

Teaching and Training Committee Resource Guide

This paper was written by the Teaching and Training Committee to help trainers help prospective test takers prepare for certification tests and to help prospective test takers find resources. This document is a work in progress and additions and deletions will be made to reflect changes happening in seed testing. Every effort will be made by the committee to add resources used by seed analysts (as they become known) to this document. Everyone is encouraged to submit ideas or resource names to the committee so this information can be shared through this document with everyone.

A Parable

Jack was organizing his paperwork to send off to the executive director in New York. Family life had been rough lately with the kid's tournaments just getting over and the youngest finally getting over tonsillitis. He was going to make the April fifteenth deadline in any event, despite the hectic life of late.

Work at the seed laboratory had been busy with harvest season over, but with shipping season starting now, it was even worse. He was feeling confident in his ability for taking the registered seed technologist exam since he did his company's field crops' purities and germinations 9 to 5, every weekday. Although the company's RST was helpful when asked questions, she was gone a large part of the time involved with the company's other businesses. Jack kept in touch with Jill, another aspiring test-taker, who worked for another field crop company down the road. They swapped identification samples and helped each other build their herbariums. They were both in touch with McKay, a guy in their regional seed association, who had taken the test a few years back. Although McKay knew it was wrong to disclose anything on the test, once in awhile he would inadvertently let slip something that was on the test.

Jill had a Bachelor's degree in plant science. She had been studying hard at home at nights after the kids were tucked in. She had a copy of study questions from 1968 that she got through a friend of a friend. It was easy to get this, but she was unsure about how to go about getting other resources. Her Internet connection was so slow at home and she never had time to download anything at work. Yet, she was sure her hour of study on Monday, Wednesday and Friday would be enough. She knew she wouldn't be one of those test takers that would fail multiple times before she finally passed, after all, those 4 years at college should pull her through.

This story is given to illustrate some common misconceptions about how someone should prepare to take the certification test(s) in the Society of Commercial Seed Technologists or the Association of Official Seed Analysts groups.

Let's scrutinize this story a little bit and see what misconceptions lie within:
Misconceptions:

1. "He was going to make the April fifteenth deadline." Deadline for application for taking the RST exam is March first.
2. "He did his company's field crops' purities and germinations 9 to 5, every weekday." The tests are comprehensive. The scope of the test is very broad, not limited to only some areas of seed testing or crop types.

3. “The company’s RST was helpful.” A test candidate must not become complacent in spite of having other RSTs nearby.
4. “Jack kept in touch with Jill.” Relying on only one other person for critical information increases the chances of misinformation happening.
5. “Once in awhile he would inadvertently let slip something that was on the test.” Gossip is hardly ever reliable, (even if it is from a former test-taker.)
6. “She had a copy of study questions from 1968.” Old information is often worthless.
7. “Never had time to download anything.” The use of modern information technology is a must. It cannot be avoided.
8. “Her hour of study on Monday, Wednesday and Friday would be enough.” Planning to take these test(s) are a massive time commitment.
9. “She knew she wouldn’t be one of those test takers that would fail.” There is no shame in taking the test over.
10. “Those 4 years at college should pull her through.” Academic and practical experiences are both crucial.

Advice for avoiding these mistakes:

Every person who wants to take the exam(s) should get the RST Study Guide. It can be found (for free) on the SCST web site:

<http://www.seedtechnology.net/publications.htm>

There, please read and follow the “Requirements for Membership.” The deadline for application is clearly stated under this section. The Study Guide will acquaint you with most everything you need or that is expected from you. Section One of the Study Guide is for persons studying under a tutorial. Even if you are not under tutelage, this section provides terrific resources that should be explored.

The Study Guide gives the impression that the tests are comprehensive and they are! Study the Association of Official Seed Analysts’ Rules for Testing Seed. The exam(s) will have questions derived from the Rules for Testing Seed. Any topic discussed in the Rules for Testing Seed is “fair game” for a question.

Be sure to practice writing out testing procedures. You should be able to clearly and concisely describe how to divide down a sample, or the steps in a fluorescence test, for example. Practicing writing out your answers will help you to organize your thoughts and to remember the information.

Remember that you should be self-reliant in your studies. Don’t count on your supervisor who is an RST or CSA analyst. If they can’t help you find the answer you are searching for, track down someone who can help you.

These persons have volunteered to help you or help you find help:

If you live in the Northwest, contact Brenda Watts - brwatts@dairylandseed.com

If in the Southwest, contact Jane Kohn - jane.kohn@incotec.com

If in the Midwest, contact Harold Armstrong –

Harold.R.Armstrong@monsanto.com

If in the Southeast, contact Aida Galarza – Aida.Galarza@agr.georgia.gov

If in the Northeast, contact Christine Young - cyoung@johnnyseeds.com

In fact, the more people in seed testing that you can become acquainted with, the better. Don't become too isolated and only interact with just a few colleagues. Search out contacts through regional seed groups, business contacts, etc. Don't be afraid to pick up the phone; seed analysts are a very friendly and helpful group. Again, the people listed above may be able to help you connect with other RST, CSA, and other certified analysts. Academic classes that you may have had are good and attending new ones can be beneficial. However, practical experience with a variety of crop types and test types will also pay great benefits.

Remember, the test is changed every year. No two tests have ever been the same. That means any gossip you hear about the test is just that, gossip. Changes in the Rules for Testing Seed have occurred frequently, and sometimes substantially, which requires everyone to stay abreast of such changes. The test will likewise reflect such changes. Don't rely on old information and certainly not on old gossip.

Keep on top of changes by going on the Internet to web sites. Appendix A lists some of particular value. Visit them often.

Finally, and most importantly are these two things. Know that a lot of time is necessary to prepare for this test and don't become discouraged!

Self Help Literature

There is literature available to give tips on test taking, study techniques, and time management. Many tidbits such as, "Questions asking for short answers can be fully answered in two or three sentences," as David Johnston says, can be found in these types of self-help books.

A few examples of these types of books that are available at bookstores are:

Test Taking Power Strategies by Learning Express Editors

The Secrets to Taking Any Test by Judith N Meyers

Find Your Focus Zone by Lucy Jo Palladino

Essential Publications for Students and Trainers

(Download order form for AOSA publications at

<http://www.seedtechnology.net/publications.htm>)

1. Society of Commercial Seed Technologists' Study RST/CVT/CPT Study Guide
2. Society of Commercial Seed Technologists' Seed Technologist Training Manual and Seed Technology DVDs.
3. Current edition of the Association of Official Seed Analysts' Rules for Testing Seeds, Volumes I, II, III, and IV. These are amended annually and are available October first of each year.
4. Current edition of the Association of Official Seed Analysts' Seed Vigor Testing Handbook, Contribution Number 32., Edited by Riad Z. Baalbaki, Sabry G. Elias, Julio Marcos-Filho and Miller B. McDonald. Current edition of the Association of Official Seed Analysts' Tetrazolium Testing Handbook, Contribution Number 29.
5. Current edition of the Association of Official Seed Analysts' Seed Moisture Testing Handbook, 2007.
6. Principles of Seed Science and Technology by Lawrence O. Copeland and Miller F. McDonald. (Available through booksellers such as Amazon, Barnes and Noble, etc...)

Out of Print and Hard to Find Publications (Very useful if available)

1. Principles and Practices of Seed Storage, by Oren Justice and Louis Bass
2. Identification of Crop and Weed Seeds, Agricultural Handbook No. 219. By the United States Department of Agriculture.
3. Manual for Testing Agricultural and Vegetable Seeds, Agricultural Handbook No. 30. By the United States Department of Agriculture.
4. 1948 Yearbook of Agriculture, Grass. By the United States Department of Agriculture.
5. 1961 Yearbook of Agriculture, Seeds. By the United States Department of Agriculture.
6. Manual of the Grasses of the United States, by A.S. Hitchcock
7. Seed Identification Manual, by Alexander C. Martin and William D. Barkley
8. Government Publications available at:
<http://naldr.nal.usda.gov/NalWeb/SearchAdv.aspx>

Formal Courses Available

These programs offer traditional as well as distance learning options.

1. The STEP seed technology program at Colorado State University:
<http://step.colostate.edu/>
2. Graduate course from Iowa State University <http://www.seedgrad.iastate.edu/>
3. Oregon State undergraduate program - <http://seedlab.oregonstate.edu/osu-seed-science-web-course>
4. Ohio State undergraduate program - <http://www.ag.ohio-state.edu/~seedsci/index.html>
5. Mississippi State graduate program:
<http://www.pss.msstate.edu/students/prospective.html>
6. Bachelor or Master credit class in seed vigor from University of Kentucky:
<http://www.ca.uky.edu/>
7. Undergraduate credit classes in seed science from University of North Carolina:
http://www.cropsci.ncsu.edu/personnel/spears_jan/

Seasonal Workshops

There are a handful of seasonal workshops that are given around the country. They are usually held around the same time every year and are great places to learn about differing crops and to network with other seed analysts. Consider attending some of these:

Iowa State Workshop, usually held in the spring. - <http://www.ucs.iastate.edu/>

Federal Seed School in Gastonia, North Carolina, held biannually; summer and fall -
<http://www.ams.usda.gov/>

Idaho Seed Analyst Association Workshop, usually held in Spring or Summer – Contact Brenda Watts at: isaa19782009@hotmail.com

Front Range Seed Analysts quarterly meetings - <http://www.frsa.org/NextMeeting.html>

Northeast Seed Analysts Workshop, usually held in the fall – Contact Johnny Zook at:
jzook@state.pa.us

Oregon State Seed School, usually held in the spring -
<http://seedlab.oregonstate.edu/workshops>

Annual Joint Meeting of the AOSA/SCST

It is strongly suggested that every effort be made to attend the annual convention. It is held in a different state every year. Current information about the convention's location can be found at: <http://www.seedtechnology.net/workshops.htm>

Seed Identification Resources

http://www.seedtechnology.net/seed_library.htm To request seed samples from the SCST Seed Library

<http://plants.usda.gov/index.html> USDA Natural Resources Conservation Service. (To view seed images, select "Image Gallery," and search by photographer Steve Hurst.

http://www.ag.ohio-state.edu/~seedbio/seed_id/ The University of Ohio Department of Horticulture and Crop Science Seed ID

http://www2.dijon.inra.fr/hyppa/hyppa-a/hyppa_a.htm HYPPA – Weed Science & Agronomy, INRA-Dijon

<http://seeds.eldoc.ub.rug.nl/root/?pLanguage=en> Netherlands Digital Seed Atlas

<http://theseedsite.co.uk/> The Seed Site (UK)

<http://www.usna.usda.gov/Research/NationalSeedHerbarium.html#> The United States National Arboretum

<http://www.eeob.iastate.edu/research/iowagrasses/index.html> Grasses of Iowa

http://www.cdfa.ca.gov/phpps/ipc/weedinfo/winfo_photogal-frameset.htm California Department of Food and Agriculture

<http://keys.lucidcentral.org/keys/v3/FNWE2/> Federal Noxious Weed Disseminules of the United States

Appendix A

Web sites to frequent

Association of Official Seed Analysts - <http://www.aosaseed.com/>

Society of Commercial Seed Technologists - <http://www.seedtechnology.net/>

Items of Interest in Seed Control – <http://www.ams.usda.gov/seed>

Commercial Seed Analyst Association of Canada - <http://www.seedanalysts.com/>

Appendix B

Directory of Web Sites

<http://aggie-horticulture.tamu.edu>

<http://ic2.pbbase.com>

<http://keys.lucidcentral.org/keys/v3/FNWE2/>

<http://naldr.nal.usda.gov/NalWeb/SearchAdv.aspx>
http://naldr.nal.usda.gov/NALWeb/Agricola_Link.asp?Accession=CAT74419459
<http://oardc.ohio-state.edu>
<http://plants.usda.gov/index.html>
<http://seedlab.oregonstate.edu/osu-seed-science-web-course>
<http://seedlab.oregonstate.edu/workshops>
<http://seeds.eldoc.ub.rug.nl/root/?pLanguage=en>
<http://step.colostate.edu/>
<http://theseedsite.co.uk/>
http://www.ag.ohio-state.edu/~seedbio/seed_id/
<http://www.ams.usda.gov/seed>
<http://www.aosaseed.com/>
<http://www.ars-grin.gov>
<http://www.ca.uky.edu/>
http://www.cdfa.ca.gov/phpps/ipc/weedinfo/wininfo_photogal-frameset.htm
<http://www.css.msu.edu>
<http://www.eeob.iastate.edu/research/iowagrasses/index.html>
<http://www.fao.org/icatalog/inter-e.htm>
<http://www.forestryimages.org>
<http://www.frsa.org/>
<http://www.grainscanada.gc.ca>
<http://www.oardc.ohio-state.edu/seedid/>
<http://www.oldthingsforgotten.com>
<http://www.pss.msstate.edu/students/prospective.html>
<http://www.seedanalysts.com/>
<http://www.seedgrad.iastate.edu/>
<http://www.seedtechnology.net/>
<http://www.seedtechnology.net/publications.htm>
http://www.seedtechnology.net/seed_library.htm
<http://www.ucs.iastate.edu/>
<http://www.usna.usda.gov/Research/NationalSeedHerbarium.html#>
http://www2.dijon.inra.fr/hyppa/hyppa-a/hyppa_a.htm