESTING ASSOCIATION ANNUAL MEETING

Seed Regulatory and Testing Branch Assistant Chief/Laboratory Supervisor Susan Maxon participated in the International Seed Testing Association (ISTA) Congress on June 15-22, 2010, in Cologne, Germany. Ms. Maxon also participated in the ISTA Executive Committee meeting on June 15 and completed a three-year term as member-at-large on the ISTA Executive Committee. She also represented the USDA in the Policy Forum on "Harmonized Seed Testing and Global Seed Trade."

Robert Karrfalt, USDA Forest Service, served as the U.S. alternate delegate. Brent Reschly (Syngenta Seeds, Ames, IA) represented the Society of Commercial Seed Technologists and Michael Stahr (Iowa State University Seed Science Center, Ames, IA) represented the Association of Official Seed Analysts. Other participants from the United States included Sarah Dammen (SGS, Inc., Brookings, SD), Sharon Davidson (AgriSeed Testing, Salem, OR), Adriel Garay (Oregon State University Seed Laboratory, Salem, OR), Benjamin Kaufman (BioDiagnostics, Inc., River Falls, WI), Tim Loeffler (Monsanto, Oxnard, CA), Kirk Remund (Monsanto, St. Louis, MO), and Beth Rubin-Wilson (Dow Agro Sciences, Indianapolis, IN). Adriel Garay was named chairman of the ISTA Purity Committee for the upcoming triennium 2010-13.

The theme of the three-day ISTA Seed Symposium was "Application and Improvement of Established and Advanced Technologies in Seed Testing." In his keynote presentation entitled "Technologies for Increased Crop Yield," lead speaker and chair of the first session, Dr. Pramod K. Agrawal (Prasha Agri-Consultants, New Delhi, India), described several innovative seed technologies that have the potential to address the need for increased crop production. An underlying theme in many presentations during the Congress was the essential role seeds will play as the growing world population increasingly looks to agriculture to supply its food and energy needs.

At the Ordinary Meeting on June 22, Ms. Maxon served as the voting delegate on behalf of the Agricultural Marketing Service, which is the U.S. Designated Authority for ISTA. Of the 73 ISTA member countries, 40 were represented by Designated Members entitled to vote at the Ordinary Meeting, exceeding the required quorum of 29.

Decisions of the Ordinary Meeting include:

- ISTA annual membership fees were held at the same level for 2011.
- The ISTA Constitution was amended to reduce the time allowed--from more than two years to one year--until withdrawal of membership due to non-payment of membership fees.
- Rule change proposals were adopted, which will take effect January 1, 2011.
- The ISTA Strategy for 2010-2013 was adopted with minor changes after discussion by the members.

Next year's ISTA Annual Meeting will be held in Tsukuba, Japan, June 13-16, 2011.
For more information, contact Susan Maxon at (704) 810-8877; susan.maxon@ams.usda.gov.

AMERICAN SEED TRADE ASSOCIATION ANNUAL MEETING

The American Seed Trade Association (ASTA) held their annual meeting in San Antonio, TX, June 26-30, 2010. Seed Regulatory and Testing Branch (SRTB) Chief Richard Payne, Ph.D., and U.S. Organization for Economic Cooperation and Development (OECD) Seed Schemes Program Manager Perry Bohn participated.

Dr. Payne gave a presentation to the ASTA Vegetable and Flower Division about labeling vegetable seed for compliance with the Federal Seed Act with an emphasis on internet sales. He also spoke to the ASTA Legislative & Legal Concerns Committee on efforts to revise the FSA regulations and on details of the proposed revisions.

Mr. Bohn gave a presentation to the ASTA Seed Industry Relations Committee providing updated information on recent OECD Seed Schemes and current SRTB activities. While in Texas, Mr. Bohn also traveled to the city of Giddings to conduct a routine program review of the Texas Department of Agriculture's seed certification activities related to their participation in the OECD Seed Schemes.

For more details regarding this year's meeting or for more information regarding this article, contact Branch Chief Richard Payne, Ph.D., at (704) 810-8884; richard.payne@ams.usda.gov or U.S. OECD Seed Schemes Program Manager Perry Bohn at (704) 810-7262; perry.bohn@ams.usda.gov.

ASSOCIATION OF AMERICAN SEED CONTROL OFFICIALS ANNUAL MEETING

Seed Regulatory and Testing Branch (SRTB) Chief Richard Payne, Ph.D., participated in the 24th Annual Meeting of the Association of American Seed Control Officials (AASCO), July 26-29, 2010, hosted by the Oregon Department of Agriculture in Portland, OR. Representatives of 13 State seed control programs, the Canadian Food Inspection Agency (CFIA) Seed Section, Agricultural Marketing Service (AMS, USDA), allied organizations, and seed companies attended the meeting.

Dr. Payne presented "Variety Testing and the Federal Seed Act" at the general session and gave an account of the 2009 Federal Seed Act (FSA) activities to both the general session and to the Western Association of Seed Control Officials. The Association of Seed Control Officials

of the Northeastern States, the North Central Seed Control Officials Association, and the Southern Seed Control Officials Association conducted a joint regional meeting. SRTB Seed Marketing Specialists and State seed regulatory officials who were unable to attend the joint meeting in person participated by conference call.

Presentations in the general sessions included "Total Viability" by Anita Hall (Association of Official Seed Analysts and Society of Commercial Seed Technologists), "Pre-Variety Germplasm and Certification" by Victor Shaul (WA), "AOSA Rules for Seed Law Enforcement to Maintain Orderly Seed Markets" by Mike Stahr (Iowa State University), "OSU Seed Services – An Overview" by Dan Curry (Oregon State University), and "Labeling Coated and Treated Seed" by Brenda Ball (AZ). Presentations by seed industry representatives included "Seed Product Stewardship" by Chris Holdgreve (Dow AgroScience), and "Glyphosate-Resistant Turf Varieties" by Doug Brede (Jacklin Seeds).

Other discussions included:

- 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."
- A procedure for officially approving individuals to provide AASCO-sponsored seed sampler training.
- A procedure to make funds available from AASCO to support the attendance of seed control officials at the annual meeting.
- A proposal from New Hampshire Department of Agriculture, Markets & Food to amend the Recommended Uniform State Seed Law (RUSSL) by including a definition for "genetically modified seed" and a requirement to label such seed with the words "contains genetically modified seeds." The RUSSL Review Committee decided not to forward the proposed amendment to the membership for a vote.

Meeting attendees visited a number of grass seed production, conditioning, and research facilities in the Willamette Valley of Oregon.

The following announcements were made:

- The 25th annual meeting will be held July 2011 in Madison, WI; tentative dates for the meeting are being discussed.
- David Buckingham, former Coordinator of the Kentucky Seed regulatory Program, was awarded AASCO Honorary Membership.
- 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)

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

For information regarding this article, please contact SRTB Branch Chief Richard Payne, Ph.D., or (704) 810-888; richard.payne@ams.usda.gov.

AMERICAN PHYTOPATHOLOGICAL SOCIETY ANNUAL MEETING

Seed Regulatory and Testing Branch Plant Pathologist Sandra Walker attended the annual meeting of the American Phytopathological Society (APS) in Charlotte, NC, August 7-11, 2010. As a member of the APS Seed Pathology Committee, Ms. Walker also participated in their meeting on August 7. Much information was shared through symposiums and discussions throughout the week; some highlights follow.

The International Seed Federation (ISF)-APS joint undertaking to provide differential host sets for certain pathogen and crop combinations is closer to implementation. For more information, visit the ISF Web site section on pathogen coding at www.worldseed.org/isf/pathogen_coding.html. The USDA National Plant Germplasm System (www.ars-grin.gov) will maintain and distribute the susceptible and resistant plant lines. Reference cultures will be available from major culture-collection organizations and may require a permit from the USDA Animal and Plant Health Inspection Service (APHIS).

The 10th I.E. Melhus Graduate Student Symposium, "Seed Pathology–Epidemiology, Management, and Phytosanitary Concerns," was sponsored by the Seed Pathology Committee. Four graduate students presented papers related to seed-borne diseases, primarily bacterial fruit-blotch of watermelon.

In a symposium on the timely issue of human pathogens in fresh produce, Ric Dunkle, of American Seed Trade Association, spoke about seed industry efforts to ensure that seeds are not infested with human pathogens. Leanne Skelton, of the USDA Agricultural Marketing Service Fruit and Vegetable Program, who is currently on loan to the Food and Drug Administration (FDA) Food Safety working group, spoke about the mission of this group to create rules and regulations governing human pathogens in the food chain (www.FoodSafetyWorkingGroup.gov). The APS Food Safety Interest Group is working with other scientific societies on cooperative programs.

For more information about this article, contact Plant Pathologist Sandra Walker at (704) 810-7268; Sandra.Walker@ams.usda.gov.

ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES ANNUAL MEETING

The Association of Official Seed Certifying Agencies (AOSCA) held its 92nd Annual Meeting on August 8-11, 2010, in Niagara Falls, NY. AOSCA is an organization consisting of over 48 agencies from North and South America, Australia, and New Zealand. Their mission is "to promote and facilitate the movement of seed or plant products in local, national, and international markets through the coordinated efforts of official seed certification agencies acting to evaluate, document and verify that a seed or plant product meets certain accepted standards."

Perry Bohn, the U.S. OECD Program Manager, representing the Seed Regulatory and Testing Branch (SRTB) at the meeting, gave presentations to encourage uniformity of OECD implementation and reviewed ongoing SRTB activities. Twenty-six individuals from four countries attended the training on U.S. OECD procedures. Mr. Bohn also gave a presentation covering recent SRTB activities to the AOSCA Advisory Committee. He proposed a new grow-out testing service that could be offered by SRTB for those seed certifying agencies which do not have the capacity or structure to conduct the tests.

Some items of general interest follow:

- The Canadian Food Inspection Agency (CFIA) representative covered several items under consideration by CFIA including a regulatory change to allow for field blending of an insect-tolerant and non-tolerant refuge wheat variety to be considered for sale as a variety, development of a cost-recovery system for services, and plans to consider authorization of private entities to do some certification activities.
- The Corn Committee recommended allowing border row reduction from two to one on fields of less than 20 acres.
- The Small Grains Committee encouraged companies that are signing trait agreements with each State to implement a uniform contract for quality traits in order to standardize production where possible.
- The 2011 annual meeting is scheduled for July 24-27, in St. Louis, MO.

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

SEED ANALYST TRAINING PROVIDED IN 2010

The Seed Regulatory and Testing Branch (SRTB) held a three-day seed identification and purity training session on May 10-12, 2010, in Gastonia, NC, followed by a two-day variety and seed health testing session. The nine participants in the first session and five participants in the second represented both private and State laboratories. The seed identification and purity workshop focused primarily on purity and identification of crop and weed species, with emphasis on seed terminology and characteristics of seed structures. Other topics included a uniform blowing procedure demonstration and hands-on ryegrass fluorescence test training that included calculation procedures.

SRTB held another seed identification and purity training session on August 16-18 in Gastonia, NC. The four participants came from both seed company and State seed testing laboratories. Additionally, SRTB held a seed identification training session via conference call with the Texas Department of Agriculture Seed Laboratory at Giddings, TX, using a PowerPoint presentation sent by e-mail. This arrangement for presenting training resulted in a significant savings in travel costs.

SRTB conducts this training in order to promote uniformity in seed testing, thereby improving compliance with labeling provisions of State and Federal seed laws.

For more information about this article, please contact Botanist Pattsy Jackson at (704) 810-8881; pattsy.jackson@ams.usda.gov.

SEED INSPECTOR/SAMPLER TRAINING

Seed Regulatory and Testing Branch (SRTB) Chief Richard Payne, Ph.D., and Seed Marketing Specialist Roger Burton conducted two seed inspector/sampler training sessions with State seed inspectors, one with Colorado personnel and one with New York personnel.

The training sessions were conducted via teleconference using Power-Point presentations. This method of long distance training resulted in significant savings in travel costs and allowed the seed inspectors to continue their normal workday activities at the end of the training session.

The Colorado training session took place on April 20, 2010, and lasted approximately two hours. Eleven State Department of Agriculture personnel participated.

The topics included:

- Federal Seed Act (FSA): How It Works;
- FSA enforcement;
- USDA Seed Analysis Certificate (SAC) Sampling Guidelines;
- Sampler safety;
- Sampling principles, documentation, and problems;
- Proper selection and use of seed sampling triers; and
- American Association of Seed Control Officials (AASCO), Association of Official Seed Analysts (AOSA), Federal Seed Act (FSA), and the International Seed Testing Association (ISTA) sampling intensity requirements.

The New York training session took place on May 18, 2010, and lasted approximately three hours. Twenty State Department of Agriculture personnel participated.

The topics included:

- Federal Seed Act: How It Works;
- FSA enforcement;
- Sampler safety;
- Sampling principles, documentation, and problems;
- Proper selection and use of seed sampling triers;
- Proper calibration and use of automatic sampling equipment;
- Proper selection and use of dividers and dividing techniques;
- Planning and execution of sampling;
- AASCO, AOSA, and FSA sampling intensity requirements;
- Sampling containers, mini bulk containers, and bulk seed;
- Proper handling, storage, and shipping of samples for testing; and
- Seed inspector identification of obvious labeling violations.

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

VISUAL IDENTIFICATION OF SEEDS OF FIVE SPECIES OF *BRASSICA* AND ONE SPECIES OF *SINAPIS*

Brassica and *Sinapis* are genera of the Brassicaceae or "Mustard Family". This large family includes 380 genera and about 3,900 species and is known for plants that produce oils with a sharp or peppery taste. Cruciferous vegetables, mustards, rapes, and several weedy species are the most well-known members of the family, and although none are poisonous, some are considered noxious weeds in certain states.

Several factors make identification of the seeds challenging: 1.) vegetables in this group may be very closely related and therefore have very similar seeds (e.g., cabbage, collards, broccoli, cauliflower, kale, and Brussels sprouts are all merely different varieties of the species *Brassica oleracea*); 2.) *Brassica* varieties are known to cross, producing seeds with intermediate characteristics; 3.) characteristics of immature seeds are not always clear-cut; the seeds may differ in color and texture from more mature seeds; 4.) environmental conditions may affect seed appearance; and 5.) seed-conditioning may alter the seed coat by removing surface texture, important for differentiation. Despite these challenges, the seed analyst, with a little patience and practice, can usually identify seeds in the Brassicaceae Family at least to the species level.

Surface characteristics (see definitions and drawings below) of the seeds are very important in Brassicaceae identification and require a microscope with a magnification of at least 40 X. However, it may be surprisingly helpful to view seeds with the naked eye, and then again with low magnification (10 – 20 X), before moving to the higher power. Because over-all size, shape, color, and texture are visible at low magnification, it is usually possible to narrow down the choices during this step. Also, the analyst may find contaminants more easily at low magnification than at a high power where the over-all characteristics may be lost. Observe the texture, size, and color differences between the six seeds in the photo below (fig. 1), taken at a magnification of 20 X.

Definitions - Surface Characteristics:
Reticulum - a network of lines or ridges over the seed surface
Interspaces - areas, often polygonal, created by the reticulum (View an area away from the hilum or the end of the seed opposite the hilum, for more representative interspaces.)
Stipples - microscopic pits on the surface of the seed (Note that a mucilaginous substance is often produced by seeds of the Brassicaceae Family, giving them a waxy or oily appearance and sometimes obscuring the stipples, particularly when available magnification is inadequate.)

Drawings by Regina O. Hughes, USDA

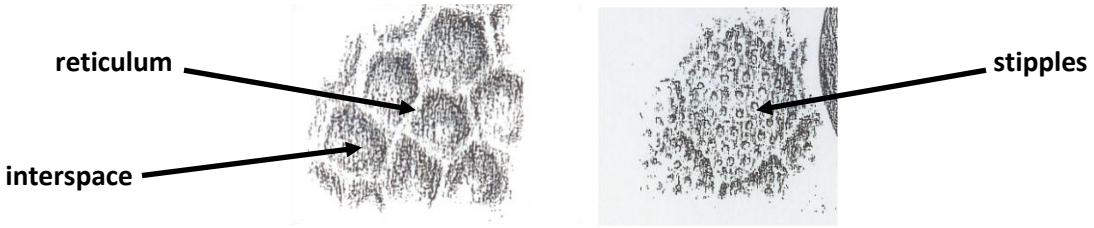

Photo by Sandy Dawson, USDA, AMS, 2007

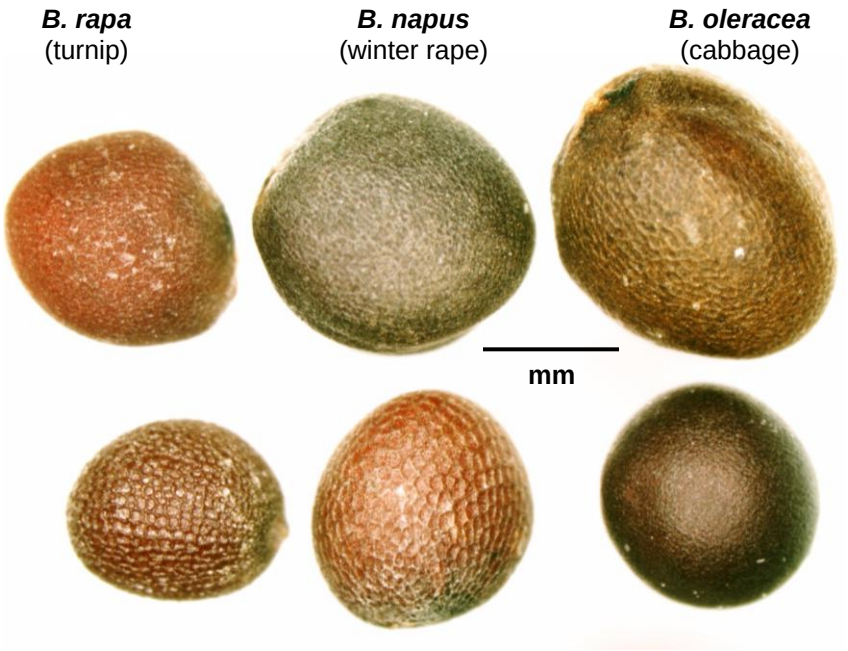

FIGURE 1—Photo (20X) of Brassicaceae seeds demonstrating the value of examination at low or intermediate magnification. Note the differences in texture, size and color.

Brassica oleracea (fig. 2) is the species that contains the cruciferous vegetables: collards, cabbage, broccoli, cauliflower, kale, and Brussels sprouts. The seeds are 1.5 to 3 mm in length, with color ranging from bronze, brown or grayish-black to reddish. Surface characteristics include a fine, narrow reticulum that sometimes display a waxy appearance. The interspaces formed by the reticulum are very small in comparison to other *Brassica* species, with very small stipples that are more often visible in the interspaces than on the reticulum.

Drawings by Regina O. Hughes, USDA

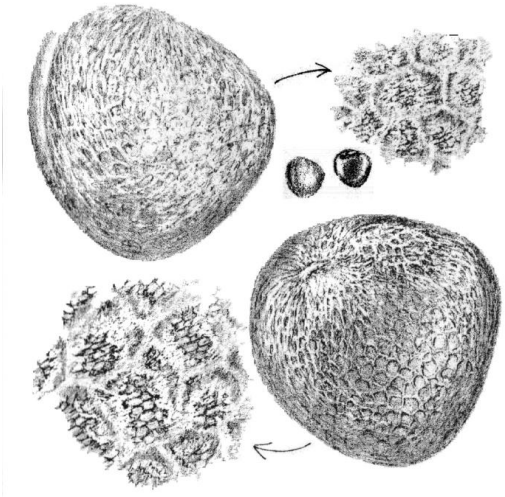

Photo by Sandy Dawson, USDA, AMS, 2007

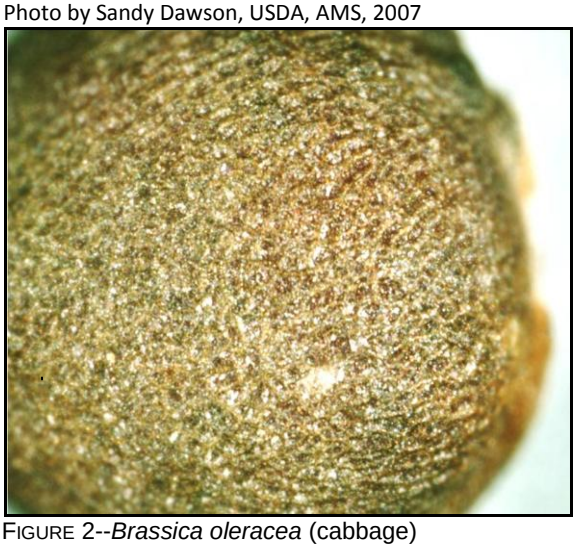

FIGURE 2--*Brassica oleracea* (cabbage)

Brassica napus (fig. 3) includes the varieties annual rape, winter rape, Siberian kale, and rutabaga. The seeds of this species are very similar to that of *Brassica oleracea* but tend to be more spherical, and although the color is sometimes reddish or reddish-brown, it is often gray or grayish-black. The reticulum is fine like that of *Brassica oleracea,* but is relatively flat and sometimes indistinct, giving the seed an overall smooth appearance. When not oily, the flat reticulum often gives the seed a whitish color. The stipples are small, round, and tend to equally blanket the interspaces and reticulum.

Drawings by Regina O. Hughes, USDA

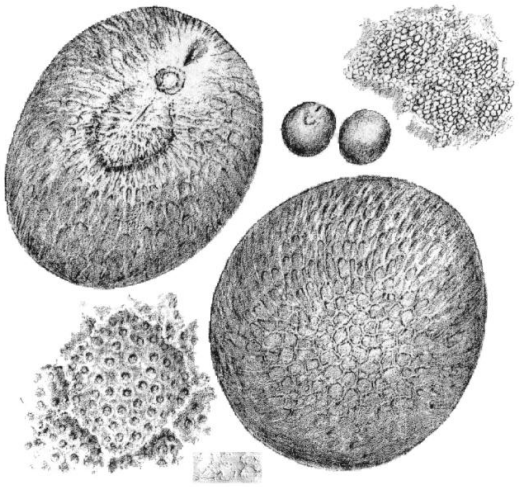

Photo by Sandy Dawson, USDA, AMS, 2007

FIGURE 3--*Brassica napus* (winter rape)

Brassica rapa (fig. 4) (turnip, turnip rape, pak-choi, Chinese cabbage, field mustard) seeds are less than 2 mm in size and are usually smaller than *B. oleracea* and *B. napus,* which range from about 1.5 to 3 mm. They are often reddish or reddish-brown, but some may be grayish-black. The reticulum is distinctive when compared to the previous two species as it consists of coarse, distinct ridges. Interspaces are usually small; stipples are small, shiny, and roundish and may cover the entire seed surface.

Drawings by Regina O. Hughes, USDA

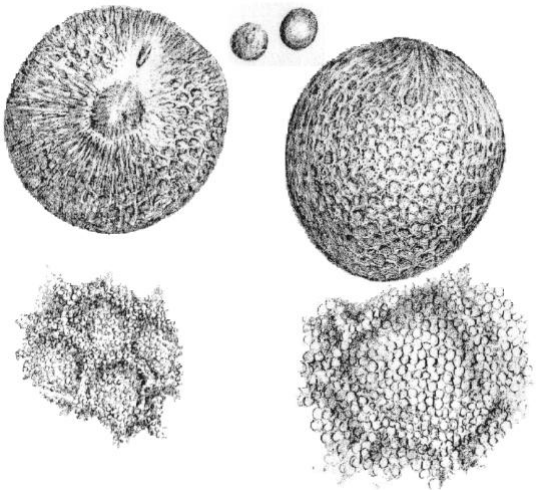

Photo by Sandy Dawson, USDA, AMS, 2007

FIGURE 4--*Brassica rapa* (turnip)

Brassica juncea (fig. 5) or India mustard and **Brassica niger** (fig. 6) or black mustard appear very similar at first, with seeds of both species less than 2 mm in diameter, and reddish-brown to brown or orange in color. Upon closer inspection, however, differences become fairly obvious. Although sometimes slightly flattened, *B juncea* is more spherical than *B. niger,* which is broadly oval or oblong. The textures of the two species are also distinguishable, with the reticulum of *B. juncea* composed of fine distinct lines forming large, shallow, usually flat-bottomed interspaces, in contrast to the reticulum of *B. niger,* which is made up of thick prominent ridges outlining deep, concave and glossy interspaces. The stipples of *B. juncea* are small, distinct and may cover the entire seed surface; stipples of *B. niger* are very small, partially or completely obscured, and may not be visible on the reticulum. *B. juncea* may also look similar to *B. rapa* but can normally be differentiated by the large size of its interspaces and its coarse reticulum. Compare *B. juncea, B. niger*, and *B. rapa* at 20 X, Fig AA.

Drawings by Regina O. Hughes, USDA

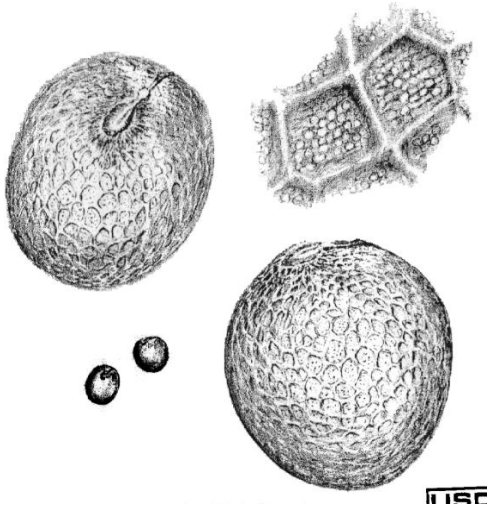

Photo by Sandy Dawson, USDA, AMS, 2007

FIGURE 5--*Brassica juncea* (India mustard)

Drawings by Regina O. Hughes, USDA

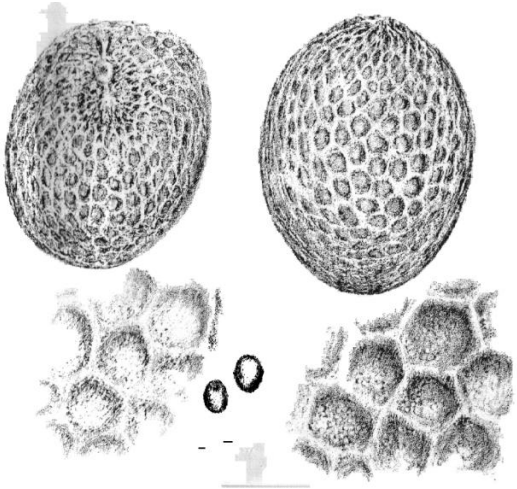

Photo by Sandy Dawson, USDA, AMS, 2007

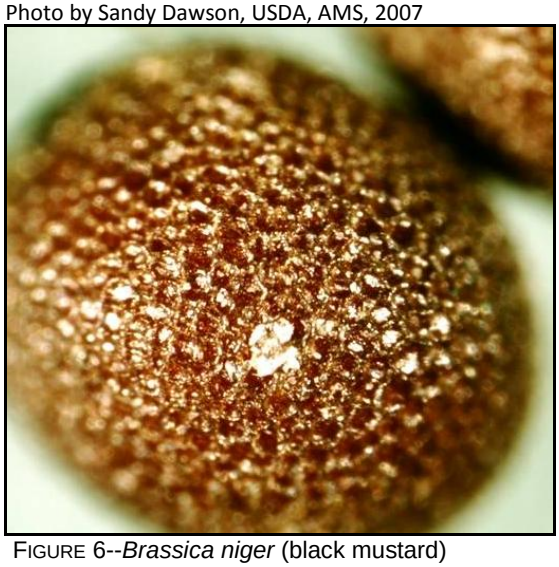

FIGURE 6--*Brassica niger* (black mustard)

Sinapis arvensis *(*fig. 7) (charlock, field mustard, wild mustard, wild turnip) is a common weed in agricultural and horticultural crops that is found in all areas of the United States and most of Canada. A single plant can produce 1200 seeds that have the ability to remain dormant in the soil for many years before germinating. Seeds are less than 2 mm in diameter, spherical (roll easily), and normally black, although reddish, probably immature seeds are sometimes seen. *S. arvensis* has a very fine, indistinct reticulum that creates very small interspaces and an overall smooth or velvety look. The reticulum and stipples are visible only at high magnifications.

Drawings by Regina O. Hughes, USDA

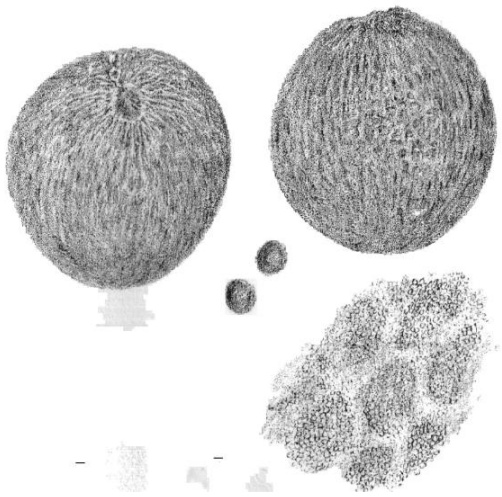

Photo by Sandy Dawson, USDA, AMS, 2007

FIGURE 7--*Sinapis arvensis* (charlock)

There are variations in characteristics among different varieties within a single species of *Brassica*. For example, although *B. oleracea* seeds have the same general characteristics, cabbage seeds are often bronze in color and somewhat triangular and flattened in shape, whereas broccoli seeds tend to be more spherical and are often brown to reddish or even sometimes grayish in color. The differences among varieties of the same species are often slight and not usually consistent. Seed Regulatory and Testing Branch analysts generally visually identify *Brassica* seeds only to the species level when performing purity tests.

Due to multiple challenges and the fact that there is an overlap of physical characteristics among the species, it is important to use as many characteristics and techniques as possible when identifying these seeds. The seed analyst may be able to visually identify *Brassica* seeds by variety when they are in bulk, but may not be able to identify a single seed by variety, with certainty. However, with a little experience and patience, an analyst can distinguish most seeds of the *Brassica* and *Sinapis* genera to the species level with confidence.

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DISTINGUISHING QUACKGRASS AND TWO WHEATGRASSES

Quackgrass (*Elytrigia repens*) is a weedy grass species that is considered noxious in many States. Unfortunately, quackgrass seeds are very similar in color, overall shape, and size compared to two wheatgrass species: western wheatgrass (*Pascopyrum smithii*) and slender wheatgrass (*Elymus trachycaulus* subsp. *trachycaulus*). The analyst must therefore pay close attention to the differences in palea, lemma, and rachilla characteristics in order to correctly identify these species.

The sinus area in grass seeds, located at the base of the rachilla between the margins of the lemma, is generally U or V-shaped. Western and slender wheatgrasses both have a V-shaped sinus, while quackgrass has a U-shaped sinus (Fig. 8 and 9). The sinus shape also tends to coincide with the shape of the rachilla. Western and slender wheatgrasses have V-shaped rachillas as well, with the sides of the western wheatgrass rachilla being strongly divergent, and the slender wheatgrass rachilla sides only slightly divergent. The quackgrass rachilla has parallel sides.

Photo by Todd Erickson, USDA, AMS, 2007

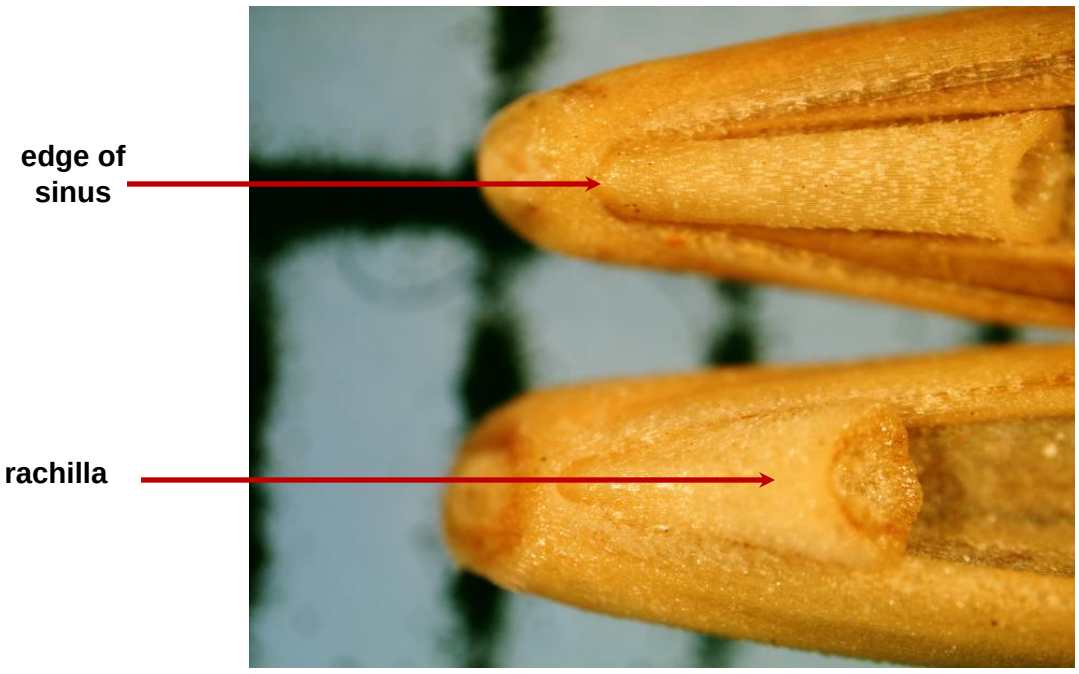

FIGURE 8--Quackgrass (top) with U-shaped sinus and parallel-sided rachilla, and western wheatgrass (bottom) with V-shaped sinus and strongly divergent sides of rachilla.

Drawings by Helen Henry, USDA, 1927

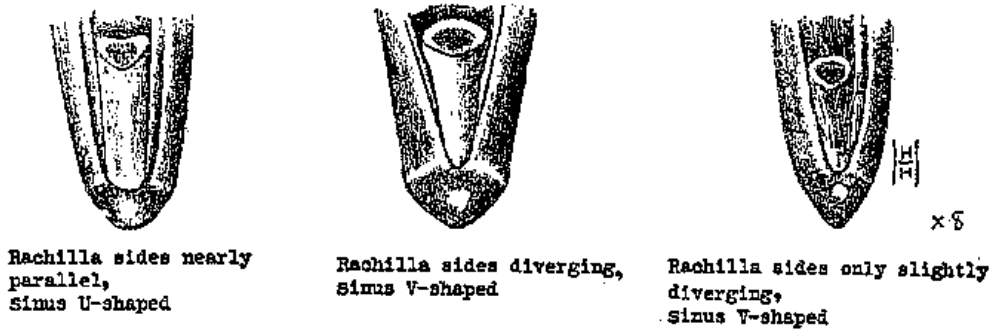

FIGURE 9.--From left to right: Quackgrass, western wheatgrass, slender wheatgrass

The rachillas of these species also differ in their position relative to the palea and in their hair-type. The quackgrass rachilla lies flat against the palea, while the western and slender wheatgrass rachillas are not appressed to the palea (Fig. 10). The hairs on western wheatgrass rachillas are hirsute, while quackgrass is glabrous. Slender wheatgrass rachillas have distinctive villous hairs (Fig. 11), which are a useful characteristic in distinguishing it from the other two species.

Drawings by Helen Henry, USDA, 1927

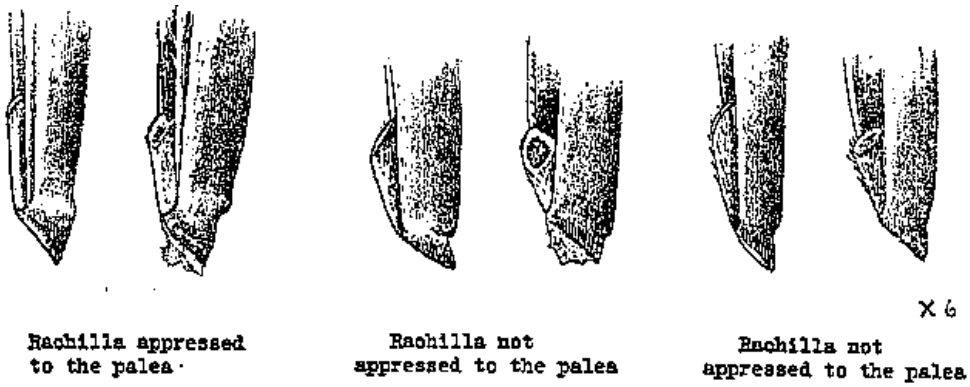

FIGURE 10. -- Palea position. From left to right: quackgrass, western wheatgrass, slender wheatgrass

Photo by Todd Erickson, USDA, AMS, 2007

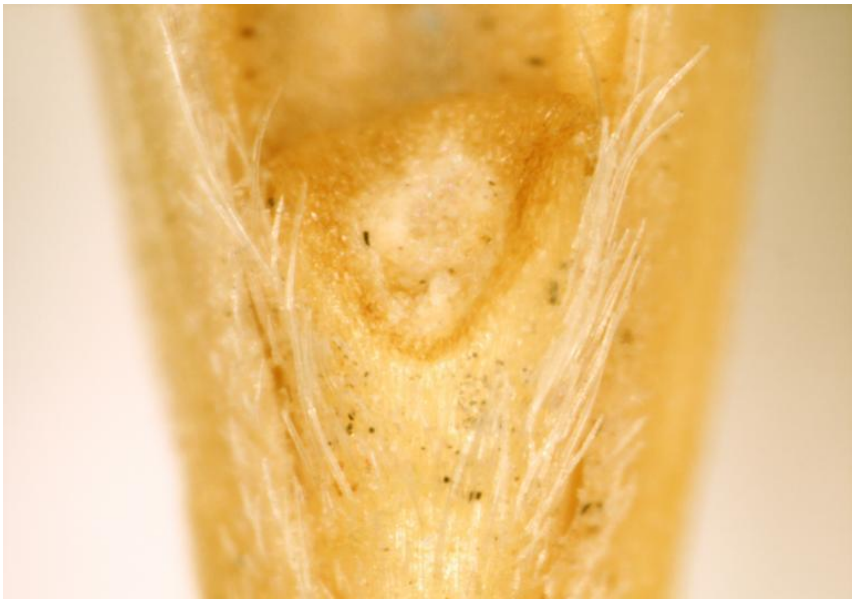

FIGURE 11--Villous hairs on slender wheatgrass rachilla

The paleas of these species exhibit different characteristics both on the surface and in the hairs along the keels. Quackgrass tends to have a raised longitudinal line or wrinkle along the lower half of the palea (Fig. 12). In contrast, western wheatgrass has a deep groove along the lower half of the palea, and the entire surface of the palea is hirsute (Fig. 13). The slender wheatgrass palea is glabrous and lustrous. The hairs along the keels of slender wheatgrass are fine, close-spaced and acute. Quackgrass keel hairs are more stout and widespread, while western wheatgrass keel hairs are also widespread and even longer than those of quackgrass (Fig. 14).

Photo by Todd Erickson, USDA, AMS, 2007

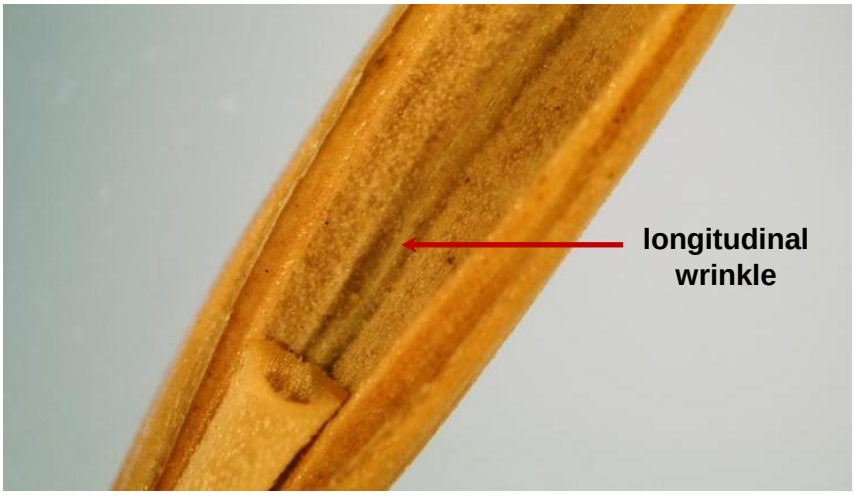

FIGURE 12--Longitudinal wrinkle on palea of quackgrass

Photo by Todd Erickson, USDA, AMS, 2007

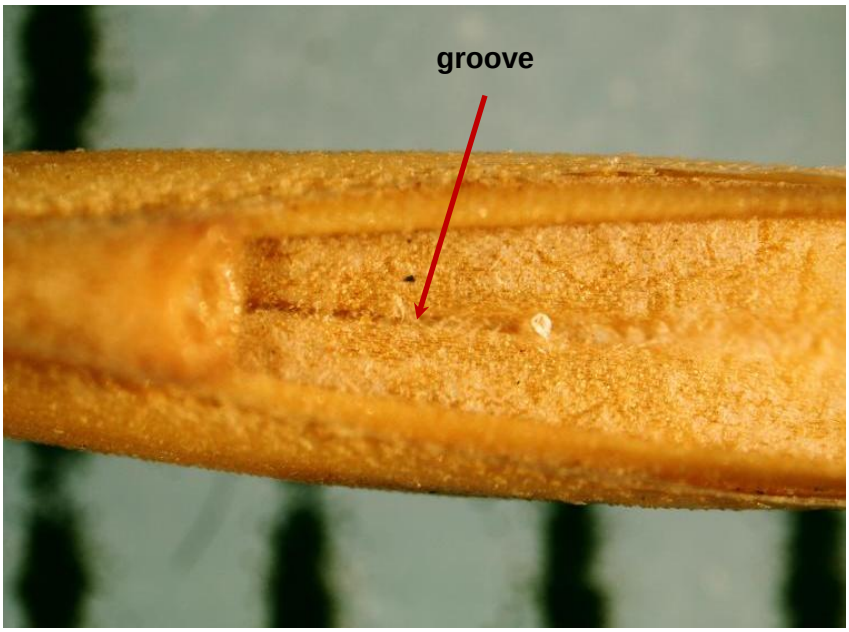

FIGURE 13—Hirsute palea of western wheatgrass with groove on lower half

Drawings by Helen Henry, USDA, 1927

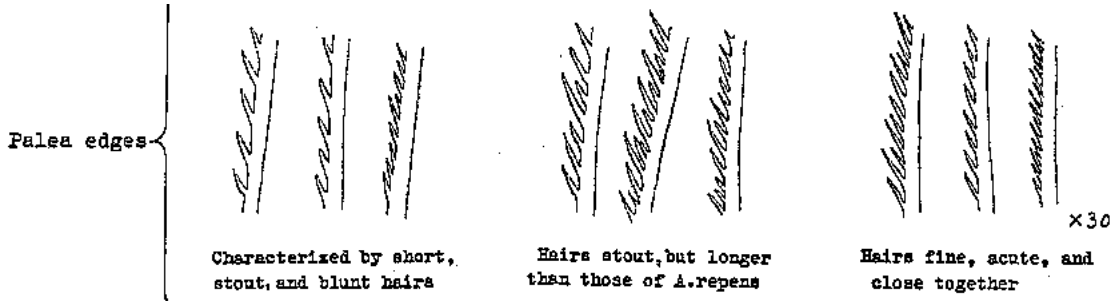

FIGURE 14--Hairs on palea keel, from left to right: quackgrass, western wheatgrass, slender wheatgrass

The callus area at the base of the seeds differs in both shape (Fig. 15) and pattern of hairs (Fig. 16). When viewed from the side, quackgrass seeds have a prominent bulge just above the callus, while slender wheatgrass seeds have a much smaller bulge. Western wheatgrass, instead of a bulge, has a sharp indentation or notch right at the start of the callus area. When viewed from the lemma side, the callus of slender wheatgrass has hairs continuous across its surface, while the western wheatgrass callus has hairs only at the outer edges. The quackgrass callus is hairless.

Drawings by Helen Henry, USDA, 1927

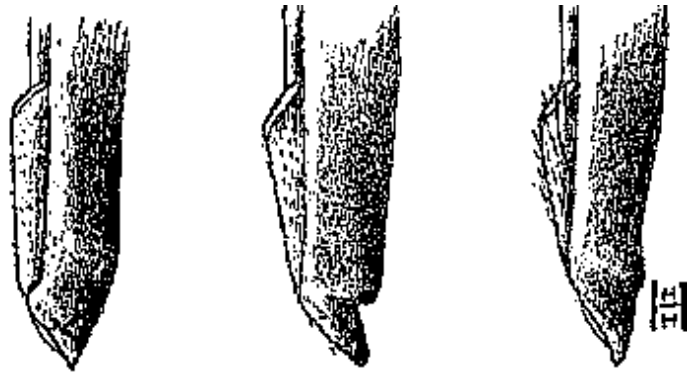

FIGURE 15--Side view of callus area, from left to right: quackgrass, western wheatgrass, slender wheatgrass

Drawings by Helen Henry, USDA, 1927

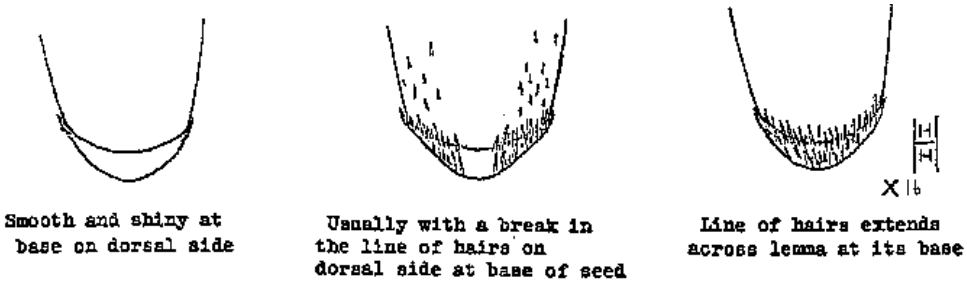

FIGURE 16--Hairs on callus, from left to right: quackgrass, western wheatgrass, slender wheatgrass

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DIFFERENTIATING ANNUAL AND PERENNIAL RYEGRASS VARIETIES BY ELECTROPHORESIS

The seeds of annual ryegrass (*Lolium multiflorum* Lam.) and perennial ryegrass (*Lolium perenne* L.) are virtually impossible to identify visually in a purity test due to the similarity of physical characteristics. The Federal Seed Act (FSA) Regulations and the Association of Official Seed Analysts (AOSA) Rules (2009) recognize a method to determine the percentages of annual vs. perennial ryegrass seeds based on seedling root fluorescence under ultraviolet light. A grow-out test can provide additional verification. The seedling root-fluorescence test, however, can be inaccurate which has led to the identification of genetic markers for the two species through molecular biology studies. To improve upon these existing methods, Seed Regulatory and Testing Branch (SRTB) Plant Physiologist, Dr. Yujia Wu, has developed a rapid and simple method using iso-electric focusing (IEF) protein separation technology.

Seven annual, seven perennial, and two intermediate ryegrass seed samples, each representing a different variety as identified by trueness-to-variety testing, were collected as samples. The seeds were cultivated in soil for two weeks in a greenhouse. Leaves were then harvested, by sample, and stored at -70°C until processing. Vertical isoelectric focusing (IEF), pH 5-8, protein gels were used to separate leaf proteins in each sample. The samples were prepared by a one-step protein extraction method of grinding 0.25 g of leaf tissue in 250 µl of extraction buffer (75 mM Tris pH 7.5 and 0.1% β-mercaptoethanol), and then centrifuging at 10,000 rpm for 10 min at 4°C. Vertical pH 5-8 IEF gels were loaded with 10 µl supernatants and run at 100V for 60 minutes, 250V for 60 minutes, and 500 V for 30 minutes. After running, the gels were stained for 30 minutes in a solution to detect esterase isozymes.

The IEF gels exhibit significant differences in banding-patterns among the annual, perennial, and intermediate ryegrass varieties (Fig. 17). The annual ryegrass samples (1-7) each show distinct differences in banding-patterns among varieties, whereas the perennial ryegrass samples (10 - 16) appear to have a more uniform banding-pattern among varieties. Bands in the two intermediate samples differ from one another, and may be due to a cross of perennial and annual parents. It is easy to distinguish individual varieties by their esterase in annual ryegrass samples, but difficult to see differences among the varieties of the perennial ryegrass samples. Bands a, b, and c are heavily expressed in each variety of perennial ryegrass, but only slightly expressed in some varieties of annual ryegrass.

IEF gel electrophoresis has potential as an additional method of annual and perennial ryegrass identification in support of the current fluorescence-root test. This method will be investigated further using other samples.

Photo by Dr. Yujia Wu, AMS, USDA, July 2010

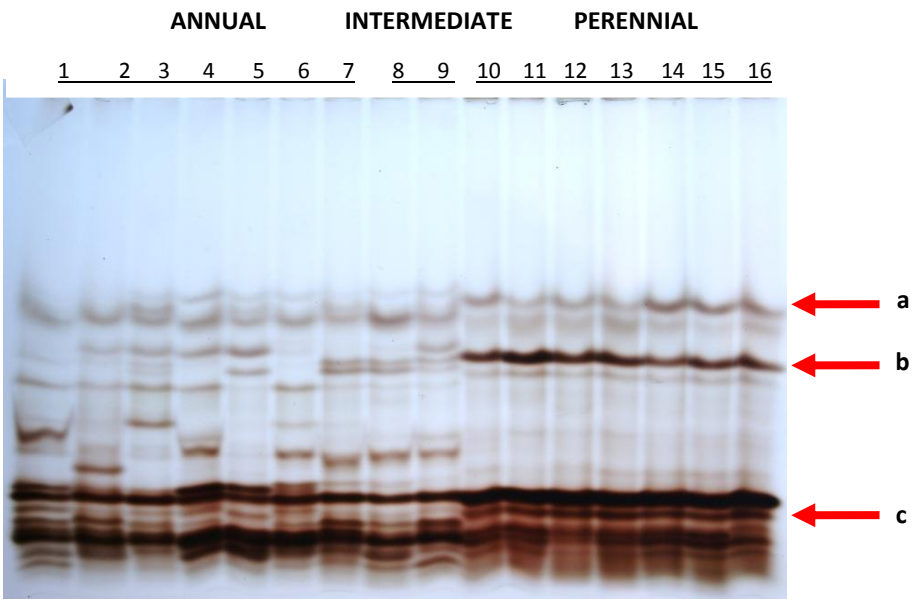

FIGURE 17—IEF gel showing different banding patterns in varieties of annual, perennial, and intermediate ryegrass.

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SEED SEGMENTS By Jerry Irwin

A VIRTUAL JOURNEY TO ARKANSAS

The Seed Segments reporter continues on a virtual tour through the States to scenic Arkansas to learn more about the seed program there. Mary Smith, Seed Division Director of the State Plant Board in Little Rock, AR, provided information about the Arkansas State seed program.

What activities are included in the Seed Division?

The Plant Board Seed Division serves Arkansas farmers, seedsmen, and consumers through its regulatory and service based activities: (1) The enforcement of seed laws and regulations helps protect the consumer from poor quality or mislabeled planting seed and ensures a level operating field for seedsmen; (2) The management of the Seed Certification Program maintains high quality seeds of genetically distinct crop varieties and makes them available to the public; and (3) The operation of an official seed laboratory performs seed analyses for conditioning, labeling, and regulatory information.

What are the main functions of the regulatory program in the Seed Division?

The Seed Division regulatory program's main goal is to protect consumers and ensure quality of planting seed in Arkansas. We regulate the sale of seed by randomly checking

the required labeling as well as testing samples to ensure the labeled components are accurately labeled. By sending advisory letters to labelers when germination results fall a certain point below the labeled germination percent (but still in tolerance), we allow the seedsman an opportunity to monitor and possibly re-label the seed before it falls out of tolerance. Regular updates on the overall seed quality of Arkansas' major crops are sent to growers and seedsmen during the planting season.

The division licenses seedsmen to be able to sell seed produced within or shipped into Arkansas, and also licenses seed-treating plants. This includes providing testing and licensing for operators who wish to treat seed with restricted-use seed treatments. We compile the labeling records of licensed seedsmen, administer civil penalty enforcement procedures as needed, and send letters of recognition to encourage good labeling records.

We work with the Plant Board Seed Committee to address requests from seedsmen and producers and to work on adding or changing regulations to meet the needs of the ever-evolving agricultural crops and practices. We also provide education and awareness of laws and regulations to the agricultural community. Although seed arbitration is a separate law (and not under the seed law), we also handle seed arbitration complaints—by distributing the forms, collecting the information, and having our inspectors conduct investigations and inspections. The first step after receiving a "Notice of Intent to File for Arbitration" is a mediation attempt with both parties appearing before the Plant Board Director. If no resolution results from the mediation, then the complaining party can file an official arbitration case. The Seed Arbitration Committee is separate from the Plant Board, but the Plant Board Director serves as the non-voting secretary of the committee.

What are some of the more extraordinary duties that the Seed Division has dealt with?

Arkansas produces about half of all the rice grown in the United States and is the major exporter of long-grain rice. In 2006, when trace amounts of an unapproved genetically modified Liberty Link™ (LL) rice was found in the U.S. rice supply, the rice seed industry and regulators initiated a plan (and regulations) for rice seed to be tested for LL contamination before it was planted. Since that time, all rice seed lots in Arkansas—certified, non-certified, farmer-saved, and seed moving into Arkansas from other States—have had to be sampled and sent to genetic testing laboratories to determine if they are negative for the LL trait. Seed lots represented by samples that are negative are then issued a "validation report" and the seedsman provides this to the farmer when rice seed is purchased. The farmer will then have the documentation needed for the mills when the grain is harvested. This plan has been successful in ridding our State and rice-growing mid-south region of this contamination and has, just this year, been effective in re-opening the European Union markets to U.S. rice. The Seed Division and Plant Industry Division work together on carrying out these duties. Plant Board inspectors work to provide the required sampling. The Seed Division certification staff, long accustomed to maintaining records of traceability, has the duty of compiling and maintaining the required documentation and issuing the validation reports. These are on-going extraordinary duties the Seed Division must deal with.

What unique challenges does the Seed Division face?

Perhaps not unique, but the challenges we face include funding, aging equipment, and a seed analyst workforce almost ready to retire! Since we are 100% funded by fees, it is difficult to raise fees often enough to be on the "cutting edge" of seed technology. Seed analysis requires patient, perceptive people willing to pay enormous attention to detail – a quality not easily found. Even when found, it takes years for seed analysts to be completely trained. In the next few years, having enough analysts to complete the testing needed may be our biggest problem.

Tell me about the inspectors. Do they sample other commodities as well as seed?

Our inspectors (approximately 30, including 4 inspector supervisors) work for all divisions of the Plant Board and live in their assigned areas throughout the State. Depending on the area of the State they work in, there may be more activities for one division than another. The inspectors not only take regulatory seed samples, inspect fields, and sample for our seed certification and quality assurance programs; they also sample feed and fertilizer, pesticides, do nursery inspections, survey and quarantine inspections, and investigate all kinds of complaints (to name a few of their activities). Generally, the number of seed complaints is small compared to the pesticide or herbicide drift complaints that start erupting beginning in the spring of each year.

How do you communicate with the inspectors who work remotely?

All of our inspectors have cell phones and digital cameras. We use cell phones as the primary method of communication, especially if we need to contact them while they are in the field. They also have laptop computers and we send information via e-mail. Each division also sends a weekly update listing the stop-sales received from all inspectors or stop-sales issued from the office, so they can be aware of and check their areas for those seed lots. We have an annual training session with all the inspectors so each division can go over training information and communicate with them as a group. We also use that time as an opportunity to update their seed division inspector manuals. With all the varied work inspectors must do for each division, reminders of procedures and communication with inspectors must be an on-going process.

How does the Seed Division benefit from the cooperative agreement between the Arkansas State Plant Board and the Agricultural Marketing Service?

I have greatly benefited from the expertise and activities conducted by the AMS Seed Branch. Dr. Payne and all the marketing specialists are always very helpful when I have questions or have problems with seed shipped in interstate commerce. We always try to participate in the trueness-to-variety testing program. This is an especially helpful program, since variety separation is difficult with the large numbers of varieties available in the marketplace today. Also, our State seed regulations do not cover small packets (less than 25-pound containers) of vegetable seed, so we forward complaints from consumers involving vegetable seed to the Federal Seed Branch. I also appreciate the training opportunities provided and the educational material available for seed analysts. The Seed Branch has been very responsive to my needs over the years!

I have always known you to be very active in seed organizations. You are a past president of the Association of American Seed Control Officials, served on the Plant Variety Protection Board, and currently serve as secretary/treasurer of the Southern Seed Control Officials Association. How would you encourage new seed professionals to expand their knowledge of seed enforcement, testing, or certification issues?

I would encourage all seed enforcement officials to attend and participate in the regional and national associations of seed control officials. We are a small group, and meetings provide ample opportunity to develop professional relationships that are invaluable in enforcement work. You will find others that deal with the same problems and issues and see how other States or Federal programs have handled various situations. We work together to come up with solutions for new issues and try to be proactive by working with the seed industry on labeling new products. We provide a valuable resource in the Recommended Uniform State Seed Law and have recently published a handbook on seed sampling. Knowing other seed professionals on a first-name basis allows for comfort in asking for advice or help when problems present themselves throughout the year. This also applies to the seed certification (AOSCA) and seed testing (AOSA/SCST) organizations. Take advantage of the cumulative knowledge of seed professionals!

The SRTB thanks Mary Smith for submitting information for the IOI's Seed Segments column.

The Seed Segments reporter has interviewed seed control officials from Arkansas, California, Hawaii, Kentucky, and Pennsylvania in an effort to share differences and similarities of State seed programs. One similarity among States is that inspectors work remotely by using laptop computers and cell phones. Inspectors also sample other commodities in addition to seed. Each State has had its own unique challenges as well, such as preventing established plant pests from moving to other islands in Hawaii, gaining access to farms with the increasing number of direct-to-farm sales in Kentucky, and administering the undesirable grass seeds program in Pennsylvania. Several seed programs are challenged with budget issues and groups of experienced people nearing retirement. Most agree on the importance of education and becoming active in seed organizations to learn and share ideas with fellow seed professionals.

If you are interested in sharing information about your State seed program, contact Seed Marketing Specialist Jerry Irwin at (704) 810-8878; jerry.irwin@ams.usda.gov.

PERSONNEL CHANGES

Seed Regulatory and Testing Branch (SRTB) Laboratory Secretary Susan Haney has retired after 28 years of Federal service. Many outside the Branch knew her as the friendly voice who addressed customer concerns and questions. Her understanding of laboratory workflow and customer needs, along with her dedication and expertise, contributed greatly to the success of our mission.

Information Technology (IT) Specialist Sean Sabo has left SRTB after six years of Federal service. His dedication and knowledge in the field of computer technology were invaluable to SRTB during the successful transition to a new information management system.

We appreciate their dedicated service with SRTB and wish them well in the future.

Matthew Arthen joined the SRTB staff as an IT student intern in July. Matt is a senior at Belmont Abbey College in computer studies and will graduate in May 2011. Matt moved from Columbia, MD, to North Carolina in 2007 to attend school. Matt is looking forward to the opportunity to get some real life experience in the IT world.

For information regarding this article, contact Karen Sussman at (704) 810-7272; karen.sussman@ams.usda.gov.

RYEGRASS FLUORESCENCE LIST

The Association of Official Seed Certifying Agencies (AOSCA) revises the Variety Fluorescence Levels Recognized by the AOSCA National Grass Variety Review Board report 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 National Perennial Ryegrass Variety Fluorescence Report link to view the most current report.

CALENDAR OF EVENTS

Western Seed Association Kansas City, Missouri	November 6-9, 2010
American Seed Trade Association (ASTA) Farm and Lawn Seed Conference Kansas City, Missouri	November 7-8, 2010
Organization for Economic Cooperation and Development (OECD) Seed Schemes Extended Advisory Meeting Paris, France	November 16-19, 2010
American Seed Trade Association (ASTA) Corn & Sorghum Seed Research Conference Soybean Seed Research Conference Chicago, Illinois	December 7-10, 2010
American Seed Trade Association (ASTA) Vegetable & Flower Seed Conference Huntington Beach, CA	January 22-25, 2011
Organization for Economic Cooperation and Development (OECD) Seed Schemes Working Group and Annual Meeting Istanbul, Turkey	May 9-13, 2011
Association of Official Seed Analysts (AOSA) and Society of Commercial Seed Technologists (SCST) Annual Meeting Williamsburg, VA	June 7-10, 2011
International Seed Testing Association (ISTA) Annual Meeting Tsukuba, Japan	June 13-16, 2011
American Seed Trade Association (ASTA) 128th Annual Convention Huntington Beach, CA	June 18-22, 2011
Association of Official Seed Certifying Agencies (AOSCA) Annual Meeting St. Louis, MO	July 24-27, 2011
American Association of Seed Control Officials (AASCO) Annual Meeting Madison, WI	July 2011

For further information regarding the Calendar of Events contact branch Management Analyst Karen Sussman at (704) 810-7272 or by email at karen.sussman@ams.usda.gov.

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Sandra Walker, Plant Pathologist
Gene Wilson, Seed Marketing Specialist
Dr. Yujia Wu, Plant Physiologist

Little Seeds

Little seeds we sow in spring,
Growing while the robins sing,
Give us carrots, peas and beans,
Tomatoes, pumpkins, squash and greens,
And we pick them,
One and all,
Through the summer,
Through the fall.
Winter comes, then spring and then
Little seeds we sow again.

--Else Holmelund Minarik

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