A newsletter for

The Association of Official Seed Analysts
& The Society of Commercial Seed Technologists

2010

AOSA-SCST

Annual Meeting

June 5 - 10, 2010

St. Louis, MO

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Back to the big city! We seem to alternate the size of city in which we hold our annual meetings. Fort Collins is big for me, but small compared to St. Louis. And St. Louis is huge compared to next year’s meeting site (Williamsburg). Each city has something to offer. My wife Julie went with me to Cody and loved the walking, scenery, and small-town shopping. I haven’t been to a major league baseball game since I was 11, but would love to see the Cards in St. Louis.

My “problem” is that to give the ISU Seed Lab its money worth in sending me to St. Louis and because I find virtually everything interesting involved in seed analysis, I attend every committee meeting I can squeeze in. While being at the annual meeting for a week is plenty long, I wish that our committee meetings, workshops, and other meetings wouldn’t overlap. Committee chairperson and members do such a great job working their full-time job and then doing volunteer work for AOSA, SCST, or both. There literally are not enough hours in a working day (or year) to get anywhere every priority (much less lower priority) items done.

Thank you to all of you who chair committees, organize meetings, revise handbooks, submit Rule proposals, give your input through surveys, or attend meetings! I especially appreciate the work of Anita Hall who apparently is capable of doing five things at once. The age of presidents and executive boards doing much of the work themselves is long gone!

I wish that each and every one of you who wants to attend the St. Louis meeting could do so. I value your input and like to see familiar faces and also meet new people. If you can’t “meet me in St. Louis”, please take the time to contact me, Dan, Doug, Brent, or anyone on our respective Boards to voice your opinion or otherwise give us your input on any topic.

This has been far from a boring year! Besides all the changes in testing, there are many hot topics. The AOSA Seed Vigor Handbook had some controversial aspects, but these were ironed out and the finished product is terrific. There is talk of revising Volume 4 of the AOSA Rules (formerly the Seedling Evaluation Handbook) and the SCST Seed Technologist Manual (STTM). If you have an opinion on how the revised Volume 4 should look, please contact the Germination and Dormancy Committee. I have done my best to promote every lab having a STTM. It, along with Miller McDonald’s Seed Technology DVD series, and current versions of the AOSA Rules & Handbooks are must have’s for every lab!

I plan to have another busy summer of attending meetings of our sister organizations (AASCO, AOSCA, ASTA, and ISTA). This summer I also plan to attend the annual meeting of the National Weights & Measures group. It was interesting to attend their mid-year meeting in Nashville and serve as a resource as they consider adopting our mechanical seed count procedure into their system. All major domestic seed organizations are on board supporting this procedure. AOSA and SCST have always made major contributions to seed testing, quality, and movement, but we haven’t always been highly visible. I think this has changed in the last few years. It is extremely worthwhile for us to send representatives to the meetings of the organizations listed above and to the meetings of other international groups like OECD and ISF. Although presidents come and go, it is good that these organizations recognize at least one familiar face. And they know who to
I hate the annual meeting; let’s make the most of it

I hate our annual meeting, let me count the ways: 1) Relative to other seed industry meetings the AOSA/SCST annual meeting is at the wrong time of the year 2) It takes over a week to fit in all the workshops, committees and business meetings. 3) And I volunteer for way more work than I should.

I must admit that I also don’t always do my fair share of work. I find our members to be either resigned to the fact or sympathetic to my plight of overextending myself. But let’s all make the most of our time together. There isn’t much we can do about the timing of the meeting. On the plus side it doesn’t fall on Father’s Day this year. For me June is no longer a time to recoup and reflect. I know that other crops have other cycles and not everyone would agree on what time of year works best. It would be a feat of organizational skill to find a week that fits everyone’s schedule. So I must say this is a problem that I just like to complain about and in reality there is no perfect time to be away from work for a week.

Where I think we can improve on our use of time are committee meetings. Committees are doing more now than ever before, tackling tough issues and monumental tasks. Technical information and training materials are steadily improving as demonstrated by new handbooks, study guides and exams. I am truly excited about our organization’s future.

I don’t mean to hurt any feelings, dash high aspirations or make light of hard work. However, we have become accustomed to filling the meeting schedule with hollow committee meetings and déjà vu sessions. What is a hollow committee meeting? It is a meeting where a) a chair or co-chairs simply report on what they have done and there are no actual members actively participating, b) an inactive committee that hopes someone will suggest a direction or bring forth an issue, c) a committee solely looking for a new chair. A déjà vu session can occur anywhere and ranges from one or two minor déjà vu agenda items to an entire déjà vu agenda. I know this type of committee meeting well, I have even been the chair of one. It goes something like this. “We didn’t have much activity this past year” followed by a rehash of the previous year’s meeting. The same ideas and issues are discussed. Perhaps a wave of support, and encouragement, bubbles forth but no firm plan emerges. Another year passes and the exact same meeting occurs at another location with the same good intentions and the same end result.

Bottom line, we need to allocate time based on the activity and interest level of the committee. I have no problem with a committee that is not active. I once chaired a committee for an affiliate organization, that shall remain nameless, and we never met once in my tenure as vice chair and chair. I am proud to have spent four years looking, asking and being advertised as a committee looking for work without taking a single one-hour time slot. Meet on your own, meet at the bar, meet in the hall, or in the hospitality room, but please don’t ask for an hour when you need 10 minutes to say “the committee has no agenda.” So by all means talk and be active throughout the year by mail, email or phone. At the annual meeting you can be a hero by vol-

continued on page 8
Committee Reports

NEWSLETTER COMMITTEE

The Newsletter Committee will be meeting at 8:00 am on Monday, June 7. We are always looking for additional members and contributors. Please join us for our committee meeting. We will divide the responsibilities for the annual meeting and the upcoming year and plan to discuss some projects for 2010/2011.

AOSA President’s Message
Continued from page 6

contact with their questions. They also know that AOSA and SCST are active organizations that are interested in collaboration and cooperation. By attending meetings and being involved in current seed industry discussions, we remain relevant and maintain a voice in national and international discussions.

Finally thank you to those in AOSA and SCST who allow their names to be on the ballot for our executive boards this year and for any elected office in the past. A mostly volunteer organization would fade away if not for the willingness of its members to donate their time and talents. Thank you to all those who are active in AOSA and SCST. I hope to see you in St. Louis and next year in Williamsburg, VA!

SCST President’s Message
Continued from page 7

unteering to have your committee meeting on your own when the situation warrants. If you are interested in a committee be sure to contact the chair and get on the email or mailing list to see what’s happening. We don’t want to lose volunteers or be unaware of emerging issues so use the issues forum and long range planning to spitball ideas as a group. Every committee should have marketing and communications plans to be effective. More awareness, more members, more good that can be done.

Another area that needs work is volunteerism. I was once lured into a position of responsibility within another organization when someone overheard me say “it’s a darn shame they can’t find someone to teach those kids.” Needless to say I was asked to volunteer. What did I learn? Don’t do something just because no one else is volunteering, I was “pothole fill” and after the rush of being a volunteer wore off I felt as such. I was tormented by the expectations from above, the parents, and from the void below, my lack of ability with kids. As with most pothole fill I worked lose under the weight of the traffic and eventually found myself in small pieces on the shoulder of the road. It felt great and was able to apply myself to other volunteer activities where I felt comfortable learning and growing. I was even less experienced in these other roles, but they were fun and I knew where I wanted to go with them. If you do what you love and you do it to the best of your ability, whatever your abilities may be, our annual meeting and organization will be better for it.

I share this story with you not because I want the cream of the volunteer crop. If anything I would like to see more people volunteer. All hands on deck so to speak. Don’t have time, don’t feel comfortable? Join the club. Try being a genetic technologist who is the president of an organization where 90% of its members feel more comfortable discussing seed counts or encrusted grass seed than traits and antibodies. We need all of our members to be as active as they can. If you feel like pot-hole fill, then by all means find another pot-hole. And for those strong personalities in our organization, make room. There is no pot-hole too small and by nature they grow and grow.

I love our annual meeting, potholes and all. I’m going to make the most of it. Please join me.
INTERNATIONAL COMMITTEE SURVEY RESPONSES

This report contains the results of the survey conducted by the International Committee in March 2010. The goal of the survey was to provide direction to the committee and to gauge SCST and AOSA member interest in a variety of potential projects. The International Committee will hold an open meeting at the Annual Meeting in St. Louis. We invited all meeting attendees to attend the committee meeting and to participate in the discussion of the survey results and how to move forward on the issues of greatest interest to AOSA and SCST members.

Pat Brownfield, International Committee Chair

---

**1. If the International Committee provided a database of international contacts would you use it? (regulatory agencies, import/export officials, etc.)**

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Comments:

- Answered question 85
- Skipped question 0

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**2. Do you use the EXCERPT database?**

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Answered question 85

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**3. Would you use the EXCERPT database if provided assistance and access?**

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Answered question 83

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**4. Would you like to see a Frequently Asked Questions area on International Committee web site?**

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<td>23.5%</td>
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</table>

Answered question 85

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Comments:

- Didn’t even know there was a website.
- I think the answers to the FAQ I get change overnight, so I think it would be hard to keep the answers current and could cause issues of liability.
- Very useful
- We don’t use the International Committee web site.

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This report contains the results of the survey conducted by the International Committee in March 2010. The goal of the survey was to provide direction to the committee and to gauge SCST and AOSA member interest in a variety of potential projects. The International Committee will hold an open meeting at the Annual Meeting in St. Louis. We invited all meeting attendees to attend the committee meeting and to participate in the discussion of the survey results and how to move forward on the issues of greatest interest to AOSA and SCST members.

Pat Brownfield, International Committee Chair
5. Would you be interested in a database that compares the differences between the AOSA and ISTA Rules?

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Comments:
- The USA and Canadian Labs that are ISTA accredited may be able to help produce or review it.
- We only use AOSA rules, but it would be interesting to see the differences.
- I thought AOSA already did this. I remember doing this for the crops we work with.
- Yes I always have to deal with this issue.
- There are differences?
- If it improve our uniformity
- Consider that if a database is developed, it will need to be updated each year. The project seems daunting and not particularly useful, since the Rules can be referenced as needed.
- I’m a genetic testing person.

6. Would you be interested in a database of OECD seed schemes information: member countries, testing requirements, etc.?

<table>
<thead>
<tr>
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</table>

Comments:
- I think member countries are available on the OECD website. I think you refer to seed testing requirements for OECD - there are no seed mechanical standards. OECD is only varietal certification based on: varietal registration, field testing/verification, and growouts.
- If it’s beneficial to what we’re doing.
- Possibly, although to the best of my knowledge none of the seed we test is shipped internationally...

7. The committee is considering working on the following areas, please indicate if you think these are important?

<table>
<thead>
<tr>
<th>Answer Options</th>
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</thead>
<tbody>
<tr>
<td>Work with the Seed Association of the Americas on acceptance of AOSA Rules and RST Reports</td>
<td>74.1%</td>
<td>60</td>
</tr>
<tr>
<td>On-line question forum for international questions</td>
<td>51.9%</td>
<td>42</td>
</tr>
<tr>
<td>Work with AOSCA member countries to accept AOSA rules and RST reports</td>
<td>77.8%</td>
<td>63</td>
</tr>
<tr>
<td>Seed pathology technologist accreditation</td>
<td>45.7%</td>
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<td>Genetic lab accreditation-interest in adding this to the ASL program</td>
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<td>Database of differences between AOSA and ISTA Rules</td>
<td>80.2%</td>
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<tr>
<td>Posting letter explaining SCST and US seed system in the members only section</td>
<td>40.7%</td>
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<tr>
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</table>

Comments:
- “Uniformity in seed-testing”, “accreditation in specialized areas”, and “sharing information” are all important. All 3 work together to meet our goals...... so I have to check all!
- Appears, a committee has been formed without a clear mission, if so, why was committee formed? Some believe SCST is trying to compete with ISTA as the purpose of this committee
- Explain AOSA also?
- Seed pathology tech. and Genetic lab accreditation do not seem to fit in the domain of the international committee.
### 8. Would you be interested in a database of phytosanitary seed health tests that have been certified by the National Seed Health System?

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**Comments:**
- As long as it is current and updated, real time.
- Haven't yet had a use for this, but for future reference this would probably be useful.
- I believe there is already a list on the NSHS website
- Isn't this already available by contacting the NSHS? Seems redundant.
- Must be current
- This information is all ready available on the NSHS website. But a link would be good.
- This would be interesting.
- This would be very useful
- We are not interested in lab testing for phytosanitary purposes. There is an accreditation process in place for that process.
- Wouldn't a link to NSHS provide this or should we ask them to provide this link to save time? Example: http://www.seedhealth.org/files/pdf/Field_Crops.pdf http://www.seedhealth.org/files/pdf/Vegetable_Crops.pdf
- www.seedhealth.org has a list?

### 9. What areas would you like to see the committee work on in the future?

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**Comments:**
- Any of the suggested areas in number 8 would be very helpful.
- Check status of the Continuing Education Points.
- Harmonization of AOSA and ISTA rules.
- I think the committee has enough work now.
- I would like to know exactly what is the difference between ISTA and AOSA and if I can provide my customers with a test, from a non-accredited seed lab that would allow them to sell certain quality seeds. It is my understanding that only the certified labs can do any ISTA testing. Is there a statement I could put on my report stating I am not an ISTA accredited lab, but I provide them with adequate information?
- I would like to see the committee push through all questions above. It would be a great benefit and strength the RST/GST credibility.
- I would like to see the database of the differences between AOSA and ISTA rules happen fairly soon.
- I would really like to see SCST work on improving professionalism and proficiency in its members as number one priority, work to develop a traditional seed lab accreditation set of standards for SCST member labs (paper audits of reports issued, conformance to reporting guidelines). Seed pathology accreditation is a worthy task, however, is there a need?
- In the area of international shipping, I would like to see a database of import shipping requirements for countries - possibly a network/alliance. This would include varietal/genetic, lab testing, and phytosanitary.
- Increasing membership in other countries. If the association is going to promote the use of AOSA rules in the Americas, it should translate it to Spanish. The hardest thing will be the first time, after that it is simply updates.
- Noxious weed lists for various countries
- Teaching and training of international analysts
- Training foreign seed lab analysts
- You have expressed the areas I feel are important in the first part of the survey, any of the suggestions in number 8 are very important to me.
Committee Reports

International Committee Survey, continued from page 11

10. Specific issues/ questions you might currently have?

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Comments:
- I would be very happy to help in anything related to increasing membership of Latin American Labs in AOSA/SCST and to have AOSA rules used by seed programs in the Americas
- Our customers come to us with questions on phytosanitary requirements for individual countries. I would like some help on how/where to find this kind of information.
- What is needed on certificates AOSA Certificates to accompany seed going into Brazil

Please describe your laboratory:

- Seed Company: 27%
- Independent Seed Lab: 10%
- Crop Improvement Lab: 6%
- State Seed Lab: 5%
- Federal Seed Lab: 2%
- University Seed Lab: 2%
- Other (please specify): 5%

Please indicate your region:

- Northwest: 40%
- Midwest: 23%
- Northeast: 20%
- Southeast: 7%
- South: 5%
- Southwest: 4%
- Canada: 1%
Tall fescue (Festuca arundinacea Schreb., Poaceae) is a crop grown in the Willamette Valley of Oregon for turf and forage purposes. It can be planted in fall or spring and can be harvested for hay or seed.

In 2009, total acres of tall fescue passed for seed certification in Oregon were 103,607, compared to 92,194 acres in 2004. More than 150,000 acres are currently in production and yields exceed 1500 lbs/acre per year (Table 1). The grower’s price was 45% lower in 2009 than in 2008. As of February 17, 2010, the price dropped another 10-12%, if you can find a buyer.

Yield per acre increased in 2009. One reason for higher yields with fewer acres is that growers are using growth regulators to increase yields. Growth regulators are plant hormones sprayed on the crop that causes plants to stay upright longer during pollination. This practice hopefully results in higher seed set.

A grower concern is potential high temperatures and low moisture during or directly after pollination which can result in poor seed set. If the spring is on the dry side, the plant may run out of moisture prior to swathing and have difficulty developing fully mature seeds. This results in a high percentage of heavy empty florets (Figs. 1 and 2).

At harvest, when the grower is setting the combine, the goal is to get as many seed units as possible into the tank. Most growers check the combines frequently. Often they must reset air flow, concaves and screens between fields and varieties during the tall fescue harvest.

To monitor tall fescue seed quality as it is being harvested, growers hold a scoop shovel under the back of the combine to gather a sample of the waste material. This sample is filtered by tossing it into the air and letting the wind blow away the chaff. The remaining heavy material is then placed on top of a big-lens flashlight to see if there are any ‘good’ seeds being passed over the screens. This practice is very similar to how seed analysts use a diaphanoscope in the laboratory.

Combine settings are then adjusted based on these findings. If there are ‘good’ seeds in the shovel (waste material), then combine settings are dialed down to allow more ‘seed units’ into the tank. Using this check and adjustment, the grower is confident of collecting as much potentially viable seed as possible. The grower’s price is based on pounds of clean seed meeting the minimum quality standards, which is 98% pure seed for certified seed.

After harvest, the seed moves from the grower to the conditioner. The conditioner’s job is to get as much seed in the bag keeping the quality above, but near, the minimum standard.

Many seed cleaning operations conduct their own quality checks for pure seed and inert during the conditioning process. Most all seed conditioners rely on commercial labs to confirm their findings on quality checks they have conducted. Conditioners generally use the same criteria used by analysts in the laboratory. Under the current AOSA Rules (2009), the analyst is giving the seed conditioner feedback based on the pure seed unit (PSU) definition Number 21, stating that any unit with a caryopsis less than 1/3 the length of the palea is considered inert. The conditioner uses their quality control information confirmed by laboratory analysis to set the air flow or screens to ensure retention of pure seed and removal of inert matter.

This analytical practice coupled with the cultural practice of meeting a standard level of 98% minimum pure seed, ensures that seed in the bag is seed with caryopses equal to or greater than 1/3 the length of the palea. With

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<th>Table 1. Certified acres of tall fescue harvested and seed yield per acre in 2008 and 2009 in Oregon.</th>
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<td>Seed yield (lbs/acre)</td>
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continued on page 14
the current definition, the conditioner is confident of the quality check needed to get the best result (i.e. highest yield of quality cleaned seed) for the grower.

With our current cultural practices/analytical definition, seed companies also have high confidence that what they are selling is quality seed and the buyer of the seed is confident of getting quality seed for planting purposes.

A proposed tall fescue blowing point (2010 Rules Change Proposal #12) would break down the confidence level of grower, conditioner, buyer and seller. According to data initially provided to the industry in 2007, on average, the pure seed will increase by 1% and the inert will decrease by 1% when using a blowing method on tall fescue.

When the analyst gives feedback to the conditioner that the pure seed is 1% higher and with the goal to meet the minimum quality levels ensuring the grower gets the most volume to receive more money, more off quality material will be retained than the buyer/seller is accustomed to.

A pure seed unit concern is that in years when we have high temperatures and low moisture, plants become stressed resulting in a higher incidence of heavy empties that do not blow out with a calibrated blowing point (Fig. 3). Under these conditions, the buyer/seller cannot have confidence that the seed in the bag is the quality they have come to expect, if this blowing procedure were to be implemented. The numbers on the label will not mean the same as they do now. If more empty florets are retained as pure seed, the actual planting value decreases.

Most conditioners are not in a financial position to purchase blowers similar to what seed labs have. Therefore, conditioners will not be able to perform the quality checks and obtain the assurance of their effectiveness of their procedures from a seed lab as they do now. They will not have the confidence level that they currently have with their ability to set the cleaning equipment.

A primary concern of growers, conditioners, sellers and analysts is that the calibrated blowing point will not fluctuate with environmentally-induced seed quality issues we have in open pollinated seed crops. The 98% minimum quality the industry has grown to understand will not mean the same thing from year to year.

For example, in some years, like 2009’s harvest, will see up to 30% heavy empties that do not blow out. The practical implication of this is that samples with high incidence of heavy empties may not meet an 85% minimum germination standard for turf types and a 90% minimum standard for forage types of tall fescue. To wait 21 days for germination results to discover problem lots will have significant financial implications for the industry. To ensure high quality seed, conditioners will have to open bags, recondition the seed lot, sample and wait another 21 days for germination results. An additional complication is that the seed may have been shipped or blended prior to the completion of the test, which is a normal industry practice.
TALL FESCUE PRODUCTION
Continued from page 14

This past year, AOSA/SCST have learned that a high percentage of seed testing laboratories that test kinds requiring a calibrated blowing point do not request the standard calibration samples from the Federal Lab (Hall, 2009). There are also problems with the quality of the standard calibration samples. Inarguably, the uniform blowing procedure adds to consistent and reproducible analytical results; however, adding another crop to the list of seed kinds that require calibrated blowing points may be premature.

Seed testing plays an important role in the production, conditioning and sale of tall fescue far beyond simply providing labeling information for the final product. We, as seed analysts, have a responsibility to look at the bigger industry picture and to understand how we fit into and how seemingly small changes on our part can potentially adversely affect this industry.

Following review of the proposed tall fescue blowing point, a number of companies expressed opposition to the 2010 proposal (Table 2). Additional comments provided by industry members regarding a blowing point for tall fescue are provided in Table 3.

Respectfully submitted,
Sharon K Davidson, RST

References:
OSU – Oregon Grass Seed Crop Estimates, Data collected by the Extension Economic Information Office.

Table 2. List of seed companies that expressed concerns relating to a blowing point for tall fescue based on feedback following review of proposal.
Pennington Seed, OR
Oregon Seed Cleaners, OR
Proseeds, OR
Smith Seed Services, OR
Stover Seed, CA
Grassland Oregon, OR
Venell Farms, OR
Clearwater Seeds, WA
Allied Seed, OR
Burlingham Seeds, OR
Northampton County Seed Co. Inc., PA
Ampac, OR
Agassiz Seed, ND
Allied Seed, ID
Fanning Farms, OR
Novel Ag, OR
Brentano Farms, OR
Blue Moon Farms, LLC, OR
Blue Line Farms, OR
Seedway, PA, NY, MD, VT, NJ
All–Pro Horticulture, NY
Saddlebutte Ag, OR
The CISCO Companies, IN
Jensen Seed Farms, OR
The Scotts Company, OH, OR
Turf Care Supply, OR
Oregro, OR
Turf Merchants, OR
Pacific Coast Seed, CA
I think the present industry standard works very well, with very few hiccups, and if it ain’t broke, don’t fix it.

[The] background paints a good, accurate picture of what we do currently in the industry and arguments against the blow point are valid...The current system works, people understand what they are getting when they see a seed analysis, and the blow test won’t save time or money.

At this time, **NO** growth regulator is allowed on Foundation production in tall fescue. The majority of the lots shown appear to be certified, and would have growth regulator on them. In addition, no exploration of dryland vs. irrigated production is considered, and I think that may have an impact on the blowing point, particularly in certain years. I cannot support this proposal until seed from field production, with and without growth regulator, of the same varieties and dryland vs. irrigated in the same years is explored. It is a much more complex situation than is suggested here. I do not believe a blowing point will suffice.

My concern has been the older fields and fields treated with growth regulator that produce a lighter bushel weight seed. I have always been afraid, when this seed is blown, that some of the lighter good seed might be blown out and considered inert. This has also been a concern even in ryegrass for me. I do not have the lab experience though to know if that is the case or not.

[A blowing point] would have a definite impact on the quality of seed we would purchase. We are a purchaser of high quality seed for our end consumer and this modification in the rule could potentially allow us to purchase lower to low quality seed without knowing in advance. Thanks for the opportunity to voice an opinion.

We have to run uniform blowing setting on Kentucky bluegrass because of difficulty in seeing unfilled units and having to use pressure to make determination. Multiple units in this crop are generally blown off with this uniform setting. However, we are seeing many situations where we are getting low germs because a uniform setting is to low for heavy empties (many times they are multiples); these are staying in the pure seed portion and dragging the germ down. I notice many times on these types of seed the very labs promoting this method for Tall fescue seems to get higher germs. So they are either ignoring the standard they are recommending, the seedsmen is selling something other than what the labs saw, the uniform calibration samples from USDA are inaccurate, or RPM’s of blower motors, non-uniformity in blower design, voltage irregularities, etc. are to blame.

We only have a couple of companies selling seed blowers and I think only one company manufactures for the other. We don’t have uniform specs on the blowers or the ability to get these repaired promptly if all analysts become so dependent on them. With no other option, we can’t perform our tests (the last prices I saw on these blowers 5 years ago are $5300 even if you could get one made in time).

Rough combine-run seeds seem to be driving this situation, but running reduced portion for low quality seed (maybe 93% or less?) by our present rule would be superior to this method, and should be explored. It would insure that producer can get meaningful information from laboratory.

Tall fescue seeds (caryopses) have a stronger pericarp (outer shell) and slight pressure methods along with transmitted light will consistently yield accurate results without damage to seed. Of course these seeds are then planted for germination. This method yields accurate, consistent results no matter what type of harvest. I don’t think you can count on this with uniform blowing method.

It would not surprise me, if this passes, that emergency measures might sometime have to be taken for disruption in tall fescue market requiring that many tests run by uniform blowing be redone with old method. I sure don’t want to be doing all the extra testing if this occurs.

When running tall fescue, I have found that having the ability to adjust the blower settings allows me to get the job done faster and more accurately. The blower is then what is was designed to be, a tool to assist the analyst rather than an infallible machine dictating to the analyst. I still trust expertise of trained analysts; I know it’s hard to believe, but they can do it. Just hope we as a seed testing society don’t get too lazy and hung up on controlled systems.
ADDENDUM TO “UNINTENDED BIAS TO RYEGRASS PURITY TESTS: SEEDLING ROOT FLUORESCENCE (SRF) AND MATURITY GROW-OUT (GOT)”

The article, “Unintended Bias to Ryegrass Purity Tests: Seedling Root Fluorescence (SRF) and Maturity Grow-out (GOT),” was published in the February 2010 The Seed Technologist Newsletter, Volume 84, Number 1. Figure 1 was confusing because the seedlings with fluorescent root traces were not separated from those that did not have fluorescent root traces. The GOT is conducted on those seedlings that show fluorescence and contains only few non-fluorescence seedlings as control comparisons; only results from SRF seedlings are included in test determinations. Of 441 SRF seedlings in the germination and SRF tests at the start of the study, 359 survived to be placed in a GOT and 118 of these had molecular marker determination for “annual-like” alleles. By the end of the GOT 94 of the SRF seedlings had not headed. Below is a revised Fig. 1 that reports only those seedlings that had fluorescent root traces and when they actually headed in the GOT.

Heading of the plants from seedlings that had SRF continued in the linear phase of the growth curve to at least 10 or 11 weeks where it approaches it’s asymptote. The question is, “At which point in a linear gradient should a GOT be stopped?” According to the AOSA Cultivar Purity Handbook (CPH), it is suggested that the GOT be terminated before or at week 6 and this uncertainty of when and how to measure the plants contributes to bias to the GOT. The GOT was developed as a test for vernalization requirement with the assumption that the need for vernalization is directly associated annual-type growth habit. If plant characteristics other than heading are to be considered in a GOT, measurement of those characteristics must be better defined and standardized in all GOTs.

“Annual-type” plants as determined by DNA markers approaches the growth curve asymptote equivalent to an 8-wk GOT. The “target” for the DNA markers is flowering control as measured by vernalization requirement and transition of a tiller from vegetative to reproductive. These markers are more aimed at identifying the “big uglies” than the “annual-type” per se. The difference between the two curves indicates the genetic complexity of flowering control genes and their interactions with actual plant phenotype (visual appearance).

Plants from seedlings with fluorescent root traces reach heading faster than those that did not have fluorescence (Fig. 1a). This difference in growth rate is actually what allows the GOT to be useful in ryegrass purity testing. Measuring other plant characteristics besides heading can also enhance the usefulness of the GOT, but variation among examiners will be high. It is sometimes difficult to determine rolled verses folded leaf vernation or getting a proper assessment of leaf color. Training to recognize these other characteristics will need to be standardized.

The revised figures represent the combined data for the ryegrass study, but individual seed lot response is important and the object in seed testing (Table 1a and 1b). Germination and SRF tests were conducted on 20 ryegrass seed lots in 2005 and repeated again in 2006 at Agri Seed Testing, Inc. (AST), Salem, OR. GOTs were conducted on the first set at AST (Table 1a) and at USDA ARS and Oregon State University in Corvallis, OR on the second set (Table 1b). The USDA GOT was conducted in a high light intensity growth chamber under continuous light for 84 days. Data collected from the USDA GOT were combined and used to prepare Fig. 1.

Verifying seed testing experience and other study results, the SRF test shows wide variability among tests from the same seed lots as indicated by the TFL of the two sets of tests reported here (Table 1a). Results from all tests were higher than the corresponding variety fluorescent levels (VFL) and is indicative of the up-
Fig. 1 (revised). Heading rate of 359 SRF positive seedlings from 20 ryegrass cultivars in an 84-day GOT. Number of plants heading was counted from SRF seedlings (green bars) and accumulated each week. Purple bars are the combined number of plants up to that week that had “annual-like” and “hybrid” plants as classified by DNA markers. (The 94 plants that had not headed by the end of the test are not included in the figure.)

Fig. 1a. Plants headed after each week of a 12-wk GOT. Yellow bars are for plants that had fluorescence root traces as seedlings and the green bars are from plants that did not fluorescence.
Ryegrass purity
Continued from page 18

ward bias of the SRF test. Variation among seed lots for SRF is as expected.

The AST GOT results were lower than the annual contamination determined by TFL in all cases, but the USDA GOT values were higher than the AST values at the usual cutoff 42da test (Table 1b). Average USDA GOT values increased as the length of time in the GOT increased. The amount of increase for each seed lot was variable among seed lots tested. These results over length of GOT indicate that actual termination time of the GOT is critical and needs to be standardized over test locations and laboratories.

Table 1a. Results for ryegrass contamination based on Test Fluorescence Level (TFL) and grow-out (GOT) from 20 perennial ryegrass seed lots tested at Agri Seed Testing (AST) in 2005 (1st set) and 2006 (2nd set).

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<th>AST inc. TEST#</th>
<th>VFL</th>
<th>% Germ</th>
<th>TFL</th>
<th>Normal Fl plants</th>
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| Total FL+ 475 | Total FL+ 441 |

n/d = not determined

continued on page 21
Ryegrass purity
Continued from page 19

The variability associated with both the SRF and the GOT needs to be addressed if any confidence in these tests can be maintained. Molecular markers provide a better estimate of contamination (Table 1b), but their effectiveness cannot be determined by correlation among the several tests used to predict actual annual-type contamination. Contamination of perennial ryegrass seed lots come from both physical seed mixtures and by pollen flow. Physical contamination is estimated by using only molecular markers associated with annual-type growth types, but pollen contamination is indicated by the heterozygous, or hybrid, genotype. Molecular markers should be less variable among laboratories because of the technological precision of the tests. There will still, however, be variation from the sampling errors associated with gathering and processing seed lot samples. These sources of variation still need to be examined and reported.

Submitted by:
Reed E. Barker
Grass Genomic Testing, Inc.,
1962 Davcor St. SE,
Salem, OR 97302-1146

and

Laurel D. Cooper,
Oregon State University,
Botany and Plant Pathology,
2082 Cordley Hall,
Corvallis, OR 97331-2902

Table 1b. Continuation of Table 1a with the calculated annual ryegrass ('A') at four dates from the USDA GOT and annual ryegrass contamination calculated from molecular markers. ‘A’ is annual-type markers and ‘H’ is for hybrids, or heterozygote loci.

<table>
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<tr>
<th>TEST#</th>
<th>AST inc.</th>
<th>Calc % 'A' from USDA growth chamber GOT</th>
<th>Calc % 'A' from ID1 &amp; Vrn-1 DNA markers</th>
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<tbody>
<tr>
<td>AST inc.</td>
<td></td>
<td>Calc % 'A' from USDA growth chamber GOT</td>
<td>Calc % 'A' from ID1 &amp; Vrn-1 DNA markers</td>
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<td>56 d</td>
<td>70 d</td>
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<td>4.06</td>
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<td>6.09</td>
<td>8.22</td>
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<td>2.64</td>
<td>2.64</td>
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<tr>
<td>Average</td>
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ACRONYMS OF INTEREST TO SEED ANALYSTS

The following article is a list of common acronyms that a seed analyst might encounter. The Newsletter editors thought this might be a useful resource before the annual meeting in June. The definitions have been largely taken from the RST/CVT/CPT Study Guide, which is available on the SCST website under Training Publications. All web links and sources have been updated and are current.

**AASCO: Association of American Seed Control Officials**
An organization of seed regulatory officials from the United States and Canada. Members meet annually to discuss mutual concerns of seed law enforcement, to be updated on new developments in the seed industry, and to update the Recommended Uniform States Seed Law (RUSSL) which the organization developed and maintains as a “model” law for states and federal programs. (http://www.seedcontrol.org/)

**AFBF: American Farm Bureau Federation**
An independent, non-governmental, voluntary organization formed in 1919 representing farm and ranch families for the purpose of analyzing their problems and formulating action to enhance and strengthen the lives of rural Americans and to build strong, prosperous agricultural communities. (http://www.fb.org/)

**AMS: Agricultural Marketing Service**
An office of the US Department of Agriculture which administers, in part, the Agricultural Marketing Act, Part 75. This Act provides regulations for the inspection and certification of agricultural and vegetable seeds. (http://www.ams.usda.gov/)

**AOSA: Association of Official Seed Analysts**
A seed testing organization formed in 1908 composed of seed analysts from official state, federal and university laboratories in the United States and Canada with a principal role of developing rules and procedures for seed testing and contributing to the standardization of seed testing. (http://aosaseed.com/)

**AOSCA: Association of Official Seed Certifying Agencies**
An organization of seed certifying agencies formed in 1919, primarily composed of members from the United States and Canada with a primary function of providing an unbiased, service-oriented method for maintaining the genetic identity of seed on the open market. (http://www.aosca.org/)

**APHIS: Animal and Plant Health Inspection Service**
Agency of USDA which now administers what was formerly Title III of the FSA regarding inspection of imported seed for noxious weeds. (http://www.aphis.usda.gov/)

**ASA: American Soybean Association**
An organization of state associations of soybean growers, processors, exporters, etc. A primary focus of ASA is policy development and implementation. (http://www.soygrowers.com/)

**ASTA: American Seed Trade Association**
A United States organization established in 1993 to represent the interests of the seed industry in lobbying for favorable legislation at the federal and state levels. (http://www.amseed.com/)

**BOE: Board of Examiners**
A standing committee within the Society of Commercial Seed Technologists responsible for administering the CVT, CPT, RST and RGT examinations. (http://www.seedtechnology.net/)

**CAST: Council for Agricultural Science and Technology**
A group that assembles, interprets, and communicates credible, science-based information concerning agriculture and technology regionally, nationally, and internationally to legislators, regulators, policymakers, the media, the private sector, and the public. (http://www.cast-science.org/)

**CFIA: Canadian Food Inspection Agency**
The Canadian counterpart to the US Department of Agriculture whose mission is to safeguard food, animals and plants, enhancing the health of Can-
Acronyms

Continued from page 21

ada’s people, environment, and economy. CFIA publishes the Canadian Methods and Procedures for Testing Seeds. (http://www.inspection.gc.ca/)

CGT: Certified Genetic Technologist
A member of the Society of Commercial Seed Technologists who has fulfilled the requirements for membership and passed one or two of the four RGT exams (PCR, ELISA, Electrophoresis and Herbicide Bioassay) (http://www.seedtechnology.net/)

CPT: Certified Purity Technologist
A member of the Society of Commercial Seed Technologists actively involved in the field of physical purity testing who has fulfilled the requirements for membership and passed the CPT examination. (http://www.seedtechnology.net/)

CSA: Certified Seed Analyst
Certified affiliate member of an Association of Official Seed Analysts laboratory. A CSA may be certified in germination, purity or both. (http://aosaseed.com/)

CSAAC: Commercial Seed Analysts Association of Canada
A group of Canadian Seed Analysts whose objectives are to enable themselves to keep abreast of changes and improvements in seed analyzing, as well as to maintain and encourage the highest proficiency and professional standards among its members. Also, it assists members to solve problems arising in their work, and facilitates cooperation between Agriculture Canada, seed firms, and seed laboratories. (http://www.seedanalysts.com/)

CSGA: Canadian Seed Growers Association
The Canadian organization that monitors and certifies pedigreed seed for all agricultural crops in Canada (except potatoes.) (http://www.seedgrowers.ca/)

CSI: Canadian Seed Institute
A not-for-profit organization founded in 1997 and recognized by the Canadian Food Inspection Agency. CSI has been given the mandate to deliver accreditation and monitoring programs for the Canadian seed industry. (http://www.csi-ics.com/)

CSTA: Canadian Seed Trade Association
An association that represents corporate members engaged in all aspects of seed research, production and marketing, both in Canada and internationally. (http://cdnseed.org/)

CVT: Certified Viability Technologist
A member of the Society of Commercial Seed Technologists actively involved in the field of viability (germination) testing who has fulfilled the requirements for membership and passed the CVT examination. (http://www.seedtechnology.net/)

EC: European Commission
A commission of the European Union which upholds the interest of the European Union as a whole. It drafts proposals for new European laws, which it presents to the European Parliament and the Council. (http://europa.eu/)

ELISA: Enzyme-Linked Immunosorbant Assay
A biochemical technique used mainly in immunology to detect the presence of an antibody or an antigen in a sample. The ELISA has been used as a diagnostic tool in plant pathology as well as a quality control check.
(Source: http://en.wikipedia.org/wiki/ELISA)

ESCOP: Experiment Station Committee on Organization and Policy
An organization which handles continuing business, organization, and policy issues on behalf of the state agricultural experiment station directors. Representatives of this organization sometimes serve with other association representatives involved with seed. (http://escop.ncsu.edu/)

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Acronyms
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EU: European Union
A single market of primarily European states, which has sought to guarantee the freedom of movement of people, goods, services and capital between member states. It maintains a common trade policy, agricultural and fisheries policies, and a regional development policy. (Source: http://wikipedia.org/wiki/European_Union)

FAO: Food and Agriculture Organization
A specialized agency of the United Nations that leads international efforts to defeat hunger. It serves both developed and developing countries. FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy. (http://www.fao.org)

FSA: Farm Service Agency
An agency within the USDA that administers and manages farm commodity credit, conservation, disaster, and loan programs as laid out by Congress through a network of federal, state and county offices. (http://fsa.usda.gov/FSA/)

FSA: Federal Seed Act
An act of the United States Government to regulate interstate and foreign commerce in seeds first enacted in 1939. (http://www.ams.usda.gov/)

GMO: Genetically Modified Organism
An organism whose genetic material has been altered using genetic engineering techniques. (Source: http://en.wikipedia.org/wiki/Genetically_modified_organism)

IPSA: Independent Professional Seed Association
An organization formed in 1989 to represent independent seed companies worldwide. IPSA represents nearly 100 seed companies from more than 25 states and Canada. (http://www.independentseeds.com/)

ISF: International Seed Federation
A non-governmental, nonprofit organization representing the seed industry, formed by the merger of two organizations: FIS (International Federation of Seedsmen) and ASSINSEL (International Association of Plant Breeders for the Protection of Plant Varieties). It has members from over 70 developed and developing countries on all continents. (http://www.worldseed.org)

ISTA: International Seed Testing Association
An international seed testing organization formed in 1924 to test and develop rules for seed testing on a global scale. (http://www.seedtest.org/)

NAFTA: North American Free Trade Agreement
An agreement which began on January 1, 1994 and removed most barriers to trade and investment among the United States, Canada, and Mexico. (Source: http://www.fas.usda.gov/itp/Policy/nafta/nafta.asp)

NASDA: National Association of State Departments of Agriculture
An organization of the Commissioners of Agriculture of the 50 states comprised of a 10 member board whose purpose is to represent the state departments of agriculture in the development, implementation, and communication of sound public policy and programs which support and promote the American agricultural industry, while protecting consumers and the environment. (http://www.nasda.org/)

NCCPB: National Council of Commercial Plant Breeders
An organization of plant breeders, whose council represents the interests of its member companies in the business of plant improvement for feed, food, and fiber. (http://www.nccpb.org/)

NCGA: National Corn Growers Association
An organization representing the corn industry aimed at increasing the value of the U.S. corn crop

General and Technical Information
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PVPA: Plant Variety Protection Act
An act allowing for the protection of intellectual property rights of plant breeders who have developed new plant varieties. It is administered under AMS, USDA.  
(Source: http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELDEV3002796)

RGT: Registered Genetic Technologist
A member of the Society of Commercial Seed Technologists who has fulfilled the requirements for membership and passed three of the four RGT exams (PCR, ELISA, Electrophoresis and Herbicide Bioassay) (http://www.seedtechnology.net/)

RST: Registered Seed Technologist
A member of the Society of Commercial Seed Technologists who is accredited in both purity and germination testing. (http://www.seedtechnology.net/)

RUSSL: Recommended Uniform State Seed Law
A model law to promote uniformity in state and federal seed legislation with representative contributors from AOSA, AASCO, AOSCA, ASTA, and others. (http://www.seedcontrol.org/russl.pdf)

SCST: Society of Commercial Seed Technologists
An organization comprised of commercial, independent and government seed technologists. It was formed in 1922 and functioned as a liaison between the AOSA and ASTA. Today it also trains and provides accreditation to seed technologists, as well as researches and develops changes to the AOSA Rules for Testing Seeds. (http://www.seedtechnology.net/)

STRF: Seed Testing Research Foundation
A foundation started by SCST to fund applied seed testing research. (http://www.seedtechnology.net/)

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AOSA TO CHANGE METHOD OF VOTING FOR RULES

In an effort to streamline the process in which representatives of AOSA Labs vote on Rule proposals, paper ballots will be used, beginning at the 2010 Annual Business Meeting in St. Louis.

Traditionally AOSA members voted by holding up voting cards: green for yes, red for no, blue for abstention, and two or more board members counted the votes. Unfortunately occasionally someone did not vote for, against, or abstain and cards would have to go up again. The primary reason for the show of cards was to enable those in attendance to see how various states voted. However at the suggestion of Mike Stahr, AOSA president (and approved by the AOSA Executive Board), paper ballots will now be used and the results will be reported on the AOSA web site.

The voting of individual labs will continue to be public, and now a record will be permanently available. A search of the by-laws did not produce a directive against a “public vote” by paper ballot. The AOSA Board believes this new system will improve and simplify the voting process.

Acronyms
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**Title V: Title Five of the Federal Seed Act**
A provision of the Federal Seed Act allowing a variety protected under PVP to be sold only as a class of certified seed. It refers only to those varieties with PVP certificates that have been chosen to be sold only as a class of certified seed.
(Source: [http://www.ext.colostate.edu/pubs/crops/00301.html](http://www.ext.colostate.edu/pubs/crops/00301.html))

**UPOV: International Union for Protection of New Varieties**
An organization of PVP agencies of 64 countries which sets provisions for protection of plant varieties under a reciprocal agreement among member nations. ([http://www.upov.int/](http://www.upov.int/))

**VNS: Variety not stated**

Submitted by
Sue Alvarez
I encountered Lance Birk at a table at the Santa Barbara International Orchid Show. He was selling a book anyone would be proud to display on a table: *The Paphiopedilum Growers Manual*, a definitive reference describing this group of orchids and how to grow them. I was attracted to *The Last Orchid Hunter*, by Lance A. Birk, Pisang Press, Santa Barbara, CA., 359 pp and purchased both books. As a youth I eagerly read adventure books, such as frontier exploration, animal collecting and space exploration. This book would have fit that niche.

Lance describes in the first chapter the delirium state that he was in and how he fell out of a jeep traveling down a road after he fell off a cliff into a river while attempting to photograph orchids in the Philippians while ahead of his group. He ruined his year old camera, the film turned purple and he came down with a tropical bacterial disease. He started this life-long search for orchids while travelling with his friend on a wild goose chase to collect a red *Cattleya* orchid in Mexico and on into Guatemala. They outran the Guatemalan military and bluffed out bandits the same day. By 1965 he collected his first orchids in Mexico and he was hooked on the chase.

His stories read like the text version of a *Romancing the Stone* or an Indiana Jones movie. Who else would hold onto a limestone projection over a cliff face over a sea and swing with a Hasselblad camera to full-frame an orchid? He jumped down onto the cabin of the boat below him. This was in Thailand where he ate durian fruit (a southeastern Asian delicacy), which is described as rooted oil-soaked mangos, rather than insult a chief during a feast in their honor, incidentally he accidently spit out the seed on a companion.

During a collection trip in Thailand, they were attacked by pirates. His travels brought him to the revelation that Paphiopedilum orchids must be pollinated by species-specific pollinators, since breeders readily hybridize orchids in a greenhouse. His trips around the world allowed him to correlate environment with specific orchids. He was also able to discover and rediscover numerous orchids thought to be extinct.

Lance collected orchids around the world in the period between 1963 and the 1990’s. His efforts to understand the orchid growth environment and willingness to share this information transformed orchid growing. This effort rescued many endangered species in areas subjected to deforestation.

The most contentious chapter is the conflict between well-meaning conservationists and protecting endangered species and the ultimate doom of those species because man can no longer collect, propagate and distribute endangered orchids. The problem is that legislation does not effectively deal with habitat destruction, but directly bans the orchid trade. Governments can seize and destroy orchids, irregardless of their rarity; however, attempts to stem exploitation of the land that they grow on has not been effectively addressed. This chapter is a timely discussion of current politics and the result of directed research.

Be prepared to have enough free time to devote to reading this book. I read the first five chapters before I was able to stop for the night. This book integrates adventure and knowledge into a highly readable format. Lance can be contacted at lance@lancebirk.com if you cannot obtain the book otherwise.

Harold Armstrong
Monsanto
Waterman, IL
While attending the annual AOSA-SCST meeting in Fort Collins, I was approached by the lovely Sue Alvarez who asked if I would be interested in writing an article for a future Seed Technologist Newsletter. After looking to all sides around me, I asked her “Are you talking to me?” She said “yes” and I immediately thought this woman to be unstable.

Of course I told her that I would consider it, all the time thinking that she would forget and find someone that really fit the description: **ASK THE EXPERT**. Several months passed when out of the blue the email came—Richard, your name came up as someone who might be willing and able to write a short article on wheatgrass identification for our “Ask the Expert” column. After much thought, I could not come up with a VIABLE excuse knowing that Sue would hunt me down at the next meeting I attend and SCARIFY me for ignoring her request.

So, with reluctance, I will try to share some of my experience and knowledge on wheatgrass ID. Coming from this region, I did have the privilege of being trained by some of the true experts in seed identification such as Arnold Larsen, Jim Bruce, Connie Ramerez and other former Colorado Seed Lab Analysts. I wish there was some great secret I could give you… Unfortunately, I believe it comes only with hard work. Making the effort to talk to your fellow analysts, getting your hands on some reliable samples, spending the time to study the descriptors in handbooks such as **AG HANDBOOK 219** and comparing the samples and really getting to know them are critical to accurate wheatgrass identification.

One of the common phrases you hear about wheatgrass is that they all look the same. Yes, there are many similarities, but when taking the time, you can train yourself to see the differences. We have a large amount of great information accessible on the Internet, but I feel nothing really compares with the hands-on experience that comes from using a pair of good old-fashioned binocs and a handbook.

For instance, comparing your samples and looking at the *Palea Teeth* between species like Intermediate Wheatgrass and Tall Wheatgrass—Intermediate has even-in-length, widely-spaced palea teeth while Tall are more hair-like. (Of course, this is if they are present—it is rare to find the perfect seed as conditioning can change the look immensely.)

I still, after almost 25 years as an analyst, find things that can stump me. This is where I have no second thoughts about contacting some of my fellow analysts and picking their brains. Because I work by myself and do not have the advantage of conversing with other analysts, I regularly use the expertise and resources found in my region such as state and commercial labs.

To sum it up, I recommend that you browse on your computer, see the wealth of information out there, but remember the good old-fashioned way as well and spend some time getting to know your samples and know their differences.

Good luck and enjoy all that PICKING and GRINNING. Time truly goes by fast. And look out for Sue.

Sincerely,

Richard Agnew, RST
AV Seed Testing
This was the third Genetic Technology Superworkshop organized by the SCST Genetic Technology Committee and Working Groups. Each day of the workshop was dedicated to one of the genetic testing areas of the Registered Genetic Technologist Exam. The workshops were targeted towards candidates preparing to take the Registered or Certified Genetic Technologist exams, individuals looking for a refresher course on the basics, and those that may just be beginning in this field.

Workshops included lecture, hands-on activities, and materials to take home. Time was also spent discussing genetic testing issues, new technology, troubleshooting, and sources of information, products, and additional training resources. The agendas and presentations from the workshops can be viewed on the SCST website under the “Genetic Resources” webpage: http://www.seedtechnology.net/genetic_resources.htm

SCST would like to thank Mike Stahr for hosting the workshop and donating many, many hours of his time for preparation. We would also like to thank the following organizers and speakers:

**Herbicide Bioassay:** Brad Johnson, Mike Stahr, and Diandra Viner for organizing the workshop and Mike Lovelace and Doug Miller for participating as speakers.

**Immunoassay:** Bruce Lang and Doug Miller for organizing the workshop, Brett Roberts with AgDia and Jamie Welch with Envirologix for participating as speakers.

**Molecular Genetics:** Mike Stahr for organizing the workshop, Chad Geater with Syngenta Seeds, and Dr. Kan Wang, Dr. Shui-zhang Fei, Dr. Wei Wu, Dr. Anania Fessehaie with Iowa State University.

**Electrophoresis:** Jeff Prischman and Carol Betzel for organizing the workshop, Jackie Fink with Syngenta, Traci Heimer for participating as speakers.

**PCR:** DaNell Jamieson for organizing the workshop, Dr. Dr. Anania Fessehaie with Iowa State University, David Tampa and Brenda Seigel with Promega for participating as speakers and providing equipment demonstrations.

Workshop evaluations were very favorable and the Genetic Technology Committee will plan to host a similar workshop in 2012.
SCST MEMBERSHIP UPDATE

Congratulations to all our new members!

Certified Genetic Technologists:
Jackie Fink, CGT Electrophoresis and Immunoassay, Syngenta Seeds, Stanton, MN
Laurie Gerber, CGT Immunoassay, Wisconsin Crop Improvement, Madison WI
Jeffrey Prischmann, CGT Immunoassay
Mary Putzier, CGT Immunoassay, BioDiagnostics, Inc., River Falls, WI
Mathew Raymond, CGT Herbicide Bioassay and Immunoassay, Illinois Crop Improvement Association, Champaign, IL

Registered Genetic Technologists:
Anna Doornink, RGT, BioDiagnostics, Inc., River Falls, WI
Christa Hoffman, RGT, Iowa State University, Ames, IA
Crystal Mathisrud, RGT, BioDiagnostics, Inc., River Falls, WI

Registered Seed Technologists:
Shari Lafreniere, RST, Brett Young Seeds, Gilbert Plains, Canada

Research Members:
Reed Barker, Ph.D., Grass Genomics Testing, Salem, OR
Pegadaraju Venkatramana, Ph.D., BioDiagnostics, Inc., River Falls, WI

We are very pleased to announce that the following members have achieved additional accreditations:
Joyce Connolly, CGT Immunoassay, BioDiagnostics, Inc., River Falls, WI
Traci Heimer, CGT Herbicide Bioassay, Mycogen Seeds, Marshalltown, IA
DaNell Jamieson, RST, RGT, BioDiagnostics, Inc., River Falls, WI
Bradley Johnson, RST, RGT, AgReliant Genetics, Inc., Elmwood, IL
Jean Meyer, CGT Immunoassay, BioDiagnostics, Inc., River Falls, WI
Jeffrey Prischmann, CGT Immunoassay, North Dakota State Seed Lab, Fargo, ND

Goodbye and good luck to our friends and colleagues that have become inactive, you will be missed!
Sharon Cameron, RMI, Sorghum Partners, Inc., New Deal, TX
Wallace Chason, RMI, Florida Dept. of Ag. & Consumer Services, Tallahassee, FL
Sandra Hegna, RMI, Iowa State University, Ames, IA
Bruce Lang, RMI, Mycogen Seeds, Marshalltown, IA
Larry J. Prentice, RMI, SGS MWSS, Brookings, SD

Submitted by Anita Hall
Announcements

RESEARCH POSTERS AT AOSA/SCST ANNUAL MEETING

Individuals who have conducted research on germination, purity, cultivar identification, molecular techniques, statistical techniques, bioassays, vigor testing methods or other aspects of seed physiology are encouraged to present a poster at the AOSA/SCST Annual Meeting in St. Louis, MO. It is important that association members hear about new scientific approaches to seed quality evaluation and other seed related topics.

Please prepare an abstract using the guidelines below and send to Jack Peters, SCST Research Committee Chair, for publication in the Annual Meeting program. Indicate if the presentation is oral or poster.

A good, informative abstract presents the complete paper in miniature, and it should stand alone.

Abstract guidelines:
• State rationale for the study and objectives or hypotheses in one or two sentences
• Provide a brief description of materials and methods, key results, and their applications or conclusions
• Give the complete scientific name for plants and crops when first mentioned in the abstract.
• Provide common names and trade names of chemicals as appropriate, or other details that help explain the results
• Limit use of abbreviations, and define abbreviations that are used
• Do not cite figures, tables or references in the abstract
• Write in a single paragraph, and limit the abstract to 400 words or less
• Use Arial 12 point font size

Please include the author(s) name, address, institution or company. In the case of multiple authors for oral presentations, please indicate the corresponding author, their phone number and e-mail address and the individual who will be giving the presentation. Abstracts are to be submitted by e-mail as either a Word document or as a text file to: jyr23@aol.com. Please contact Jack Peters, SCST Research Chair, if you have any questions: 541-760-2109 or jyr23@aol.com.

AOSA/SCST RESEARCH FUNDING ANNOUNCEMENT 2010 REMINDER

The AOSA/SCST Research Committee is accepting proposals for the 2010 cycle. The deadline for submitting proposals is May 15, 2010. Please submit proposals to:

Brent Turnipseed
Professor/Manager, SDSU Seed Testing Lab
Ag Hall 227, Box 2207A
Brookings, SD  57007
Tel: 605-688-4590, Fax: 605-688-4013
Email: brent.turnipseed@sdstate.edu
Seed Lab Phone: 605-688-4589

Proposal details are available in the September issue of The Seed Technologist Newsletter or from Dr. Brent Turnipseed.
SEED SCIENCE AND TECHNOLOGY COURSE AVAILABLE ONLINE THROUGH OREGON STATE UNIVERSITY

Seed Science and Technology (CSS 420/520) is suitable for both upper undergraduate and graduate students, with slightly different work requirements. This course is open to all students no matter where they live. There are no residency requirements and many on-campus students enroll in this course, as well as students in other states and countries. Also, Extended Campus does not charge non-resident tuition; all students pay the same tuition and fees. Courses are asynchronous and available online as soon as the term starts. Course-work must be completed within the eleven-week quarter. No certificates are issued because college credit courses are listed on an Oregon State University transcript.

INSTRUCTOR:  Dr. Sabry G. Elias  
Sabry.Elias@oregonstate.edu  
Phone: 541-737-4799  

TEACHING ASSISTANT:  Kimberly Hanaway  
kimberly.hanaway@oregonstate.edu  
Phone: 541-737-5036

Course Content: The course focuses on the basic aspects of seed formation and development, and the main events that occur during germination and factors influencing them. It also compares types of seed dormancies, their causes, and methods of breaking them. In addition it explains the physiological aspects of seed deterioration, seed moisture relation and the relationship with storability. Finally, it provides an understanding of seed quality concept and how to evaluate the quality of seeds. Seed certification and law enforcement will be covered as well. There is a hands-on laboratory component that will teach technologies and methods of seed quality evaluation.

Course Justification: Seeds are the main source of nutrition for human, animals and birds since the beginning “I give you every seed-bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food” Gen 1:29. Understanding how seeds form, develop and grow is essential for any successful agricultural system. Students who plan to be seed scientists, agronomists, plant breeders, range managers, foresters, or soil scientists need to learn various physiological aspects of seed germination, dormancy, deterioration and quality. This course will provide an understanding of the principles of seed science and technology in order to better prepare them for future tasks in their professions.

Prerequisites: There are no prerequisites for the course. However, knowledge of biology, anatomy, and physiology will be helpful.

Course Structure: This 3-credit course involves 10 lectures and 8 laboratories. Each lecture and lab will focus on a specific topic and have a reading set mainly from the recommended textbook and the notes provided in the P.P. lectures and labs. The laboratory component of the course involves several hands-on “home” experiments that will need to be documented and included in laboratory reports.

Educational Objectives: To provide an understanding of various biological, morphological and physiological aspects and processes occurring in seeds during: a) formation and development, b) germination and maturation, c) dormancy, and d) deterioration; seed quality, including evaluation of seed viability, vigor, genetic and physical purity, and the relationship between laboratory tests and field performance; and, seed processing techniques including drying, storability, seed moisture relations, seed cleaning, enhancement, certification systems, and seed marketing.

For more information students can contact: Dr. Sabry G. Elias (Sabry.Elias@oregonstate.edu or 541-737-4799) or Oregon State University Extended Campus, Administrative Program Specialist, 800-667-1465.
Announcements

IOWA STATE UNIVERSITY WORKSHOPS

ISU is once again offering a series of workshops on seed conditioning and quality testing procedures this summer. The workshop dates are rapidly approaching, so we are sending this brief reminder in the event either you or a co-worker might be interested in the program. The 2010 workshop schedule is listed below and on the registration website listed below. These are small group sessions that feature a mix of classroom and “hands on” equipment operation in our pilot plant at the ISU Seed Science Center.

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Popcorn Conditioning</td>
<td>May 25-27</td>
</tr>
<tr>
<td>Color Sorting - Satake</td>
<td>June 7-8</td>
</tr>
<tr>
<td>Color Sorting - Satake</td>
<td>June 9-10</td>
</tr>
<tr>
<td>Commercial Seed Corn Conditioning</td>
<td>June 21-24</td>
</tr>
<tr>
<td>Seed Treatment</td>
<td>June 30-July 1</td>
</tr>
<tr>
<td>Soybean &amp; Small Grain Seed Conditioning</td>
<td>July 12-15</td>
</tr>
<tr>
<td>Soybean &amp; Small Grain Seed Conditioning</td>
<td>July 26-29</td>
</tr>
<tr>
<td>Gravity Separation</td>
<td>August 3</td>
</tr>
<tr>
<td>Gravity Separation</td>
<td>August 5</td>
</tr>
<tr>
<td>Research Seed Corn Conditioning</td>
<td>August 10-12</td>
</tr>
<tr>
<td>Seed Corn / Soybean Quality Testing</td>
<td>August 18-19</td>
</tr>
</tbody>
</table>

Routine workshop registration is handled by our staff in Continuing Education. Additional details, including a PDF version of the workshop brochure and on-line registration can be found on the ISU Extension web site at [http://www.ucs.iastate.edu/mnet/seedscience/home.html](http://www.ucs.iastate.edu/mnet/seedscience/home.html). Routine registration questions can be directed to Extension using the following contact information:

Iowa State University  
Continuing Education and Professional Development  
102 Scheman Building  
Ames, IA 50011-1112  
Phone: 515-294-6222, Fax: 515-294-6223  
Email: cepd-info@iastate.edu

You are also welcome to contact either Alan Gaul (515-294-4011, agaul@iastate.edu) or Mike Stahr (515-294-0117, mgstahr@iastate.edu) with questions or content suggestions regarding the workshop programs.

2010 VARIETY FLUORESCENCE LEVELS FOR RYEGRASS

The Association of Official Seed Certifying Agencies (AOSCA) Grass Variety Review Board report has been issued and the Variety Fluorescence Levels (VFL) for ryegrass recently revised. The 2010 list supersedes all previous lists and is available online: [http://www.aosca.org/VarietyReviewBoards/Grass/Grass.html](http://www.aosca.org/VarietyReviewBoards/Grass/Grass.html). The information is also posted on the AOSA website under the “Resources” menu tab and on the “Announcements” webpage.

If you have questions regarding the Report of the Current National Grass Variety Review Board (NGVRB) Variety Fluorescence Level (VFL) reviews, please contact, Debra Hignight, Chair of the VFL Subcommittee, email dhignight@central.com or, Neil Foster, Chair of the National Grass Variety Review Board at 605-688-4606 or e-mail neal.foster@sdstate.edu.
2010 ALL STATES NOXIOUS WEED SEED LIST

The 2010 All States Noxious Weed Seed List is now available online: http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRD3317318. You can also download a database of the All States Noxious Weed Seed list from the USDA-AMS SRTB (United States Department of Agriculture Agricultural Marketing Service Seed Regulatory and Testing Branch).

The USDA-AMS SRTB offers a listserv for email notifications and many publications are available online. Sign up on their website: www.ams.usda.gov/seed.

INVITATION TO BECOME A FRIEND OF THE SEED TECHNOLOGY JOURNAL

Support seed science research, and help us to improve the delivery and impact of the Seed Technology journal, the only peer reviewed, scientific journal focused on seed technology journal published in North America. Become a Friend of the Journal today!

Individuals, seed analysts, and companies/organizations are invited to support Seed Technology. By becoming a Friend of the Journal, you, your business, or organization will be acknowledged in each edition. Your sponsorship will help maintain a vibrant environment for the publication of current and cutting-edge seed research in Seed Technology. It will provide Seed Technology with the ability to innovate and develop online access as it serves the national and international seed industry.

The Seed Technology journal plays an important role in the seed industry by creating a link between researchers and seed technologists. This connection is increasingly important as seed has become the major delivery mechanism for advanced technologies. Seed Technology provides an essential international forum for discussing research and its applications.

Questions?
Anita Hall
Seed Technology Journal
101 East State St., #214
Ithaca, NY 14850 USA
Phone: 607-256-3313
Fax: 607-273-1638
Email: scst@twcny.rr.com
QUALITY COORDINATOR -
Quality Control Laboratory-1001117

Job Description: Dow AgroSciences LLC, based in Indianapolis, Indiana, USA, is a top-tier agricultural company that combines the power of science and technology with the "Human Element" to constantly improve what is essential to human progress. Dow AgroSciences provides innovative technologies for crop protection, pest and vegetation management, seeds, traits, and agricultural biotechnology to serve the world’s growing population. Global sales for Dow AgroSciences, a wholly owned subsidiary of The Dow Chemical Company, are $4.5 billion.

The Dow AgroSciences Quality Control Laboratory in Marshalltown, IA is seeking an Quality Coordinator. The candidate is expected to perform a variety of routine laboratory tests and have specialized skills working in a specific area of the Quality Control Lab. The selected candidate will maintain a general level of working knowledge and ability to function independently in all areas of the laboratory. Detailed instructions and training will be provided for new or unusual procedures.

Typical responsibilities will include:
• Support and comply with DOW/DAS EH&S/ Responsible Care initiatives.
• Responsible for daily organization of seed test scheduling and daily supervision of Lab personnel.
• Provide instruction and training of all QA staff in current seed testing procedures.
• Monitor QA data for completeness and accuracy on all seed batches tested.
• Provide support to the monitoring and supervision of all testing procedures and equipment operation.
• Provide leadership role in coordinating germination lab work, to include decision-coordinating work of others to meet core objectives.
• Provide internal customer information needs and problem solving needs.
• Problem solving for inaccurate sample information to facilitate LIMS system integrity.
• Provide training and development in the areas of test type, testing procedures, equipment, technology, and best lab practices.
• Promote corporate Mycogen QA objectives to assessing seed quality.
• Coordinate physiological seed testing activities to maintain company quality standards, and assure that these standards reflect the Association of Official Seed Analysts, International Seed Testing Association, Canadian Seed Law, and Federal Seed Act Rules.
• Participate in referee testing and experimentation to identify new test methods.
• Monitor and supervise all testing procedures for quality and quantity.
• Monitor and supervise working condition and repair for all testing equipment.
• Perform other duties as assigned/necessary to complete work.

Qualifications:
• Bachelors or Masters degree is required.
• Registered Genetic Technologist (RGT) or Certified Genetic Technologist (CGT) certificate status preferred.
• Minimum of 4 years comparable seed testing experience is required.
• Advanced system knowledge, e.g. SAP and LIMS or comparable experience, is highly desired.
• Working knowledge of immunoassay and bioassay testing is required.
• Working knowledge of state, federal and international seed laws is highly desired.
• Working knowledge of AOSA, ISTA, and Canadian Rules for Testing Seed is preferred.
• Must have knowledge and understanding of equipment necessary to lab work, i.e.: microscopes, scales, pipettes, ELISA kits and test strips, etc.
• Knowledge of basic math and ability to apply in daily activities is necessary.
• Computer proficiency including word processing, spreadsheet, and data base programs is highly desired.
• Organizational skills, leadership ability, proficient writing and public speaking skills are preferred.
• Ability to interact well with personnel at all levels is necessary.
• Ability to prioritize lab process flow is required.
• Must demonstrate ability to communicate and work effectively with diverse audiences that have various skill levels.
• Must be able to work in an analytical and independent mode with minimal supervision.
• Ability to develop and maintain effective working relationships is critical.

Click here to apply online
RESEARCHER SEED PHYSIOLOGY

The Seed Technology department conducts research in the field of seed physiology, seed technology and seed pathology. The Researcher Seed Physiology will lead a small team to develop seed treatments such as by priming to improve the germination and seedling quality of our vegetable portfolio. Previous work experience is a plus but is not a prerequisite. You will lead the implementation of the protocols developed by your team into the Seed Germination Lab. Also, you will review and keep yourself updated with new rules, regulations, guidelines from certification programs which are relevant for our protocols and be in charge of their implementation in the Seed Germination Lab. You will also be expected to closely collaborate with various teams in Enza Zaden. You are expected to initiate research (within your team or with other internal or external collaborators) in the field of seed physiology and its relationship with breeding, seed production, and the different seed treatments such as priming, pelleting, coating, sorting and disinfection. You are expected to be updated about the latest advances in seed physiology and their applications to Enza Zaden through literature, conferences and scientific meetings. You will actively identify points for improvement in the internal processes relevant to seed physiology and also interact in this aspect with the Manager Quality Assurance. This function reports to the Manager Seed Technology.

We are looking to recruit an enthusiastic and creative leader with a M.Sc. or Ph.D. in plant or seed physiology. Knowledge of molecular biology and/or genetics is a plus. You have the ability to organize your work and the work of other people and teams. You are a good oral and written communicator that is able to start and lead multi-disciplinary teams to address and solve problems related to seed physiology and seed quality. You are able to work independently but in line with the overall goals of the company. You are able to act as an advisor to other teams or upper management on issues related to seed physiology. English is a must, Dutch is a plus.

Are you interested in this multifaceted post within a growing and enterprising international breeding company? Besides an attractive salary and good terms and conditions, we offer you a challenging future.

Enza Zaden is a leading independent breeder of innovative vegetable varieties. Our head office is located in the heart of the worldwide seed industry: Enkhuizen. Thanks to the knowledge, efforts and enthusiasm of over 1100 employees worldwide, we develop tasty vegetable varieties for local markets. We also sell and distribute quality seeds from those varieties. Our successes include top sellers such as the Campari tomato, the Sweetgreen paprika and the Eazy Leaf lettuce.

Interested? Send your application to the HRM department, e-mail: vacatures@enzazaden.nl. For more information about our company and this vacancy, visit www.enzazaden.nl or contact Karin Boon, HR-Adviser: tel. +31 (0)228 350 100.

Enza Zaden will not enter into correspondence with other commercial parties.
POSITION ANNOUNCEMENT
Division of Regulatory Services ● College of Agriculture ● University of Kentucky
Lexington, KY 40546-0275

TITLE: Coordinator of Seed Regulatory Program (Agriculture Regulatory Specialist Senior)

RESPONSIBILITIES: Provide leadership in administering the Kentucky Seed Law and Regulations. Carry out an effective regulatory program for the Commonwealth of Kentucky. The goal is to ensure consumer protection for purchasers of seed products and a fair marketplace for firms engaged in manufacture, distribution and sale of seed products. Specific responsibilities include:

- Communicate with the regulated industry to promote cooperation and voluntary compliance. Provide essential communications that ensure compliance and enhance seed quality.
- Collaborate to direct monitoring, sampling and enforcement activities of the inspection staff. Initiate and oversee ordinary and non-routine investigations in an impartial and timely manner.
- Work cooperatively with the laboratory coordinator and staff to establish testing for critical components and review of official sample results. Review laboratory reports and issue compliance actions based on analytical results.
- Issue permits and registrations annually to dealers and seed labeler. Supervise the seed tonnage reporting system to monitor and collect quarterly reporting fees.
- Review label information for compliance and publish annual report of activities.
- Work cooperatively with the USDA-AMS Seed Regulatory and Testing Branch to enforce the Federal Seed Act.
- Periodically review and amend pertinent laws and regulations to ensure timely, fair and consistent regulation. Keep industry stakeholders and administration advised of changes in laws and/or regulations that may affect policies and practices.
- Assist in the design and implementation of inter-Divisional and program-specific data management systems.
- Participate in state, regional and national professional and trade organizations that relate to seed regulatory programs.
- Maintain liaison, provide leadership and work cooperatively with the Kentucky Seed Improvement Association, the Kentucky Foundation Seed Project, the Kentucky Cooperative Extension Service and other groups to promote effectiveness, understanding and support of the seed regulatory program.

QUALIFICATIONS: Ph.D. or M.S. in an agricultural discipline or equivalent experience in a regulatory or seed industry area. Must possess oral and written communication skills, leadership and managerial abilities. Proficiency in the use of computers and information management systems is essential. This position is located on the University of Kentucky campus, Lexington.

GENERAL INFORMATION: Information about the Division of Regulatory Services and its’ programs is available at www.rs.uky.edu

APPLICATIONS: To apply for job SM530072, a UK online application must be submitted at: http://www.uky.edu/HR/UKjobs/ (Quick link to this position: https://ukjobs.uky.edu/applicants/Central?quickFind=218978). If you have questions, contact HR/Employment, phone (859) 257-9555, press 2 or email ukjobs@email.uky.edu. The application deadline is June 1, 2010 or until a suitable candidate is chosen. The University of Kentucky is an equal opportunity employer and encourages applications from minorities and women.
2010 AOSA—SCST JOINT MEETING

The 2010 AOSA-SCST Annual Meeting is being hosted by the Illinois Seed Analysts in St. Louis, MO, June 5 - June 10, 2010. The meeting is an excellent opportunity for you to participate in all the activities AOSA and SCST offer. The convention schedule is filled with committee meetings, Referee Project presentations, Research Symposium, the Seed Issues Forum, Open Rules Committee Meeting, Long Range Planning and Business Meetings. The meeting will also offer many opportunities to interact and network with your fellow seed analysts and seed laboratory vendors.

Preceding the meeting are a Seedcalc statistics workshop, Genetic Technology Workshop, and a Flower Seed Workshop. Workshop agendas can be viewed online. There is still space available in all three workshops, register now if you wish to attend one of these informative and educational sessions.

If you have not registered for the meeting or reserved your hotel room please immediately contact:

Steve Beals  
Phone: (217) 359-4053  
sbeals@ilcrop.com

******Please note*******

The deadline for signing up for the Monsanto Tour and dinner is Friday May 14, 2010. Registrants signing up after this time will not be allowed to take the Monsanto Campus Tour. This is to allow Monsanto time to be properly prepared for the tour. Please make sure to indicate on the registration form if you wish to participate in the tour:


See you in St. Louis!!
## 2010 Annual Meeting St. Louis, MO—Draft Agenda

### Friday 6/04/2010
- **2:00 pm - 5:00 pm** Registration
- **8:00 am - 5:00 pm** Statistics Workshop: Seedcalc
- **6:00 pm - 6:30 pm** Meeting with RST Exam Candidates

### Saturday 6/05/2010
- **7:00 am - 5:00 pm** Registration
- **7:00 am - 5:00 pm** Business Office
- **7:45 am - 6:00 pm** Genetic Technology Workshop
- **8:00 am - 5:00 pm** AOSA Board Meeting
- **8:00 am - 2:00 pm** RST Exam
- **8:00 am - 5:00 pm** RST Exam Grading
- **10:00 am - 10:30 am** Morning Break (Workshop)
- **12:00 pm - 1:00 pm** Lunch (Workshop & Exam)
- **2:30 pm - 3:00 pm** Afternoon Break
- **6:00 pm - 7:00 pm** RST Exam Results
- **7:00 pm - 8:00 pm** Meeting with RGT Exam Candidates

### Sunday 6/06/2010
- **7:00 am - 5:00 pm** Registration
- **7:00 am - 5:00 pm** Business Office
- **7:30 am - 6:00 pm** Flower Seed Workshop
- **8:00 am - 2:00 pm** RGT Examination
- **8:00 am - 5:00 pm** RGT Grading
- **8:00 am - 5:00 pm** SCST Board Meeting
- **10:00 am - 10:30 am** Morning Break
- **12:00 pm - 1:00 pm** Lunch (Workshop & Exam)
- **12:00 am - 5:00 pm** Exhibitor Set-up
- **2:30 pm - 3:00 pm** Afternoon Break
- **7:00 pm - 8:00 pm** RGT Exam Results
- **7:00 pm - 8:00 pm** Joint Rule, Referee and Research Subcommittee Chair Meeting

### Monday 6/07/2010
- **7:00 am - 5:00 pm** Registration
- **7:00 am - 5:00 pm** Business Office
- **7:00 am - 5:00 pm** Bean Buddy Walk-Run
- **8:00 am - 5:00 pm** Exhibits
- **8:00 am - 9:00 am** Newsletter Committee
- **8:00 am - 9:00 am** Proficiency Testing Committee
- **9:00 am - 10:00 am** AOSA By-laws Committee
- **9:00 am - 10:00 am** Purity Committee
- **10:00 am - 12:00 pm** Opening Session and Brunch
- **12:30 pm - 2:30 pm** Affiliates/Liaison Meeting (closed)
- **12:30 pm - 2:30 pm** Rules Committee (closed)
- **12:30 pm - 3:00 pm** Research Papers
- **2:15 pm - 2:30 pm** Afternoon Break
- **3:00 pm - 9:00 pm** Monsanto Tour & Dinner

### Tuesday 6/08/2010
- **7:00 am - 5:00 pm** Business Office/Registration
- **7:00 am - 8:00 am** Breakfast
- **8:00 am - 5:00 pm** Exhibits
- **8:00 am - 10:00 am** Genetic Technology Committee
- **8:00 am - 9:00 am** Conservation and Reclamation Seed Committee
- **8:00 am - 9:00 am** SCST Ethics Committee
### 2010 Annual Meeting St. Louis, MO—Draft Agenda

#### Tuesday 6/08/2010

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<th>Time</th>
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<td>9:00am - 10:00am</td>
<td>International Committee</td>
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<tr>
<td>9:00am - 10:00am</td>
<td>Moisture Testing Committee</td>
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<tr>
<td>10:00am - 10:30am</td>
<td>Morning Break</td>
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<tr>
<td>10:15am - 11:15pm</td>
<td>Germination and Dormancy Committee</td>
</tr>
<tr>
<td>10:15am - 11:15pm</td>
<td>Cultivar Purity/GMO Committee</td>
</tr>
<tr>
<td>10:15am - 12:15pm</td>
<td>Examination Committee (closed)</td>
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<tr>
<td>11:15am - 12:15pm</td>
<td>Lab Standards &amp; Documentation Committee</td>
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<tr>
<td>11:15am - 12:15pm</td>
<td>Statistics Committee</td>
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<tr>
<td>12:00pm - 1:00pm</td>
<td>Lunch New AOSA &amp; SCST Member Recognition</td>
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<tr>
<td>1:00pm - 2:00pm</td>
<td>Immunoassay Working Group</td>
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<tr>
<td>1:00pm - 2:00pm</td>
<td>Tree and Shrub Committee</td>
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<tr>
<td>1:00pm - 3:00pm</td>
<td>Rules Issues and Review Committee</td>
</tr>
<tr>
<td>2:00pm - 3:00pm</td>
<td>Herbicide Bioassay Working Group</td>
</tr>
<tr>
<td>2:00pm - 3:00pm</td>
<td>Journal Committee</td>
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<tr>
<td>3:00pm - 4:00pm</td>
<td>Teaching and Training Committee</td>
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<tr>
<td>3:00pm - 4:00pm</td>
<td>Vigor Committee</td>
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<tr>
<td>4:00pm - 4:30pm</td>
<td>Afternoon Break</td>
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<tr>
<td>4:15pm - 6:00pm</td>
<td>Referee Projects/Buzz Session</td>
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<tr>
<td>6:30pm - 8:30pm</td>
<td>Poster Session/Seed Issues Forum Reception</td>
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#### Wednesday 6/09/2010

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<th>Committee/Group</th>
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</thead>
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<td>7:00am - 8:00pm</td>
<td>Business Office/Registration</td>
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<tr>
<td>8:00am - 5:00pm</td>
<td>Exhibits</td>
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<tr>
<td>7:00am - 8:00am</td>
<td>Breakfast</td>
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<tr>
<td>8:00am - 9:00am</td>
<td>Flower Seedling Committee</td>
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<tr>
<td>8:00am - 9:00am</td>
<td>PCR Working Group</td>
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<td>8:00am - 9:00am</td>
<td>Seed Pathology Committee</td>
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<tr>
<td>9:00am - 12:00am</td>
<td>Long Range Planning Session</td>
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<td>10:00am</td>
<td>Morning Break</td>
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<tr>
<td>12:00pm - 1:00pm</td>
<td>Lunch Anna Lute Award Presentation</td>
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<tr>
<td>1:00pm - 2:00pm</td>
<td>Tetrazolium Committee</td>
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<tr>
<td>1:00pm - 2:00pm</td>
<td>Electrophoresis Working Group</td>
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<td>1:00pm - 2:00pm</td>
<td>Handbook Committee</td>
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<td>2:00pm - 2:15pm</td>
<td>Afternoon Break</td>
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<tr>
<td>2:15pm - 5:15pm</td>
<td>Open Rules Committee</td>
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<td>6:00pm - 7:00pm</td>
<td>Social Hour</td>
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<td>7:00pm - 10:00pm</td>
<td>Banquet</td>
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#### Thursday 6/10/2010

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<tr>
<td>7:00am - 8:00pm</td>
<td>Business Office/Registration</td>
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<tr>
<td>8:00am - 10:00am</td>
<td>Exhibitors break down</td>
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<tr>
<td>7:00am - 8:00am</td>
<td>Breakfast</td>
</tr>
<tr>
<td>8:00am - 10:00am</td>
<td>Joint AOSA-SCST Rules Voting &amp; Business Meeting</td>
</tr>
<tr>
<td>10:00am</td>
<td>Morning Break</td>
</tr>
<tr>
<td>10:15am - 12:15pm</td>
<td>AOSA Business Meeting</td>
</tr>
<tr>
<td>12:15pm - 1:15pm</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:15pm - 3:15pm</td>
<td>SCST Business Meeting</td>
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</tbody>
</table>
This informal, dynamic session has become a favorite event at the annual meeting. This year we have a wide variety of interesting topics and presentations. The tabletop displays along with the poster presentations address current seed testing issues, concerns, and innovations.

<table>
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<td>Is Sodium Hydroxide No Longer Effective?</td>
<td>Victor Shaul, Nancy Jones</td>
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<td>Wheatgrass Review</td>
<td>Bridget Westfall</td>
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<td>2010 Virtual Soybean Evaluation Referee</td>
<td>Mike Stahr</td>
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<tr>
<td>Canada’s Weed Seed Order - Seed Identification Fact Sheets</td>
<td>Janine Maruschak</td>
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<tr>
<td>Comparison of Seedling Germination in Pathogen-Infected Browntop Millet with Tetrazolium Viability Test</td>
<td>Aida Galarza, Cindy Finneseth</td>
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<tr>
<td>Seed Technology Journal</td>
<td>Cindy Finneseth</td>
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<tr>
<td>Comparison of Pretreatments and Testing Conditions for Germination of Lomatomium Species</td>
<td>Victor Vankus</td>
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<td>International Committee</td>
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<td>Can You See It?</td>
<td>Donna Grubisic</td>
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<td>Polymerase Chain Reaction</td>
<td>Benjamin &quot;Benji&quot; Kaufman</td>
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<tr>
<td>The Values and Benefits of Genetic Purity Seed Testing Using Isoelectric Focusing (IEF)</td>
<td>Craig Nelson, Wendy Zillgitt</td>
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<tr>
<td>Purity Study of Eriogonum sp. PSU 29 of Alternative PSU</td>
<td>Ransom Seed Lab</td>
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<td>Improving Consistency of Inert Matter Separation in Tall Fescue Using a Uniform Blowing Procedure</td>
<td>Sabry G. Elias, Ph.D.</td>
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<tr>
<td>Voice Your Opinion - Demonstration of Voting/Polling Software</td>
<td>Michael Gill, Kathleen Willey</td>
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<tr>
<td>Standardized Testing in Natives</td>
<td>Heidi Jo Larson</td>
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<tr>
<td>AOSA/SCST Table</td>
<td>Anita Hall</td>
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<tr>
<td>Tetrazolium Handbook</td>
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The value of fluorescence and grow-out tests in differentiating annual and perennial types of ryegrass

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Both the fluorescence (FL) and the grow-out (GO) tests have been used to differentiate between annual ryegrass (*Lolium multiflorum* Lam.) and perennial ryegrass (*L. perenne* L.) for many years. There is a perception, however that the FL test over estimates the contamination of perennial ryegrass (PRG) with annual ryegrass (ARG), and that the GO test under estimates that contamination. This study was conducted at Oregon State University Seed Laboratory to measure the bias of FL and GO tests in distinguishing between annual and perennial types in 8,231 PRG samples representing 224 cultivars grown over a three-year period (2007-2009) in Oregon. The Varietal Fluorescence Level (VFL) value of each cultivar (i.e., the original fluorescent value of each cultivar that was described by the plant breeder who developed each cultivar) was used as a reference point to measure the bias of FL and GO tests. Standard deviations and T-Tests were used to measure the variation among VFL, FL and GO test results and to compare the means of tests. In 2007, the FL test results of 93% of the 3,452 PRG samples tested were within 3% of their respective VFL values. In 2008, the FL test results of 95% of the 3,372 PRG samples tested were within 3% of their respective VFL values. In 2009, the FL test results of 93% of the 1,407 samples tested were within 3% of their respective VFL values. The 3% FL tolerance value (to account for random sampling and other systemic variation) used in this study was adapted from the Oregon Seed Certification quality standard. When a FL test result of a PRG sample exceeds the 3%...
Ryegrasses are important worldwide for forage and turf use. Those of highest economic value are taxonomically classified as subspecies of perennial ryegrass (*Lolium perenne* L.). Perennial ryegrass used for turf in the U.S. is classified as *L. perenne* L. *ssp. perenne*. There are two short-lived subspecies, often called annuals, classified as *L. perenne* L. *ssp. multiflorum* (Lam.) Husnot: Italian ryegrass (*L. perenne* L. *ssp. multiflorum* var. *italicum*) and the Westerwolds (*L. perenne* L. *ssp. multiflorum* var. *westerwoldicum*). These close taxonomic relationships make it difficult to separate these grasses in seed labs. In areas such as Oregon where intensive seed production occurs, the “annual-types” often contaminate the more economically important “perennial-types” through seed mixture, pollen flow, or both. Seedling root fluorescence (SRF) has been used to distinguish “annual-types” from perennial ryegrass since the 1930s, but at times the test has been unreliable and overestimates the amount of “annual-type” contamination. The test is based on a loose genetic linkage among the gene(s) responsible for SRF and those responsible for other “annual-like” characteristics. We examined genes involved in flowering control and vernalization responses more closely associated with growth type, and found two genes were effective in predicting growth type. DNA samples were extracted from leaf tissue harvested from SRF-tested seedlings and were analyzed by real-time PCR using Allelic Discrimination (AD) to differentiate between alleles (alternate forms of a gene). Twenty cultivars were examined to validate the AD protocol. Following the SRF test, all seedlings were transplanted to a growth chamber and grown under continuous, high intensity light for a grow-out test (GOT) that lasted for 84 days. Flowering rate approached a plateau at about 70 days for those plants that had SRF as seedlings. These results supported the proposal that the GOT should be longer than the suggested 42 days if it is to be effective. Further, the rate of SRF was highest in the plants that headed earliest and was lower in later heading plants. The minimum SRF level was 30% over all the plants tested, demonstrating that the SRF test lacks accuracy in predicting contamination. In contrast, the AD test based on two flowering genes, *Vrn-1* and *ID1* detected growth type differences equivalent to a 70day GOT, with less than 1% error rate. Data presented here demonstrates that the AD test is an effective and rapid method to predict growth type contamination in perennial ryegrass.
Adventitious presence (unintended presence) of annual ryegrass in perennial ryegrass seed lots causes significant economic losses to grass seed industry. International Seed Testing Association (ISTA) recommends the usage of SRF (Seedling Root Fluorescence) and/or grow–out test procedures to estimate the levels of annual ryegrass presence in perennial ryegrass seed lots. However, both the SRF and grow–out tests are labor intensive and time-consuming. Furthermore, the SRF test produces inaccurate results and is environmentally influenced. Increasing numbers of perennial seed lots are rejected each year due to the inaccuracy of the SRF test. Thus, there is a clear need for a better testing procedure that could meet the diagnostic needs for ryegrass in an efficacious, rapid and cost-effective manner. Towards this end we have developed a high throughput quantitative PCR (Q-PCR) based diagnostic tool that effectively detects the presence of annual ryegrass seed contamination in perennial ryegrass lots. The DNA test is designed using an insertion/deletion (In-Del) site in a ryegrass gene involved in regulating the vernalization response of ryegrass. This new DNA test is more sensitive, accurate and cost-effective in detecting annual and intermediate type contamination in perennial ryegrass with a high sensitivity of 0.04% in a sample size of 5000 seeds. Use of larger sample sizes (12.5-fold higher compared to SRF test) provided additional accuracy in detecting the level of contamination. This method has been validated on 68 perennial, 26 annual and 14 intermediate ryegrass varieties with consistent results.
Calendar

2010

May
31– June 2 ISF World Seed Congress, Calgary, Canada. Information: http://www.amseed.com/

June
4-10 AOSA/SCST Annual Meeting, St. Louis, MO. Information: http://www.aosaseed.com/ or http://www.seedtechnology.net
7-8 ISU Color Sorting - Satake Workshop, Iowa State University, Ames, IA. Information: http://www.ucs.iastate.edu/mnet/seedscience/home.html.
9-14 ISTA Workshop on Viability and Germination Testing, Karlsruhe, Germany. Information: www.seedtest.org
11-13 ISTA Workshop on Species and Variety Testing / Protein electrophoresis, Hanover, Germany. Information: www.seedtest.org
16-22 29th ISTA Congress 2010, Cologne, Germany. Information: www.seedtest.org
30-July 1 Seed Treatment Workshop, Iowa State University, Ames, IA. Information: http://www.ucs.iastate.edu/mnet/seedscience/home.html.

July

August
3 Gravity Separation Workshop, Iowa State University, Ames, IA. Information: http://www.ucs.iastate.edu/mnet/seedscience/home.html.
5 Gravity Separation Workshop, Iowa State University, Ames, IA. Information: http://www.ucs.iastate.edu/mnet/seedscience/home.html.
10-12 Research Seed Corn Conditioning Workshop, Iowa State University, Ames, IA. Information: http://www.ucs.iastate.edu/mnet/seedscience/home.html.
18-19 Seed Corn / Soybean Quality Testing Workshop, Iowa State University, Ames, IA. Information: http://www.ucs.iastate.edu/mnet/seedscience/home.html.