

**STREAMLINING GRASS SEED EXPORT SAMPLING  
AND TESTING REQUIREMENTS  
FY 2010**

Grass seed is an important specialty crop export for Oregon and nearby states. Thousands of people, including farmers, warehouse workers, farm service providers and businesses in rural communities are dependent upon grass seed sales. After harvest, Pacific Northwest grass seed warehouses clean, condition and bag the seed in lots of up to 55,000 pounds. However, the International Seed Testing Association (ISTA) standards for international shipment are limited to 22,000 pound sized lots. Warehouses must re-label bags into threes lots (two lots of 22,000 pounds and one lot at 11,000 pounds) for international customers, a process which is costly and time consuming. The FSMIP project supported research, testing and validation that large lots of grass seed could be homogeneous. ISTA accepted the results and participating warehouses gained access to overseas markets with 55,000 pound lots of seed.

**FINAL REPORT**

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**Oregon**  
Department  
of Agriculture

**Streamlining Grass Seed Export Sampling & Testing Requirements**  
A research project to validate homogeneity in Pacific Northwest grass seed.

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## **Background**

Grass seed is an important specialty crop export for Oregon and nearby states. Thousands of people, including farmers, warehouse workers, farm service providers and businesses in rural communities are dependent upon grass seed sales.

After harvest, Pacific Northwest grass seed warehouses perform seed cleaning, conditioning and bagging. The Oregon grass seed industry typically bundles seed lots up to 55,000 lb. Export shipments of grass seed are sampled and tested to International Seed Testing Association (ISTA) standards, which set a limit of lot sizes at 22,000 lb. ISTA standards are used by many customers, based in countries that are members of the Organization for Economic Co-operation and Development (OECD). The ISTA lot size limit requires warehouses to re-label bags into three lots (two lots at 22,000 lb and one at 11,000 lb).

The process of “breaking down” lots is costly and time consuming. Costs include extra warehouse labor for remarking and handling bags; extra expenses for sampling bags and additional seed tests. More importantly, it may take up to three weeks to receive additional test results and issue documents so timely seed shipments can be delayed. Since the axiom, “first to ship is first to sell” runs true in this industry, the extra waiting time positions Oregon grass seed warehouses and dealers at a disadvantage against competitors in other countries. Seed that is not sold internationally places more inventory pressure on dealers which in turn leads to lower payments paid to growers.

The USDA AMS FSMIP funded project proposed participation in a time limited opportunity research program established by the ISTA and the International Seed Federation (ISF). The program, if successful, would validate that large lots of grass seed could be homogenous and therefore ISTA would approve streamlined sampling and testing procedures and allow up to 55,000 lb lot shipments of Northwest grass seed.

The research program had several requirements seed warehouses needed to meet in order to qualify to ship large seed lots: warehouses had to write quality manuals and pass an intense testing of six of their large lots of grass seed. The testing included sampling be done by an accredited ISTA sampler (Oregon Department of Agriculture staff were accredited); twenty samples taken of each lot and reduced purity, germination and “other seeds by species and number” tests be performed by an accredited ISTA lab on each of the lots. If the data from all of these tests indicated that at least five of the six lots were homogeneous, the warehouse would be approved to ship lots up to 55,000 lb internationally.

Participation in the program was costly, totally in excess of \$6,500/warehouse: hiring ISTA accredited samplers (two samplers each needed for at least eight hours); 120 samples tested (six lots x 20 samples each) x three tests/sample (reduced purity, germ and other seed determination); and other miscellaneous costs. This expense was daunting to most Oregon warehouses.

The USDA FSMIP grant opportunity for warehouses to participate in the ISTA/ISF research at a greatly reduced rate and possibly qualify to ship larger seed lots at lower costs, and be “first to the market” could not have come at a better time. The grass seed industry had been hit especially hard during the economic downturn. Grass seed prices declined, grower contracts

were not renewed and there was a backlog of grass seed in storage. In an Oregon Department of Agriculture (ODA) August 14, 2009 news release concerning ODA's role of supervising lower prices for grass seed sold between growers and companies, ODA Director Coba said, *"This year has been the perfect storm of trouble for the grass seed industry with the housing marketing coming to a halt, golf course activity slowing to a crawl, exports hitting the skids, and the general economic slump all leading to a backup of inventory. I especially want to commend growers who have made the tough decision to reduce production of perennial ryegrass in an effort to help the industry."*

In the same article, Brent Searle, special assistant to the director said, *"Despite all the benefits of grass, buyers are cutting back for a variety of reasons, and our growers and dealers are feeling the pain. The agreement reached on Wednesday reflects a drop from 80 cents last year to 52 cents per pound of seed that will be paid to growers for 2009. Dealers have to write down inventory values. Lenders are cutting back on funding for the industry. It is devastating to everyone but reflects the reality of the times we are facing."*

The USDA FSMIP funded project directly addressed a marketing opportunity for Oregon grass seed warehouses shipping into international markets. By shipping up to three weeks earlier, the local companies hoped to have a jump on their foreign competitors while reducing labor and redundancy in sampling tests and costs.

The project included private warehouses located in Oregon, but growers in Oregon, Idaho and Washington would benefit as Oregon warehouses contract with growers in all three states for seed to be shipped internationally.

### **Goals and Objectives**

The goal of the project was to improve export marketability of Oregon grass seed by validating that homogeneity could be achieved in large lot shipments.

Objective 1: Oregon warehouses would be able to deliver seed to international markets more quickly (up to three weeks earlier).

Objective 2: Oregon warehouses would reduce redundant procedures, thereby saving substantial costs.

### **Work Plan**

Oregon State University Seed Services (OSUSS) staff identified at least 343 grass seed warehouses in Oregon and 141 warehouses known to have shipped seed to an OECD member country between the years of 2007-2010. A letter was sent to all 141 Oregon grass seed warehouses explaining the opportunity to participate in the project. An informational meeting and workshop was held in October, 2010 for interested warehouse employees and owners and details of the program were explained. At the conclusion of the workshop, 13 of the original 15 warehouses that provided support letters and indicated interest in the project signed up to participate. Two of the original interested warehouses dropped out indicating their limited export business didn't make the project worthwhile for them. Another warehouse dropped later for the same reason, while an additional warehouse signed on later because of their export potential,

ending with 13 warehouses fully participating in the grant project. The 13 Oregon warehouses met criteria established by ODA and OSUSS for inclusion in the USDA FSMIP grant funded program:

- 1) An Oregon warehouse shipped seed to an OECD member country within the last three years.
- 2) A warehouse indicated need and interest in participating in the project through a written letter to ODA by a specific deadline (January 25<sup>th</sup>, 2010).
- 3) A warehouse showed a financial commitment to the program with a \$750 payment.
- 4) A warehouse stated a commitment to develop a quality manual and have it approved by USDA's ISTA Designated Authority by February 1, 2013.

ODA staff managed the grant funds, participation fees received from the participating warehouses and worked with OSUSS staff to meet FSMIP reporting deadlines and track project expenditures. ODA ISTA accredited samplers did all of the sampling necessary on a timely basis and followed ISTA sampling protocols.

OSUSS staff managed the project components:

1. Assisted warehouses in developing quality manuals and submitting them for approval to the USDA ISTA Designated Authority.
2. After quality manuals were approved, OSUSS notified warehouses and ODA ISTA accredited staff and coordinated the sampling of six large lots for testing.
3. After samples were taken, OSUSS tracked the seed samples sent to either Agri Seed Testing in Salem, Oregon or the OSU Seed Laboratory in Corvallis, Oregon, the two laboratories that partnered in the project.
4. Results from the testing were sent to the ISTA reviewer.
5. If five of the six seed lots were determined homogeneous, OSUSS notified the warehouses that they were able to ship seed lots up to 55,000 lb internationally.
6. OSUSS tracked in-kind support from the warehouses to fulfill the grant project budget requirements.

Participating warehouses each contributed \$750 towards project costs; provided six large lots of seed (over 22,000 lb and up to 55,000 lb) for testing and agreed to continue the program requirements of testing six to ten percent of their lots.

Agri Seed Testing of Salem, Oregon and the OSU Seed Laboratory tested each sample sent to them during the project. Each sample was tested under the follow reduced methods: 1) a 100-seed germination test, 2) a 1,000 seed purity test and 3) a 10,000 seed test known as a "other seeds by species and number." Agri Seed Testing tested lots from eight warehouses and the

OSU lab test lots from five warehouses. All warehouses made the choice of testing seed from 'group one' of two groups of seed types. The species included in 'group one' were: *Lolium perenne*, *Lolium multiflorum*, *Lolium x boucheanum*, *Festuca pratensis*, *Festuca arundinacea* and *Phleum pretense*.

OSU Seed Certification provided proper documentation to successful warehouses for future exports of large seed lots.

### **Timeline**

Summer of 2010: Announcement of USDA FSMIP project award.

September-October, 2010: Informational workshop held for interested warehouses and participant warehouses confirmed.

September 1, 2010-January 31, 2011: Through emails, phone calls and occasional visits to some warehouses, OSUSS coordinated with each of the thirteen warehouses to develop a quality manual that was approved by the USDA ISTA Designated Authority.

November 1, 2010-March 31, 2013: Thirteen Oregon grass seed warehouses provided six large lots of seed for sampling. ODA's ISTA samplers sampled the six large lots of seed from each warehouse. Agri Seed Testing tested seed lots from eight warehouses and the OSU Seed Lab tested seed lots from five warehouses. OSUSS sent the results of testing to the Chairman of the Bulking and Sampling Committee of ISTA via the USDA ISTA Designated Authority.

January 1, 2011-Present: OSU Seed Certification staff instructed and continues to instruct successful participating warehouses on shipping large seed lots.

### **Partners and Cooperators**

Each of the 13 warehouses contributed \$750 and numerous hours of in-kind time to complete their quality manuals and participate in the project. The Oregon warehouse employees and owners 1) determined which of their seed lots would be used for the experiment; 2) conditioned and bagged the grass seed lots, usually in 50 lb bags; 3) had the pallets of bags available for ODA samplers to sample the lots. OSUSS provided OECD certification oversight on the increased lot sizes from 22,000 to 55,000 lb and also contributed many hours of in-kind time in addition to receiving payment for services.

ODA ISTA accredited samplers visited each warehouse to sample the numerous lots required by ISTA and also donated some in-kind time. ODA project oversight manager worked with the OSUSS staff to collect required grant documentation, review project progress, completion, report writing and contributed many in-kind hours.

Agri Seed Testing, one of the two ISTA accredited labs that participated in the project donated half of their testing fee costs, matching their testing fees with in-kind donation of equal value. The OSU Seed Testing Lab, the other ISTA accredited lab performing required ISTA testing, committing available staff to conduct tests. Between the two laboratories, over 10,000 seed samples were tested for both germination and purity.

## Results and Lessons Learned

Originally fifteen warehouses indicated interest in this project. Thirteen warehouses ended up participating in the program, requiring some adjustment of the projected budget match. Final participation numbers reflected warehouses understanding of the program after attending the workshop, which wasn't feasible prior to project proposal submission and being awarded the USDA FSMIP grant. Establishing project activities with budgets that can be adjusted is helpful.

Each warehouse developed their own unique manual describing their warehouse inner workings. The warehouse manuals were approved by the USDA/ ISTA designated authority. The helpfulness of completed quality manuals was commented on favorably in a post project survey. One warehouse employee stated the manual provided better exposure for employees to the entire seed cleaning/handling process rather than just their own work area. Each warehouse provided at least six large seed lots that were sampled by ODA samplers.

Sampling took place throughout the year, often when warehouses were very busy. Once the warehouse produced six seed lots ready for sampling, an employee would call the OSU seed services director with lot information, such as variety name, species type, lot number and weight. Contact was then made with the ODA samplers conveying lot details so that the samplers could relatively quickly sample lots. It was a challenge to have lots sampled before the entire lot was put away in the warehouse or shipped. ODA samplers were very responsive and able to sample almost 100% of the samples within 24 hours of being notified. The ODA samplers delivered the seed lot samples to one of two ISTA accredited seed labs.

For similar future projects, it is important to have committed partners such as the Oregon Department of Agriculture and the two seed laboratories. Ability to be on-site within 24 hours to sample lots that were in transition from warehouses to shipping was a key to the success of this program, as was having two labs able to focus attention on the detailed testing requirements.

A no cost project extension was requested and granted in 2012. It took more time than anticipated to test samples with germination tests performed over a long period of time; labs were not able to perform testing during the busy fall harvest season. The extension allowed more of the warehouses to have all their lots tested and be included in the program.

The seed labs performed abbreviated purity and germination tests following the ISTA/ISF procedure protocols. Once the six lots were tested, the data was gathered and sent electronically to a statistician in charge of determining homogeneity in at least five of six seed lots. If the statistician determined at least five of six lots were homogeneous, he contacted an ISTA representative and the name of the warehouse was added to a master list website: <http://www.seedtest.org/upload/cms/user/Overviewofseedcompaniesthatareauthorisedtomakelargeherbageseedlots20130726.pdf>.

If it was determined that at least five of six seed lots were not homogeneous, another round of sampling and testing was done after the warehouse changed some procedures/processes.

Of the 13 warehouses that participated in the USDA FSMIP supported project, 10 warehouses were approved to ship large seed lots internationally and met the ISTA/ISF research program goal of proving their ability to have homogenous large seed lots. The three warehouses that did

not have at least five of six seed lots pass the homogeneity test are interested in changing their processes and may participate next year in the program, knowing they will need to pay the full cost of seed lot re-testing if they participate in the ISTA/ISF research program.

Being able to participate in this program with the support provided by USDA FSMIP encouraged and allowed Oregon seed warehouses to produce homogeneous lots in an accelerated timeframe and during a challenging economic time. Of the 24 world-wide warehouses approved to ship large grass seed lots, 11 are now from Oregon (one Oregon warehouse participated in the program prior to the grant opportunity). The successful outcome of the project shows that Oregon warehouses can produce seed uniformity in their seed lots at an elite level with other top warehouses in the world.

A positive outcome of this grant program included the staff of the thirteen Oregon grass seed warehouses learning how to develop their own quality manuals. Most Oregon warehouses participating in this program did not have a quality manual before starting this project. The warehouse staff better understands their processing systems and have gained knowledge of how much homogeneity is in their large seed lots. By understanding how well their seed lots are homogenized, the staff at the warehouses are able to deliver a better product to customers. It is hoped that this knowledge will be shared and other warehouses will also develop individual quality manuals, furthering the high quality reputation of Northwest grass seed warehouses and increasing export potential while lowering costs to the warehouses for their export shipments.

### **Beneficiaries and Benefits**

There were 13 warehouses that benefitted from the quality improvement processes developed during the project. The staff of the thirteen Oregon grass seed warehouses learned how to develop their own quality manuals. The staff better understands their processing systems and have gained knowledge of how much homogeneity is in their large seed lots. By understanding how well their seed lots are homogenized, the staff at the warehouses are able to deliver a better product to customers. 10 warehouses are now able to export grass seed in large lots to OECD member countries in a timely manner, potentially improving their competitiveness and profitability. Approved warehouses will qualify as long as they are current in the auditing system that they agreed to, so they will continue to enjoy saving money on redundancy testing costs.

### **Recommendation For Future Research**

A comparison of warehouse practices and systems between the 10 warehouses that were able to produce homogeneous grass seed and the three other project participant warehouses that could not pass the sample testings could help pinpoint the reason(s) the three warehouses haven't achieved homogeneous seed lots. It would be useful to know if the lack of homogeneity is a processing issue, equipment issue or seed harvesting issue. That information might be very helpful for other grass seed warehouses looking to develop quality manuals and improve their export opportunities in the future.

### **Post Project Survey**

Participant warehouses were sent a post-project survey and five of the ten approved warehouses responded by September 20, 2013. Their responses confirmed benefits derived from being able

to ship larger lots. They cited cost savings, improved staff morale, less chance of costly and time consuming paperwork errors, improved marketable value to custom cleaning customers, and taking the guess work out of what size to make seed lots. A few warehouses noted they still had customers wanting smaller shipments and conjectured that reasons included their primary customers needed to re-ship to multiple countries, or buyers need to be aware that the selling warehouse is approved to ship larger lots and/or the seed is available in larger sized lots, ie. more education is needed from sellers to buyers.

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