

**Minutes of the 2012 Meeting**

1

Grass and Legume Advisory Committee  
Certification, Foundation Seed and Plant Materials Board

Wednesday, December 12, 2012 OSU LaSells Stewart Center Corvallis, Oregon

Members present: Brad Jeffreys, Bruce McKee, Brian Parker, Kevin Loe, Travis Feigner, Roger Ruckert, Mary Beth Menard, Les Gilmore, Jim Parsons, Larry Dean, Colin Scott, Andy Hulting, Nicole Anderson, Darrin Walenta, Reed Barker, Russ Karow, Dan Curry, Dennis Lundeen, Adriel Garay, Sandy Smith

Guests present: Randy Black (Oregon Dept. of Agriculture); Dan Hemshorn (Seed Research of Oregon); Dan Walters (DLF - International Seeds); Sharon Davidson (Agri Seed Testing); Sabry Elias (OSU Seed Laboratory); Terry Burr (Oregon Seed Certification Service); Iraj Motazedian (OSCS); Barry Schrupf (OSCS); Jeff McMorran (OSCS); John Zielinski (OSCS); Rachel Hankins (OSCS); Farhad Shafa (OSCS); Oscar Gutbrod (OSCS, retired)

Call to Order and Introductions: Chairman Jeffreys called the meeting to order at 12:55 PM. Those in attendance introduced themselves and stated their respective affiliations.

Item 3: The Minutes of the 2011 Annual Meeting were **approved** as published (Gilmore/Loe).

Item 4: Amend the Clover Standards per recommendation from the Clover Commission to address a finding of small broomrape (*Orobanche minor*) in certified fields.

Nicole Anderson provided background information on the occurrence of small broomrape in clover fields and efforts by the Oregon Clover Commission to address this issue. Randy Black provided information about the Small broomrape quarantine instituted by the Oregon Department of Agriculture (603-052-1025) to prevent the spread of small broomrape within Oregon and to protect markets for Oregon seed crops. The Clover Commission submitted a motion from their April 11, 2012 meeting, for consideration by the GLAC, to address a finding of small broomrape in certified fields. After discussion, a **motion passed** (Barker/Parker) to amend the OSCS Crop Standards for all clovers to require an OSU Seed Lab Orobanche exam if small broomrape is found in a certification field inspection (requiring two separate samples from each seed lot to accommodate the necessary tests), and to add small broomrape to the prohibited weed seeds list. See footnotes 3 and 5 in the attached Red Clover Standards as an example of the recommendation applicable to all Clover standards.

Item 5: Amend the Orchardgrass Seed Standards, changing the pure seed minimum from 90% to 92% and the inert matter maximum from 10% to 8%, contingent upon AOSA acceptance of a rule proposal eliminating the Orchardgrass factoring procedure.

Dan Walters summarized discussions held by an industry group to consider removal of the factoring procedure for determining the pure seed percentage of an Orchardgrass seed lot. The discussion resulted in a rule proposal for consideration by the Association of Official Seed Analysts at its next annual meeting. Dan Curry mentioned that the Oregon Orchardgrass Commission supported both the rule proposal and the proposed change to the certification standards if the AOSA rule is adopted. A **motion passed** (Loe/Parker) to amend the pure seed minimum from 90% to 92% and the inert matter maximum from 10% to 8% in the Orchardgrass Seed Standards, contingent upon AOSA acceptance of the rule proposal. If adopted by the Certification Board and AOSA, the amended Standards would take effect on July 1, 2013.

Item 6: Amend the Perennial Ryegrass Seed Standards for the Foundation class, changing the maximum allowance of Annual ryegrass from 0.10% to 0.32% and total other crops from 0.20% to 0.42%

Barry Schrupf provided background information on this proposal and an explanation of the fluorescence test calculation. While it appears that the current seed standard for the Foundation class (0.10%) was intended to allow some Annual ryegrass seed in a Foundation lot, finding one fluorescing seedling in the fluorescence test will result in a value of 0.25% and automatic disqualification of the seed lot. To help resolve this apparent disagreement in the standards, a **motion passed** (Barker/Gilmore) to amend the Perennial Ryegrass Seed Standards for the Foundation class, changing the maximum allowance of Annual ryegrass from 0.10% to 0.32% and total other crops from 0.20% to 0.42%. It was noted that the

**Minutes of the 2012 Meeting**  
Grass and Legume Advisory Committee  
Certification, Foundation Seed and Plant Materials Board

2

Wednesday, December 12, 2012 OSU LaSells Stewart Center Corvallis, Oregon

Association of Official Seed Certifying Agencies also adopted this revision to its Grass Standards at its recent annual meeting.

Item 7: Amend the Fine Fescue Seed Standards, changing the maximum allowance of Group A weed seed in the Registered and Certified classes. Split the Standards into related groupings.

Barry Schrupf explained that revisions were needed to the Fine Fescue Seed Standards to better reflect test calculations using 453.6 grams per pound in the weight conversions rather than 450 grams per pound. The current maximums listed in the standards for the Group A weed seeds were based on calculations using 450 grams per pound for the weight conversions and using 453.6 grams per the current method could result in unintended disqualifications. Barry also mentioned it was the intent of a past GLAC committee to split the standards for such a broad grouping as "fine fescue" into distinct or related species groupings<sup>1</sup>, and suggested the fine fescues could be grouped according to their field isolation requirements, ammonia test requirement and working weights for seed testing. He presented standards for these groups with revised maximums for the Group A weed seeds based on the 453.6 g/lb weight conversion factor. A **motion passed** (Parker/Barker) to accept the revisions as presented.

Item 8: Other business: Review seed standards for appropriate crop and weed values and amend as needed based on using 453.6 grams per pound as the sample weight conversion factor. (Submitted for discussion as a consequence of the issue raised in Item 7 regarding the conversion factor for calculating number per pound.)

Barry Schrupf noted that test calculations for reporting GROUP A weed seeds as number per pound, using 453.6 grams per pound in the weight conversions rather than 450 grams per pound, may exceed the current maximum allowance and disqualify the seed lot. This is an unintended consequence from using a different conversion factor in the test calculation. He suggested that the standards could be updated to the appropriate values with blanket approval from the GLAC committee and the Certification Board. A **motion passed** (Parker/Loe) to have OSCS staff review the current certified Seed Standards for instances where the updated conversion factor may adversely affect the seed lot's qualification, and revise the crop or weed standard accordingly.

Item 9: Reports

- OSU College of Agriculture / Crop and Soil Science Department Report: Dr. Russ Karow, Department Head, provided an update on college and department activities. His report summarizing recent developments is included (CSS Update; December 8, 2012).
- Oregon Seed Services Report: Dan Curry provided an update on Seed Services activities including Foundation Seed Program, OSU Seed Laboratory and Oregon Seed Certification Service. His report summarizing recent developments is included (OSU Seed Services Report: December 12, 2012). He also presented Certificates of Appreciation to industry representatives for their service to the committee.
- Oregon Department of Agriculture Report: Randy Black updated the group on Commodity Inspection Division activities.

Item 10: Mary Beth Menard, an OSA representative, volunteered to serve as vice-chair for the 2013 annual meeting and was approved by the committee.

Item 11: Mary Beth also volunteered to serve as the GLAC representative for the upcoming Certification Board meeting. She will present GLAC recommendations for consideration by the Board.

Item 12: By consensus, the next annual meeting of the committee will convene on the Wednesday following the 2013 Oregon Seed Growers League annual meeting.

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<sup>1</sup> Publishing the OSCS Certification Standards separately by species, or closely related groupings, was approved by the 2006 Grass and Legume Advisory Committee and subsequently ratified by the 2007 Certification Board.

**Minutes of the 2012 Meeting**  
Grass and Legume Advisory Committee  
Certification, Foundation Seed and Plant Materials Board

3

Wednesday, December 12, 2012   OSU LaSells Stewart Center   Corvallis, Oregon

The meeting adjourned at 3:15 PM.

Respectfully submitted,



Sandy Smith, Secretary  
January 28, 2012

Enclosures

- List of Committee members, page 4
- Motions for consideration by the Certification Board, page 5
- Handouts presented at the GLAC meeting begin on page 6
- Proposed certification standards and revisions begin on page 14

cc:    Dan Arp, Dean, College of Agricultural Sciences, OSU  
      Larry Curtis, Associate Dean, College of Agricultural Sciences, OSU  
      Karl Dettwyler, President, Oregon Seed Growers League  
      Duane Klundt, President, Oregon Seed Trade Association  
      Guests in attendance

**Minutes of the 2012 Meeting**

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Wednesday, December 12, 2012 OSU LaSells Stewart Center Corvallis, Oregon

**Committee Members**

Name	Affiliation	Term
Brad Jeffreys, <i>Chair</i>	Oregon Seed Association	2012
Bruce McKee, <i>Vice-chair</i>	Oregon Seed Growers League	2012
Brian Parker	Oregon Seed Growers League	2012
Kevin Loe	Oregon Seed Growers League	2012
Collin Crocker	Oregon Seed Growers League	2013
Travis Feigner	Oregon Seed Growers League	2013
Roger Ruckert	Oregon Seed Growers League	2014
Mary Beth Menard	Oregon Seed Association	2012
Mick McGregor	Oregon Seed Association	2012
Les Gilmore	Oregon Seed Association	2013
Jim Parsons	Oregon Seed Association	2014
Larry Dean	Oregon Seed Association	2014
Colin Scott	Turfgrass Breeders Association	2014
Andrew Hulting	OSU Extension Service Weed Management Specialist	Ex Officio Voting
Nicole Anderson	OSU Extension Service, Field Crops Washington, Yamhill & Polk Counties	Ex Officio Voting
Darrin Walenta	OSU Extension Service, Field Crops Union, Baker & Wallowa Counties	Ex Officio Voting
Reed Barker	OSU, Department of Crop and Soil Science Grass Genomics	Appointment Voting
Russ Karow	OSU, Department of Crop and Soil Science Department Head	Ex Officio Nonvoting
Dan Curry	OSU, Department of Crop and Soil Science Seed Services, Director	Ex Officio Nonvoting
Dennis Lundeen	OSU Extension Service Oregon Seed Certification Service, Manager	Ex Officio Nonvoting
Adriel Garay	OSU Seed Laboratory Manager	Ex Officio Nonvoting
Ron Pence	Oregon Department of Agriculture Commodity Inspection Division Assistant Administrator	Ex Officio Nonvoting
Sandy Smith, <i>Secretary</i>	OSU Extension Service Oregon Seed Certification Service	Appointment Nonvoting

**Minutes of the 2012 Meeting**  
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5

Wednesday, December 12, 2012 OSU LaSells Stewart Center Corvallis, Oregon

**Motions recommended for approval by the Certification Board at its next annual meeting<sup>2</sup>**  
February 12, 2013

1. Amend all Clover Standards to address a finding of small broomrape (*Orobanche minor*) in certified fields. The following amendments are recommended for all certification classes (inserted as footnotes to the seed standards for all clovers):
  - a. If small broomrape is found in a certification field inspection, an OSU Seed Lab Orobanche exam is required. Two samples are to be collected in separate containers: one for the Orobanche exam, the other for standard purity and viability testing; and
  - b. List small broomrape as a prohibited weed in the seed standards.
2. Amend the Orchardgrass Seed Standards for all certification classes, changing the pure seed minimum from 90% to 92% and the inert matter maximum from 10% to 8%, contingent upon AOSA acceptance of a rule proposal to eliminate the Orchardgrass factoring procedure.
3. Amend the Perennial Ryegrass Seed Standards for the Foundation class, changing the maximum allowance of Annual ryegrass from 0.10% to 0.32% and total other crops from 0.20% to 0.42%.
4. Amend the maximum allowance of Group A weed seed in the Registered and Certified classes for all fine fescues from 15 per pound, and publish the fine fescue standards according to closely related groups per their isolation requirements<sup>1</sup>. The current maximum allowance for the Group A weed seed was based on using 450 grams per pound as the sample weight conversion value. This conversion value has since been revised to 453.6 grams per pound and the maximum allowance needs to be updated accordingly. In addition, it is recommended to split the current Fine Fescue Standards into ones for Strong Creeping Red fescue; Chewings and Slender Creeping Red fescue; Hard, Sheep, Blue and Idaho Fescue; and Annual fescue if adopted by the Board. Besides a change to the standards title, the only revision from the Fine Fescue Standards will be the maximum allowance of Group A weed seed per the sample weight conversion.
5. Review all of the published OSCS seed standards and adjust crop and weed allowances as needed per use of the revised weight conversion value (453.6 grams per pound rather than 450 g/lb).

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<sup>2</sup> Complete editions of the affected certification standards are appended with the proposed amendments highlighted.

603-052-1025

### **Quarantine; Small Broomrape**

(1) Establishing Quarantine. A quarantine is established to prevent the spread of small broomrape, *Orobanche minor*, within Oregon and to protect markets for Oregon seed crops. This quarantine is established under ORS 561.510 and 561.540 to protect Oregon's agricultural industries from the artificial spread of small broomrape. Small broomrape is not widely prevalent within or distributed throughout the state of Oregon. Small broomrape is dangerous to Oregon's agricultural industries because it parasitizes the root systems of host crop plants in the legume, potato, carrot and sunflower families. Red clover is the most susceptible host. Damage includes direct yield losses, up to and including crop failure, as well as possible market losses due to restrictions imposed by trading partners on commodities potentially contaminated with small broomrape seed.

(2) Area under Quarantine: State of Oregon

(3) Commodities Covered: Small broomrape plants including seeds, red clover (*Trifolium pratense*) seed, and soil, commodities and equipment that may be contaminated with small broomrape seeds.

(4) Provisions of the Quarantine:

(a) Imported red clover seed lots must have been cleaned by a process that includes, at a minimum, the stages in (4)(b)(A-C) below or an official seed sample must be taken and tested prior to planting to ensure freedom from contamination by small broomrape seed. Contaminated lots will be returned or destroyed without expense or indemnity paid by the State.

(b) All red clover seed lots harvested in counties west of the Cascade Mountains must be cleaned by an approved process before transport, purchase, sale or offering for sale. Approved cleaning processes must include, at a minimum, all the stages in A-C below. Seed lots meeting this requirement need not be sampled and tested for small broomrape contamination.

(A) Air separator;

(B) Indent roller;

(C) Gravity separator.

(c) Alternative cleaning processes may also be acceptable if approved by the Department.

Cleaning facilities using alternative processes must be under compliance agreement with the Department.

(d) The Department may take random samples of finished red clover seed lots from cleaners meeting the requirements of (b) or (c) above and test them for small broomrape. The cost of this random sampling and testing will be born by the Department. If small broomrape is found, cleaning of red clover seed will be curtailed until the cleaning process is reviewed and problems corrected. All available clover seed lots from that cleaner will be sampled and tested for small broomrape. Any infested lots will be re-cleaned and released only after testing negative for small broomrape. The costs of all follow-up sampling and testing after a positive find will be the responsibility of the cleaner. The cleaner will be put under compliance agreement before additional lots of red clover seed may be cleaned.

(e) Seed lots not meeting the cleaning requirements outlined in (b) or (c) above must be officially sampled, tested and found free of small broomrape seeds before transport, purchase, sale or offering for sale. Upon request, Department inspectors will draw official seed samples, which will be analyzed at a laboratory using a USDA-approved protocol for small broomrape testing. Costs of sampling and testing will be the responsibility of the grower or other responsible party. Contact: Commodity Inspection Division, Oregon Department of Agriculture, 635 Capitol St. NE, Salem, OR 97301. Telephone: (503) 986-4620. Any seed lots found to contain small broomrape seed are prohibited from transport, purchase, sale, or offering for sale until they are re-cleaned, re-tested and determined to be free from small broomrape.

(f) Screenings from seed lots contaminated with small broomrape shall be disposed of in a manner that will devitalize the seed or eliminate the risk of spread of the weed such as pelletization, burning or burying.

(5) Violation of this quarantine may result in a fine, if convicted, of not less than \$500 nor more than \$5,000, as provided by ORS 561.990(4). Violators may also be subject to civil penalties of up to \$10,000 as provided by Oregon Laws 1999, chapter 390, section 2. Commodities harvested or shipped in violation of this quarantine shall be treated or destroyed without expense or indemnity paid by the State.

Stat. Auth.: ORS 561.510 & ORS 561.190

Stats. Implemented:

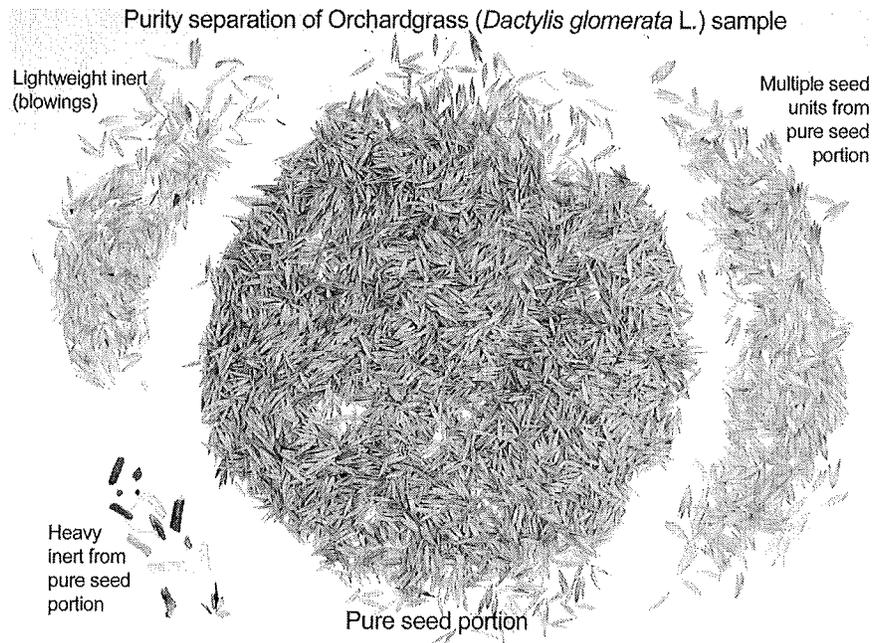
Hist.: DOA 6-2000, f. & cert. ef. 2-24-00; DOA 33-2000, f. & cert. ef. 12-15-00; DOA 15-2003, f. & cert. ef. 4-18-03

**603-052-1030**

## OSU Seed Laboratory Proposal to Eliminate the Factoring Procedure in Orchardgrass Testing

**Factoring** is a mathematical procedure used to estimate the percentage of pure seed present in multiple seed units of orchardgrass (OG) (AOSA Rules, Vol. 1. sec. 3.7 and Table 3B).

### Example of separations required when testing orchardgrass purity



### Problems created by current factoring rule in AOSA

- Factoring reduces the purity in every sample of OG tested by AOSA rules as compared to ISTA rules (not harmonized)
- High inert presents an image of lower quality compared to ISTA test results
- Current rule is conflicting because multiple are considered pure seeds for germination but only partially for purity.
- Procedure is inefficient, due to separating, weighing, factoring and calculating

### Benefits of eliminating the factoring procedure

- Increases purity results by approximately 2%, which is a more accurate description of the planting value of the seed lot because multiple seed units do germinate.
- Harmonizes AOSA with ISTA rules in regards to multiple seed units of OG.
- Pure seed portion will be the same for purity and germination testing which make the method objective and verifiable.
- Contributes to efficiency to respond to the time goals of the industry.
- Provides better description of the planting value of the seed as sold and planted.

**OSCS Standards Change Proposal****Grass & Legume Advisory Committee, December 12, 2012;****OSCS 2012 Handbook, pages 40 and 41. Perennial ryegrass, both sets.****Seed Standards, Foundation class****Current standards:**

Annual ryegrass, maximum	0.10%
Total other crops, incl. Annual ryegrass, maximum	0.20%

**Proposed standards:**

Annual ryegrass, maximum	0.32%
Total other crops, incl. Annual ryegrass, maximum	0.42%

**Background:**

Federal Seed Act Regulations section 201.58a Indistinguishable seeds (a) Ryegrass, specifies: In determining the pure seed percentage of perennial ryegrass and annual ryegrass, 400 seeds shall be grown on white filter paper and the number of fluorescent seedlings determined under ultraviolet light at the end of the germination period.

**Discussion:**

The current standards indicate the intent to allow a low level contamination by annual ryegrass in perennial ryegrass at the Foundation class. However, due to the specified test, 0.10% is in effect a zero tolerance because the minimum test result possible with one fluorescing seedling out of 400 seeds with 100% germination is 0.25%. The standard is therefore incompatible with the specified test. The prescribed test cannot produce a result that can meet the standard and a minimum of one fluorescing seedling results in a downgrade to Registered class. The proposed standards would permit no more than one fluorescing seedling with 80 % germination, the AOSCA minimum germination standard for ryegrass.

The proposed standards would allow only one fluorescing seedling regardless of the number actually germinating (from 320 to 400) and regardless of whether the germination standard is 80% (AOSCA) or 85% or 90% (Oregon).

Regarding Total other crops incl. Annual ryegrass, the current standards would allow 0.1% other crops above the maximum of 0.01% maximum Annual ryegrass allowed. Therefore, the 0.1% other crops is added to the proposed maximum Annual ryegrass of 0.32% to get the proposed 0.42% maximum Total other crops incl. Annual ryegrass.

## OSCS Standards Change Proposal

Grass & Legume Advisory Committee, December 12, 2012;

**Proposed:** For all crop standards, recalculate #/lb. standard for Group A and Group B weeds utilizing a conversion of 453.6 grams per pound, and update the standards, in both cases of one or multiple seeds to be allowed found in the noxious exam.

**Discussion:** The #/lb. standard for Group A and Group B weeds in most OSCS certification standards, was calculated using the approximate conversion of 450 grams per pound. However, seed test reports utilize the more exact conversion of 453.6 grams per pound. As a consequence, those standards that were established using 450 grams per pound are in effect a zero tolerance. The number per pound standard should be recalculated, and the crop standards should be updated to make the standard compatible with the test calculation. For crop standards where a change is needed, this would usually mean an increase of one or two additional seed(s) per pound.

**Example 1**, see standards for Colonial bentgrass (Handbook page 23). The minimum working weight for the noxious weed exam is 2.5 grams.

$450 \text{ grams/lb.} \div 2.5 \text{ grams} = 180/\text{lb.}$ , the current standard, meaning that one seed found in the noxious exam is intended to be tolerated.

$453.6 \text{ grams/lb.} \div 2.5 \text{ grams} = 181.4/\text{lb.}$ ; would be rounded up to 182/lb. for the updated standard.

**Example 2**, see standards for Alfalfa (Handbook page 17). The minimum working weight for the noxious weed exam is 50 grams.

$450 \text{ grams/lb.} \div 50 \text{ grams} = 9/\text{lb.}$ , however the standard allows 45/lb., or  $45 \div 9 = 5$  seeds found in the noxious exam.

$453.6 \text{ grams/lb.} \div 50 \text{ grams} = 9.07/\text{lb.}$ ; then 5 seeds permitted in the noxious exam would convert to 45.4/lb, rounded to 46/lb for the updated standard.

If this proposal is passed, then all crop standards will be reviewed and updated as needed to specify the intended minimum tolerance for Group A and B weeds.

**CSS Update**  
**December 8, 2012**

The following are highlights of activities over the past months in Crop and Soil Science (CSS) and the College of Agricultural Sciences (CAS) as they affect clientele groups affiliated with CSS.

1. **College of Ag Sciences** - Dr. Dan Arp, CAS Dean, is focusing time and energy on the 2013 Oregon legislative session. The Governor's budget has been released and has the Statewide Public Service Programs at level funding. Given known increases in retirement and health insurance costs, level funding results in a spendable budget reduction. The Oregon University System as a whole, and OSU as a part of this system, is slated for a @7% funding increase in teaching budgets. Dean Arp will ask that the statewide programs be treated similarly to OUS. As most CAS research and extension faculty have teaching appointments, obtaining a similar increase in funding seems logical. Several new initiatives with clientele partners were proposed and Dean Arp was told that funding for some of these projects is being considered. A fermentation science center (breads, cheese, beer and wine) is among these and seems to have some traction. Andrew Ross (cereal quality and products), Pat Hayes (barley breeding) and Shaun Townsend (hops breeding) are likely participants in such a center.
2. **OSU Extension** – Given current knowledge of 2012-13 funding, Mike Borman/Bill Braunworth/Russ Karow (the interim College of Ag Extension leadership team) are working on both short-term and long-term staffing plans for agricultural extension. If state funding for 2013-15 is slightly increased (the 7% adjustment), the Ag extension budget would have a just over \$200K in recurring funding to use to fill critical, vacant positions. Critical positions are those where we are still interested in doing work in an area and have no backup support to have that work area covered. Backup at this point includes people in part-time, post-retirement positions, in grant funded positions that can provide some general support, or people elsewhere in the state or region who can serve as a resource. A livestock position in Malheur County and horticulture position on the coast are highest priorities. Both of these positions are those where a current faculty member has left or is leaving and there is critical program need.
3. **Current Department Budgets** – Departments and branch experiment stations are now operating under a @19% budget reduction in the current biennium – an additional 5% cut from what was originally planned. While the College had been operating under a 14% budget reduction, once the impact of university mandated but underfunded salary increases and benefit cost increases was fully understood, additional budget reductions were needed to balance the 2011-13 budget. Reserve funds will be used by many units to cover activities in 2012-13 but in most cases will be exhausted by the end of that fiscal year. Unit leaders have been told to begin planning 2013-14 budgets at an existing funding level. If there is a slight increase in funding, some additional funds may be provided to departments and branch stations.
4. **University Teaching Budgets** – Student enrollments are high (@26,000) and out-of-state and international student enrollments increasing. Given these factors and the fact that tuition is now a majority part of teaching budgets versus state funds, the teaching “side of the OSU house” is in reasonable financial condition. Additional teaching FTE needs to be found to cover increased class loads and needs. Some extension faculty have had portions of their positions bought out to do classroom teaching. College of Ag research and extension faculty will need to figure out how to meet position needs with one foot more consistently on campus or perhaps through teaching classes electronically from wherever they may be. Campus-based extension specialists are all picking up some level of teaching responsibility.
5. **Federal budgets** – Federal FY 12 ended on September 30. Budgets were much the same as in FFY11 minus an @2% across the board budget reduction with some exceptions – USDA-ARS took a bigger hit. No formal budget has been proposed for FFY13. The continuing resolution in place for the first six months of FFY13 leaves many programs in limbo as far as how to proceed in terms of budget planning in the coming fiscal year. If changes are not made to the “fiscal cliff” legislation that is on the books, budget impacts will be disastrous. Federal funds are a small but significant part of the College budget and also one of the major sources of grant funds for faculty (NIFA, ARS pass through funds, Specialty Crops Research, SARE)
6. **Grant Funding** – Grants are the other means through which faculty will obtain funds for program operation and in the case of most recent hires, a portion of the person's salary. OSU grant funding totaled \$207M in 2011-12 – a third straight year of funding above \$200M. The College of Agricultural Sciences grant total in 2011-12 was \$54M, over one-fourth of OSU's total. While at significant levels, grant funding has declined just slightly over the past two years for both OSU and CAS. Reductions in grant funding may be due to reduce levels of federal grant dollars and/or saturation of existing faculty in terms of the number of grants they can handle as part of their workload. Once newly hired faculty come to stride in



## OSU Seed Services Report: December 12, 2012

- A referee was completed in early 2012 that compared results from an Allelic Discrimination test (A/D) with test results from both a USDA 400 seed growout test and an AOSA growout test. Results were forwarded to the AOSA Rules Committee for supporting an AOSA rules proposal. The rule proposal was voted upon and accepted into the AOSA Rules. This new rule became effective on October 1, 2012. This rule allows a DNA test to be performed rather than a six week growout test for ryegrass when determining the purity of annual ryegrass within a perennial ryegrass sample.
- A small referee comparing tall fescue purity results from some Oregon private labs and the OSU Seed lab was completed. The goal of the referee was to see how the purity results compared between five seed labs in the WV. The results of the referee were:
  - a. Some samples produce more uniform inert results, whereas others produce more variable inert results, indicating that variability in test results is associated to the nature of each submitted sample, thereby, to the nature of the lot itself.
  - b. There is a strong suggestion that samples obtained from lots that are cleaner and more uniform produce more uniform purity test results, whereas, lots that have not been cleaned as effectively and are not uniform may be producing variable test results. This needs to be further investigated.
  - c. The results, in combination with the joint visual verification made by the analysts of each other's separations, indicate that the analysts are making correct separations of inert. They are reporting the correct amount of inert material present in each submitted sample and each working sample.
  - d. Despite the nature of each lot and each submitted sample, there is a need to continue researching for purity testing methods that can produce more consistent results than the current method.
- Fifteen Oregon Grass Seed Warehouses have signed up to participate in the ISTA/ISF Seed Lot Size Experiment. The steps for warehouses to complete the project include developing a quality manual, having five of six large seeds lots pass a homogeneous test and to have five percent of their large seed lots that are shipped internationally tested for homogeneity. The training program started in September, 2010 and will conclude during the summer of 2013. So far we have nine warehouses in the WV that have successfully completed the experiment and are able to ship internationally seed lots up to 55,000 lbs. We have six warehouse that would still like to participate. For any questions, please call Dan Curry at 541 737-5094.
- OSU Foundation seed has three oil seed varieties of flax available for sale. The spring varieties include a Foundation and Organic Omega, which is a yellow-seeded variety, and York, a brown seeded variety. Also for sale is Linore, which is a winter variety.



## Oregon State University Seed Laboratory

# Seed Quality Management Workshop

In any industry, effective quality management is critical for a successful marketing system. The seed industry is no different. Quality management (QM) in seed production is even more difficult because seeds are perishable and need special care in each step of the process. We depend on quality seeds to produce food for the growing world population, in addition to feed, fiber, turf, and flowers.

Quality seed is the product of organized and well-managed systems. These systems require doing things correctly in every stage, including breeding, seed production, seed conditioning, seed testing, warehousing, labeling, etc. Managing these systems is important to provide quality seed to the end users and make sure that they are satisfied. Seed quality management requires all participants in the system to do their part correctly, so that the whole system can deliver quality seeds efficiently and consistently. Quality management is critical in the competitive global seed market in which we all operate.

The OSU Seed Laboratory will offer a hands-on workshop on Seed Quality Management in 2013. The workshop will focus on grass seed, but the principles are applicable to other seed such as cereals, vegetables, and native species. The workshop will address areas of current importance to seed growers, cleaners and dealers, including:

- 1) Seed Quality Management: the system, its components and procedures.
- 2) Quality Management in seed fields, including critical factors and procedures.
- 3) Prevention and control of weeds and other crops in seed fields.
- 4) Principles and procedures of Quality Management in seed conditioning.
- 5) Controlling variability in the lot, the sample, and test results.
- 6) Recognition of inert matter, crop seeds, and weed seeds.
- 7) Hands-on demonstration of seed cleaning with lab-scale equipment.
- 8) Measuring seed purity: purity, inert, weeds, and crops.
- 9) Measuring the planting value of seeds: dormancy, germination, TZ, and vigor.
- 10) Protecting seed in storage and during transit.

The event is organized by the OSU Seed Laboratory staff, in collaboration with the USDA grass seed cleaning facility, an OSU Extension Weed Specialist, and OSU Seed Certification inspectors.

- It is a 2-day workshop and will be offered in English and Spanish on the following dates: **English version:** March 28-29, and **Spanish version:** April 11-12.
- Only 20 participants are accepted per event on a first come basis.
- The \$250 fee will include a workbook, parking, lunch and refreshments.
- A certificate is provided upon completion.
- Those interested in specific crops/issues are encouraged to bring their own seeds to work on.



**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service Handbook (OSCS) are basic to all crops, and together with the following specific regulations constitute the certified Arrowleaf Clover standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** Land must not have grown or been seeded to any Arrowleaf clover during the previous five years to be eligible to produce Foundation seed nor during the previous three years to produce Registered seed. Land must not have grown or been seeded to Arrowleaf clover during the previous two years to be eligible to produce Certified seed, unless the crop was of the same variety and certified. Arrowleaf clover must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting and a seed crop application must be submitted by April 15 of the year that seed is produced.

**Field Standards:**

Class of seed produced	Maximum other varieties permitted <sup>1</sup>	Isolation requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation <sup>3</sup>	None	1320 ft.	1320 ft.
Registered <sup>3</sup>	0.2%	660 ft.	330 ft.
Certified <sup>3</sup>	0.5%	330 ft.	165 ft.

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	98.00%
Other crops, maximum	0.10%	0.25%	0.40%
Inert matter, maximum	2.00%	2.00%	2.00%
Weed seed <sup>4</sup> , maximum	0.25%	0.25%	0.50%
Weeds, Group A <sup>5</sup> , singly or combined	None	30/lb.	45/lb.
Germination (including hard seed)	85%	85%	85%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See Section IV D, General Standards in the OSCS Handbook.

<sup>3</sup> An OSU Seed Lab Orobanche exam is required if Small broomrape is found in a certification field inspection. Two samples are to be submitted in separate containers: one for the Orobanche exam, the other for standard purity and viability testing.

<sup>4</sup> None of the prohibited weeds listed in section V, General Standards in the OSCS Handbook, nor any Chess, St. Johnswort or Small broomrape allowed in any class of seed.

<sup>5</sup> Group A – Sheep sorrel, Buckhorn plantain, Docks, Bedstraw.



**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service Handbook (OSCS) are basic to all crops, and together with the following specific regulations constitute the certified Ball Clover standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** Land must not have grown or been seeded to any Ball clover during the previous five years to be eligible to produce Foundation seed nor during the previous three years to produce Registered seed. Land must not have grown or been seeded to Ball clover during the previous two years to be eligible to produce Certified seed, unless the crop was of the same variety and certified. Ball clover must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

If Foundation seed is planted, one Registered seed crop and two Certified seed crops may be harvested.

If Registered seed is planted, two consecutive Certified seed crops may be harvested.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting and a seed crop application must be submitted by April 15 of the year that seed is produced.

**Field Standards:**

Class of seed produced	Maximum other varieties permitted <sup>1</sup>	Isolation requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation <sup>3</sup>	None	1320 ft.	1320 ft.
Registered <sup>3</sup>	0.2%	660 ft.	330 ft.
Certified <sup>3</sup>	0.5%	330 ft.	165 ft.

**Seed Standards:** (Minimum Sample Size – 1/4 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	98.00%
Other crops, maximum	0.10%	0.25%	0.40%
Inert matter, maximum	2.00%	2.00%	2.00%
Weed seed <sup>4</sup> , maximum	0.25%	0.25%	0.50%
Weeds, Group A <sup>5</sup> , singly	None	22/lb.	22/lb.
Weeds, Group A <sup>4</sup> , combined	None	67/lb.	67/lb.
Germination (including hard seed)	85%	85%	85%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See Section IV D, General Standards in the OSCS Handbook.

<sup>3</sup> An OSU Seed Lab Orobanchae exam is required if Small broomrape is found in a certification field inspection. Two samples are to be submitted in separate containers: one for the Orobanchae exam, the other for standard purity and viability testing.

<sup>4</sup> None of the prohibited weeds listed in section V, General Standards in the OSCS Handbook, nor any St. Johnswort, Wild carrot, or Small broomrape allowed in any class of seed.

<sup>5</sup> Group A – Sheep sorrel, Buckhorn plantain, Docks, Bedstraw.



**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service Handbook (OSCS) are basic to all crops, and together with the following specific regulations constitute the certified Berseem Clover standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** Land planted with Breeder seed to produce Foundation seed must be free of clover for at least six years (three of which have been cultivated). To produce Certified seed, land must have been free of Berseem clover for at least three years (the time interval may be shortened one year if one cultivated crop or clean fallow intervened). Berseem clover must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting and a seed crop application must be submitted by June 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum other varieties permitted <sup>1</sup>	Isolation requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation <sup>3</sup>	None	1320 ft.	1320 ft.
Certified <sup>3</sup>	0.5%	330 ft.	165 ft.
Between classes of same variety	10 feet		

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Certified (Blue tag)
Pure seed, minimum	99.00%	99.00%
Other crops, maximum	0.10%	0.25%
Inert matter, maximum	0.50%	0.50%
Weed seed <sup>4</sup> , maximum	0.10%	0.20%
Weeds, Group A <sup>5</sup> , singly or combined	45/lb.	45/lb.
Germination (including hard seed)	85%	85%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See Section IV D, General Standards in the OSCS Handbook.

<sup>3</sup> An OSU Seed Lab Orobanche exam is required if Small broomrape is found in a certification field inspection. Two samples are to be submitted in separate containers: one for the Orobanche exam, the other for standard purity and viability testing.

<sup>4</sup> None of the prohibited weeds listed in section V, General Standards in the OSCS Handbook, nor any St. Johnswort or Small broomrape allowed in any class of seed.

<sup>5</sup> Group A – Bedstraw, Buckhorn plantain, Dock, Sheep sorrel, Wild carrot, Giant bristlegrass (Foxtail)



**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified Crimson clover standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** Land must not have grown or been seeded to any Crimson Clover during the previous five years to be eligible to produce Foundation seed; during the previous three years to produce Registered seed. Land must not have grown or been seeded to Crimson Clover during the previous two years to produce Certified seed, unless the crop was of the same variety and certified. Crimson clover must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

If Foundation seed is planted, one Registered seed crop and two Certified seed crops may be harvested.

If Registered seed is planted, two consecutive Certified seed crops may be harvested.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties <sup>1</sup>	Isolation Requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation <sup>3</sup>	None	1320 ft.	1320 ft.
Registered <sup>3</sup>	0.2%	660 ft.	330 ft.
Certified <sup>3</sup>	0.5%	330 ft.	165 ft.
Between classes of same variety		10 ft.	

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	98.00%
Other crops, maximum	0.10%	0.25%	0.40%
Inert matter, maximum	2.00%	2.00%	2.00%
Weed seed <sup>4</sup> , maximum	0.25%	0.25%	0.50%
Weed seed, GROUP A <sup>5</sup> , singly or combined	None	27/lb.	45/lb.
Germination, including hard seed	85%	85%	85%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See section IV, D in the OSCS Handbook.

<sup>3</sup> An OSU Seed Lab Orobanchae exam is required if Small broomrape is found in a certification field inspection. Two samples are to be submitted in separate containers: one for the Orobanchae exam, the other for standard purity and viability testing.

<sup>4</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor any Chess, St. Johnswort, or Small broomrape allowed in any class of seed.

<sup>5</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, Bedstraw, and Brassica spp.



**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified Red Clover standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** Land planted to Breeder seed to produce Foundation seed must be free of Red Clover for at least six years (three of which have been cultivated). To plant Foundation seed to produce Registered or Certified seed, land must have been free of Red Clover for at least three years (the time interval may be shortened one year if one cultivated crop or clean fallow intervened). Red clover must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting and a seedling applications for fields planted between April 1 and July 1 must be filed within 15 days of planting and a seed crop application must be submitted by June 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties <sup>1</sup>	Isolation Requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation <sup>3</sup>	None	1320 ft.	1320 ft.
Registered <sup>3</sup>	0.2%	660 ft.	330 ft.
Certified <sup>3</sup>	0.5%	330 ft.	165 ft.
Between classes of same variety		10 ft.	
Tetraploid and diploid varieties need only be isolated 15 ft. from each other			

**Special Requirements:**

- a. A field of Red Clover may produce only two seed crops of any given generation.
- b. Arlington, Florex, Florie, Prosper 1 -- there will be no harvest of Foundation seed in the seedling year.
- c. Kenstar -- no seed will be produced for certification in the year of seeding.

**Seed Standards: (Minimum Sample Size – 1 Pound)**

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	99.00%	99.00%	99.00%
Other crops, maximum	0.10%	0.25%	0.25%
Sweet clover, maximum	9/lb.	45/lb.	90/lb.
Inert matter, maximum	1.00%	1.00%	1.00%
Weed seed <sup>4 5</sup> , maximum	0.15%	0.15%	0.25%
Weed seed, GROUP A <sup>6</sup> , singly or combined	45/lb.	45/lb.	45/lb.
Germination, including hard seed	85%	85%	85%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See section IV, D in the OSCS Handbook.

<sup>3</sup> An OSU Seed Lab Orobanche exam is required if Small broomrape is found in a certification field inspection. Two samples are to be submitted in separate containers: one for the Orobanche exam, the other for standard purity and viability testing.

<sup>4</sup> See section IX, D4 in the OSCS Handbook.

<sup>5</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor any St. Johnswort or Small broomrape allowed in any class of seed.

<sup>6</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, Wild carrot, Giant bristlegress (Foxtail), and Bedstraw.



**Oregon Seed Certification Service**

<http://seedcert.oregonstate.edu>

Extension Service

CERTIFICATION STANDARDS  
**ROSE CLOVER**  
*(Trifolium hirtum)*  
 Approved February 10, 1993

**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service Handbook (OSCS) are basic to all crops, and together with the following specific regulations constitute the certified Rose clover standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** Land must not have grown or been seeded to any Rose clover during the previous five years to be eligible to produce Foundation seed; during the previous three years to produce Registered seed. Land must not have grown or been seeded to Rose clover during the previous two years to produce Certified seed, unless the crop was of the same variety and certified. Rose clover must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of the year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum other varieties permitted <sup>1</sup>	Isolation requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation <sup>3</sup>	None	1320 ft.	1320 ft.
Registered <sup>3</sup>	0.2%	660 ft.	330 ft.
Certified <sup>3</sup>	0.5%	330 ft.	165 ft.
Between classes of same variety		10 feet	

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	98.00%
Other crops, maximum	0.10%	0.25%	0.40%
Inert matter, maximum	2.00%	2.00%	2.00%
Weed seed <sup>4</sup> , maximum	0.25%	0.25%	0.50%
Weeds, Group A <sup>5</sup> , singly or combined	None	27/lb.	45/lb.
Germination (including hard seed)	85%	85%	85%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See Section IV D, General Standards in the OSCS Handbook.

<sup>3</sup> An OSU Seed Lab Orobanche exam is required if Small broomrape is found in a certification field inspection. Two samples are to be submitted in separate containers: one for the Orobanche exam, the other for standard purity and viability testing.

<sup>4</sup> None of the prohibited weeds listed in section V, General Standards in the OSCS Handbook, nor any Chess, St. Johnswort, or Small broomrape allowed in any class of seed.

<sup>5</sup> Group A –Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.



**Oregon Seed Certification Service**

<http://seedcert.oregonstate.edu>

Extension Service

CERTIFICATION STANDARDS  
**SUBTERRANEAN CLOVER**  
(*Trifolium subterraneum*)  
Approved October 23, 1946

**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service Handbook (OSCS) are basic to all crops, and together with the following specific regulations constitute the certified Subterranean clover standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** Land must never have grown Subterranean clover to be eligible to produce Foundation seeds; five years free to produce Registered and Certified seed unless previous crop was of the same variety and certified. Subterranean clover must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum other varieties permitted <sup>1</sup>	Isolation requirements
		Distance adequate to prevent mechanical mixture necessary
Foundation <sup>2</sup>	None	
Registered <sup>3</sup>	0.5%	
Certified <sup>3</sup>	1.0%	

**Special Requirements:** Only one variety may be grown on a farm.

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	97.00%	97.00%	97.00%
Other crops, maximum	0.10%	0.25%	1.00%
Inert matter, maximum	3.00%	3.00%	3.00%
Weed seed <sup>3</sup> , maximum	0.25%	0.25%	0.25%
Weeds, Group A <sup>4</sup> , singly or combined	4/lb.	4/lb.	4/lb.
Germination (including hard seed)	80%	80%	80%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> An OSU Seed Lab Orobanchae exam is required if Small broomrape is found in a certification field inspection. Two samples are to be submitted in separate containers: one for the Orobanchae exam, the other for standard purity and viability testing.

<sup>3</sup>None of the prohibited weeds listed in section V, General Standards in the OSCS Handbook, nor any Bedstraw, St. Johnswort, or Small broomrape allowed in any class of seed.

<sup>4</sup> Group A – Buckhorn plantain, Docks, Sheep sorrel.



**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified White Clover standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** To produce Foundation seed, land must never have grown any White Clover; must have been five years free to produce Registered seed (three of those years cultivated); must have been three years free to produce Certified seed. (With Certified class, the time interval may be shortened one year if one cultivated row crop or clean fallow intervened). White clover must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties <sup>1</sup>	Isolation Requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation <sup>3</sup>	None	1320 ft.	1320 ft.
Registered <sup>3</sup>	0.2%	660 ft.	330 ft.
Certified <sup>3</sup>	1.0%	330 ft.	165 ft.
Between classes of same variety		10 ft.	

**Special Requirements:** A Foundation and/or Registered field may produce only two successive seed crops following seeding, except that each may be reclassified to the next lower class after being harvested for two years. A Certified field on which a stand of perennial plants is maintained may produce a maximum of four successive seed crops following seeding. Volunteer plants will be cause for rejection at the end of the second seed crop.

**Seed Standards:** (Minimum Sample Size – 1/4 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	98.00%
Other crops, maximum	0.10%	450 seeds of one crop or	
		0.25%	0.25%
Sweet Clover, maximum	None	90/lb.	180/lb.
Inert matter, maximum	2.00%	2.00%	2.00%
Weed seed <sup>4</sup> , maximum	0.10%	0.30%	0.30%
Weed seed, GROUP A <sup>5</sup> , singly	None	23/lb.	23/lb.
Weed seed, GROUP A <sup>4</sup> combined	None	69/lb.	69/lb.
Germination, including hard seed	85%	85%	85%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See section IV, D in the OSCS Handbook.

<sup>3</sup> An OSU Seed Lab Orobancha exam is required if Small broomrape is found in a certification field inspection. Two samples are to be submitted in separate containers: one for the Orobancha exam, the other for standard purity and viability testing.

<sup>4</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor any St. Johnswort, Wild carrot, or Small broomrape allowed in any class of seed.

<sup>5</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.



**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified Orchardgrass standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook. Hayking II has no Foundation generation.

**Field History:** To be eligible to produce Foundation seed, land must not have grown or been seeded to any Orchardgrass during the previous five years. Land must not have grown or been seeded to orchardgrass during the previous 18 months to produce Registered or Certified seed unless the previous crop was of the same variety, class and certified. Orchardgrass must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties <sup>1</sup>	Isolation Requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation	None	900 ft.	900 ft.
Registered	0.5%	660 ft.	300 ft.
Certified	1.0%	330 ft.	165 ft.

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
*Pure seed, minimum	92.00% 90.00%	92.00% 90.00%	92.00% 90.00%
Other crops, maximum	0.10%	0.10%	0.50%
*Inert matter, maximum	8.00% 10.00%	8.00% 10.00%	8.00% 10.00%
Weed seed <sup>3</sup> , maximum	0.30%	0.30%	0.30%
Weed seed, GROUP A <sup>4</sup> , singly or combined	None	15/lb.	45/lb.
Germination, minimum	85%	85%	85%

\*This change in purity standards will take effect on July 1, 2013 only if accepted by the Certification Foundation Seed and Plant Materials Board at their annual meeting on February 12<sup>th</sup>, 2013 and if the Association of Official Seed Analysts (AOSA) Orchardgrass rule proposal "Eliminating the Orchardgrass factoring procedure" has been passed in May, 2013.

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See section IV, D in the OSCS Handbook.

<sup>3</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor St. Johnswort is allowed in any class of seed.

<sup>4</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.



CERTIFICATION STANDARDS  
**PERENNIAL RYEGRASS**  
*(Lolium perenne)*  
 Revised February 14, 2012

**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified Perennial ryegrass standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** To produce Foundation or Registered seed, land must not have grown or been seeded to any other variety of Perennial ryegrass or Intermediate ryegrass or Festulolium during the five previous years, for certified class two years applies unless of the same variety, class and certified. Perennial Ryegrass must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties	Isolation Requirements <sup>1, 2</sup>	
		Less than 5 acres	More than 5 acres
Foundation	None	900 ft.	900 ft.
Registered	0.5%	660 ft.	300 ft.
Certified	1.0%	330 ft.	165 ft.

**Seed Standards:** (Minimum Sample Size – 1/2 Pound) **Acclaim, Agresso, Artal Bonita, Fantoom, Friend, Linn, Reveille, Sprinter, Taptoe**

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Total ryegrass, minimum	99.00%	99.00%	99.00%
Crops other than ryegrass, maximum	0.10%	0.25%	0.50%
Annual ryegrass <sup>3</sup> , maximum	0.32%	1.00%	3.00%
Total other crops incl. Annual ryegrass, maximum	0.42%	1.25%	3.50%
Inert matter, maximum	1.00%	1.00%	1.00%
Weed seed <sup>4</sup> , maximum	0.15%	0.30%	0.50%
Weed seed, GROUP A <sup>5</sup> singly or combined	None	45/lb.	45/lb.
Germination, minimum	90%	90%	90%
Germination, minimum Linn	85%	85%	85%
Ploidy test, minimum <sup>6</sup>	100%	99%	95%

<sup>1</sup> This distance must be maintained from all varieties of Ryegrass (Annual, Intermediate, and Perennial), Meadow fescue and Festulolium of the same ploidy level. Isolation between diploids and tetraploids shall be no less than 15 feet. See section IV, D in the OSCS Handbook.

<sup>2</sup> Foundation and Registered fields of Perennial ryegrass must be isolated 300 ft. from tall fescue. Border removal is allowed for fields over five acres. See section IV, D in the OSCS Handbook.

<sup>3</sup> See section IX, D5 in the OSCS Handbook.

<sup>4</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor St. Johnswort allowed in any class of seed.

<sup>5</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.

<sup>6</sup> Ploidy Test: Is a test required to establish the incidence of diploid ryegrass in all tetraploid ryegrass varieties and assists in determining certification eligibility. A ploidy test should be requested at the time of sampling. Only varieties described as tetraploid must be tested, those described as diploid or those of 'unknown' ploidy need not be tested.



**Seed Standards: All other varieties not listed as requiring 99% pure seed**

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Total ryegrass, minimum	97.00%	97.00%	97.00%
Crops other than ryegrass, maximum	0.10%	0.25%	0.50%
Annual ryegrass <sup>1</sup> , maximum	0.32%	1.00%	3.00%
Total other crops incl. Annual ryegrass, maximum	0.42%	1.25%	3.50%
Inert matter, maximum	3.00%	3.00%	3.00%
Weed seed <sup>2</sup> , maximum	0.15%	0.30%	0.50%
Weed seed, GROUP A <sup>3</sup> singly or combined	None	45/lb.	45/lb.
Germination, minimum	90%	90%	90%
Germination, minimum – 1GSquared, 246, All*Star, Americus, Applaud II, Apple GL, Aubisque, Barvestra, Belle, Birdie, Birdie II, Blazer, Blazer II, Blazer III, Blazer 4, Brightstar, Brightstar II, Brightstar SLT, Cabo II, Caliente, Calypso III, Casper, Catalina, Catalina II, Chaparral, Charger, Charger II, CIS-MBH, Citation, Citation II, Citation III, Citation Fore, Confetti, Confetti 2, Crown, Cutter, Cutter II, Dandy, Dasher, Dasher II, Dasher 3, Delray, Derby, Edge, Edge II, Equal, Express, Express II, Fiesta, Fiesta II, Fiesta 3, Fiesta 4, Frontier, Game, Gator, Goalie, Grand Slam, Grand Slam 2, Gray Fox, Gray Goose, Gray Star, Harrier, Hawkeye, Hawkeye II, Headstart, Headstart 2, Home Run, Imagine, Integra II, IS-PR 235 (Kokomo II), IS-PR 409, Jazz, Jiffie II, La Quinta, Legacy, Lindsay, Lowgrow, Lowgrow II, Mach 1, Manhattan 3, Manhattan 4, Navajo, Omega II, Omega 3, Omni, Pageant, Palace, Passport, Pavilion, Pearl, Pearl II, Penguin, Penguin 2, Pennant, Pennfine, Peregrine, PR 8821, Premier, Primary, Provocative, Quicksilver, Quickstart, Quick Trans, Racer, Racer 2, Regal, Roadrunner, Salinas, Saturn II, Seville 3, Slugger, Soprano, SR 4000, SR 4010, SR 4100, SR 4200, SR 4220, SR 4300, SR 4330, SR 4420, SR 4500, SR 4550, SR 4600, Stellar GL, Sunshine, Sunshine 2, T3, Top Hat, Whistler, Wind Dance 2, Zoom	85%	85%	85%
Ploidy test, minimum <sup>4</sup>	100%	99%	95%

<sup>1</sup> See section IX, D5 in the OSCS Handbook.

<sup>2</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor St. Johnswort allowed in any class of seed.

<sup>3</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel and Bedstraw.

<sup>4</sup> Ploidy Test: Is a test required to establish the incidence of diploid ryegrass in all tetraploid ryegrass varieties and assists in determining certification eligibility. A ploidy test should be requested at the time of sampling. Only varieties described as tetraploid must be tested, those described as diploid or those of 'unknown' ploidy need not be tested.

**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified Annual fescue standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook

**Field History:** To be eligible to produce Foundation seed, land must not have grown or been seeded to any **Fine fescue species (Chewings, Red, Hard, Sheep, Blue, Idaho, Annual)** species during the previous five years. Land must not have grown or been seeded to these grasses during the previous 18 months to produce Registered or Certified seed unless the previous crop was of the same variety and class, and certified. Fine fescue must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties <sup>1</sup>	Isolation Requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation	None	900 ft.	900 ft.
Registered	0.5%	660 ft.	300 ft.
Certified	1.0%	330 ft.	165 ft.

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	97.00%
Other crops, maximum	0.10%	0.10%	0.25%
Inert matter, maximum	2.00%	2.00%	3.00%
Weed seed <sup>3</sup> , maximum	0.10%	0.30%	0.30%
Weed seed, GROUP A <sup>4</sup> , singly or combined	None	<b>31/lb.</b>	<b>31/lb.</b>
Germination	85%	85%	85%
Germination, Wintergreen	80%	80%	80%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See section IV, D in the OSCS Handbook. **Isolation is required between varieties of Annual, slender creeping red, Chewings, Hard and Sheep fescue.**

<sup>3</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor St. Johnswort allowed in any class of seed.

<sup>4</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.

**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified **Hard, Sheep, Blue and Idaho fescue standards**.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** To be eligible to produce Foundation seed, land must not have grown or been seeded to any **Fine fescue species (Chewings, Red, Hard, Sheep, Blue, Idaho, Annual)** species during the previous five years. Land must not have grown or been seeded to these grasses during the previous 18 months to produce Registered or Certified seed unless the previous crop was of the same variety and class, and certified. Fine fescue must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties <sup>1</sup>	Isolation Requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation	None	900 ft.	900 ft.
Registered	0.5%	660 ft.	300 ft.
Certified	1.0%	330 ft.	165 ft.

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	97.00%
Other crops <sup>3</sup> , maximum	0.10%	0.10%	0.25%
Inert matter, maximum	2.00%	2.00%	3.00%
Weed seed <sup>4</sup> , maximum	0.10%	0.30%	0.30%
Weed seed, GROUP A <sup>5</sup> , singly or combined	None	<b>23/lb.</b>	<b>23/lb.</b>
<b>Only in Idaho fescue</b>	<b>None</b>	<b>16/lb.</b>	<b>16/lb.</b>
Germination	85%	85%	85%
Germination, Wintergreen	80%	80%	80%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See section IV, D in the OSCS Handbook. Isolation is required **between varieties of Hard, Sheep, Blue and Idaho fescue, and between varieties of Hard or Sheep fescue and varieties of Annual fescue.** Isolation is not required between varieties in the **Hard – Sheep – Blue - Idaho fescue group adjacent to varieties in the Red fescue - Chewings fescue group.**

<sup>3</sup> See section IX, D3 in the OSCS Handbook. The ammonia test is done automatically on all certified seed lots **of Hard, Sheep, Blue and Idaho fescue to determine the presence of yellow fluorescing Red and Chewings fescue; tolerances are: Foundation, zero yellow; Registered, one yellow; Certified, 2% yellow, where % yellow = # yellow ÷ (# yellow + # green) x 100.**

<sup>4</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor St. Johnswort allowed in any class of seed.

<sup>5</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.

**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified **Chewings and slender creeping red fescue (42 chromosomes)** standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** To be eligible to produce Foundation seed, land must not have grown or been seeded to any **Fine fescue species (Chewings, Red, Hard, Sheep, Blue, Idaho, Annual)** during the previous five years. Land must not have grown or been seeded to these grasses during the previous 18 months to produce Registered or Certified seed unless the previous crop was of the same variety and class, and certified. Fine fescue must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties <sup>1</sup>	Isolation Requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation	None	900 ft.	900 ft.
Registered	0.5%	660 ft.	300 ft.
Certified	1.0%	330 ft.	165 ft.

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	97.00%
Other crops, maximum	0.10%	0.10%	0.25%
Inert matter, maximum	2.00%	2.00%	3.00%
Weed seed <sup>3</sup> , maximum	0.10%	0.30%	0.30%
Weed seed, GROUP A <sup>4</sup> , singly or combined	None	16/lb.	16/lb.
Germination	85%	85%	85%
Germination, Wintergreen	80%	80%	80%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See section IV, D in the OSCS Handbook. **Isolation is required between varieties of Chewings, slender creeping red fescue, and Annual fescue.** Isolation is not required between Red fescue varieties having 56 chromosomes (**strong creeping**) and those having 42 chromosomes (including Chewings) where satisfactory documentary evidence of **each variety's ploidy** is accepted. Experimental, and OECD varieties for which an authentic sample has not been provided, will continue to require isolation distances for cross-pollinating varieties. Forty-two chromosome Red fescue varieties (slender creeping) include, **but may not be limited to:** Count, Dawson, Marker, Rainier, Seabreeze, Seabreeze GT, SeaLink. **Isolation is not required between varieties in the Chewings - slender creeping red fescue group and varieties in the Hard – Sheep – Blue - Idaho fescue group.**

<sup>3</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor St. Johnswort allowed in any class of seed.

<sup>4</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.

**Certification Standards:** The general standards for seed certification found in the Oregon Seed Certification Service (OSCS) Handbook are basic to all crops, and together with the following specific regulations constitute the certified **strong creeping red fescue (56 chromosomes)** standards.

**Varieties Certified:** Varieties and classes eligible for planting may be found in the OSCS Handbook.

**Field History:** To be eligible to produce Foundation seed, land must not have grown or been seeded to any **Fine fescue species (Chewings, Red, Hard, Sheep, Blue, Idaho, Annual)** during the previous five years. Land must not have grown or been seeded to these grasses during the previous 18 months to produce Registered or Certified seed unless the previous crop was of the same variety and class, and certified. Fine fescue must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

**Field Inspections:** Include a seedling and a seed crop inspection. The seedling application must be submitted within 60 days of planting, and a seed crop application must be submitted by April 15 of each year in which seed is produced.

**Field Standards:**

Class of seed produced	Maximum permitted Other Varieties <sup>1</sup>	Isolation Requirements <sup>2</sup>	
		Less than 5 acres	More than 5 acres
Foundation	None	900 ft.	900 ft.
Registered	0.5%	660 ft.	300 ft.
Certified	1.0%	330 ft.	165 ft.

**Seed Standards:** (Minimum Sample Size – 1/2 Pound)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	98.00%	98.00%	97.00%
Other crops, maximum	0.10%	0.10%	0.25%
Inert matter, maximum	2.00%	2.00%	3.00%
Weed seed <sup>3</sup> , maximum	0.10%	0.30%	0.30%
Weed seed, GROUP A <sup>4</sup> , singly or combined	None	<b>16/lb.</b>	<b>16/lb.</b>
Germination	85%	85%	85%
Germination, Wintergreen	80%	80%	80%

<sup>1</sup> Includes off-type plants.

<sup>2</sup> See section IV, D in the OSCS Handbook. **Isolation is required between varieties of strong creeping red fescue.** No isolation is required between Red fescue varieties having 56 chromosomes and those having 42 chromosomes (including Chewings) where satisfactory documentary evidence of **each variety's** ploidy is accepted. Experimental, and OECD varieties for which an authentic sample has not been provided, will continue to require isolation distances for cross-pollinating varieties. **Isolation is not required between strong creeping red fescue varieties and varieties of Hard, Sheep, Blue, Idaho or Annual fescue.**

<sup>3</sup> None of the prohibited weeds listed in section V in the OSCS Handbook, nor St. Johnswort allowed in any class of seed.

<sup>4</sup> GROUP A – Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.