

Grass and Legume Advisory Committee

Schedule and Agenda December 10th, 2025 1:00 PM Linn County Extension Office, Tangent OR

Members Present: Kevin Loe, Kate Hartnell, Seth Smith, Kevin Osborne, Brett Freeborn, Terri Burr, Rachel Hankins, Roger Ruckert, Brian Parker, KC Coon, Tim Ford, Christy Tanner, Ryan Hayes, Manoj Shukla, Dan Curry, Andrew Altishin, David Stimpson, Teresa Nicholson, Craig Agidius (Secretary).

Others Present: Jodi Keeling, Tami Brown, Lorinda Hughes, Mel Laam, Alex Albion, Terry Burr, Jesse Benbow, Misbah Yasin, Michelle Palacios, Maureen LaGrande

Call to Order (Kevin Loe) 1:01 PM

1. Welcome: Introductions.
2. Review of Membership.
3. Changes/additions to agenda.

Terri Burr requested to add an old business item, "Review GPS coordinates discussion from 2024 GLAC" before 'Item 1 – Soybean – update seed standards' to the 2025 agenda. A motion was made to accept the addition. The motion was seconded and passed unanimously.

4. Approval of Minutes from the 2024 Meeting

The link to the 2024 Minutes was sent out via email to all active members prior to the meeting in addition to a physical copy provided at the meeting. All approved the minutes as written with no corrections.

5. Certification Board action items concerning Grass and Legume Committee (Craig)

Craig presented the updates from the Board stating that the motions put forward from the committee were all passed and are listed in the front of the 2025 Seed Certification Handbook.

6. **Add in Item** – Review GPS coordinates discussion from 2024 GLAC (Terri B.)

Terri shared that, last year, members of the committee requested that Andy obtain more information from OSU legal to clarify the reasoning for not including field GPS coordinates in reports. She mentioned that she hadn't heard anything. Andy stated that he had made multiple requests to OSU legal and had yet to get a response. He mentioned that it never got followed-up and that the stance was unchanged from the previous

meeting. A substantial back-and-forth discussion was had between Andy and other committee members regarding field GPS coordinates. Andy mentioned that OSCS could develop programming, by request, to give growers the option to share or not share information with their seed contractors. He noted that funding would need to be secured for program development as it wouldn't be vital to the seed certification process and would be considered an accessory program. Andy stated he would continue to reach out to OSU Legal and report back to the committee with their response via email. Andy sent an email on 12/16/2025 to all members of the committee including OSU Legals response. OSU Legals response: GPS coordinates identifying exact field locations, as well as boundary data delineating field limits, are submitted as part of the OSCS initial application process for the sole purpose of enabling OSCS to carry out its seed certification responsibilities in Oregon. Accordingly, this information is not disclosed except with the consent of the grower or pursuant to a court order or administrative directive requiring such disclosure. In addition, this type of information may be addressed in contractual agreements between growers and seed contractors, and OSU should not be a party to such agreements.

7. **Item 1** – Soybean – update seed standards (Jodi K.) Appendix 1

Jodi shared that the Soybean standards need updated. She proposed the first change to be the removal of the sentence in field standards stating, “isolation between seed fields of different classes but of the same variety must be adequate to prevent mixtures” due to its mention in the general field standards. Jodi also presented seed standard changes made to align with the AOSCA Handbook standards and to improve standard clarity. Two of the proposed seed standard revisions for the Certified class were to change # per lb to percentages to better accommodate lab reporting purposes. A member asked if the footnotes using # per lb needed to be changed to percentages as well. Jodi replied that the footnote is an AOSCA standard and is required to be shown as written. She noted that the varying weight of contaminants could skew the allowance if changed to a percentage. A motion was made to accept the changes as presented. There was some discussion among the group regarding the weight of an individual soybean, which led Dave to share that a purity test for Soybean is 500 grams. Tami proposed that if the purity test for Soybean is 500 grams, then the minimum sample size would need to be changed from ½ lb to 2 lbs. An amended motion was made to change the minimum sample size requirement from ½ lb to 2 lbs in addition to accepting the changes as presented previously. The motion was seconded and passed unanimously.

8. **Item 2** – Velvet Bentgrass – update seed standards (Tami B.) Appendix 2

Tami shared that there were a fair number of changes to be made to the Velvet Bentgrass standards. She stated that one of the main changes for Velvet Bentgrass was to add a Registered class. A member commented that the field history standards referred to Creeping Bentgrass instead of Velvet Bentgrass. Tami agreed that needed to be corrected. Tami shared that the field and seed standard requirements proposed for Registered class mirror the other bentgrasses in the OSCS Handbook. Brian asked the group if Velvet is like other bentgrasses. Tim responded that it is very similar, just smaller in size. There was some discussion regarding the differences between OECD and AOSCA requirements for bentgrass. Tami also presented changes to the seed standards regarding the Foundation and Certified classes. She mentioned that those changes were made to align with AOSCA and to mirror other OSCS bentgrass requirements. A motion was made to accept the changes as presented. The motion was seconded and passed unanimously.

9. **Item 3** – Bermudagrass & Mustard – add Registered class (Tami B.) Appendix 3 / Appendix 4

Tami stated that she chose to put Bermudagrass and Mustard together as they have few standard changes individually. She shared that it was pertinent to add a Registered class to both the Bermudagrass and Mustard standards as breeders allow a Registered class for both crops. She also shared that the 'Maximum Permitted Restrictive Weeds' need to be added to the Mustard field standards. She noted that the Registered class for the Mustard standards closely mirrors the requirements for Turnips and other similar crops. The Bermudagrass standards closely follows the requirements of other grasses in the OSCS Handbook. Additionally, Tami presented the new footnotes required for the Mustard standards. Terri asked if Registered should be included in the Field History requirements. Tami agreed that it needed to be included. A motion was made to accept the changes for the Bermudagrass and Mustard standards as presented. The motion was seconded and passed unanimously.

10. **Item 4** – Update isolation for Camelina to 50 ft (Craig A.) Appendix 5

Craig shared that a contractor inquired OSCS to re-visit this agenda item from last year. Last year, it was decided to table the item due to a lack of information. Craig mentioned that OSCS recently received a reputable publication from the Standards Manager of Canada Seed Growers Association regarding the reproductive biology of Camelina. The proposal was to change the isolation of Camelina to 50 ft for all classes to align with AOSCA standards. Craig shared a snapshot from the publication covering some of the main points related to the proposed isolation distance change. Two of the key points from that publication stated that Camelina is primarily self-

pollinating and that outcrossing was reported to rapidly decline with increasing distance with almost a 99% reduction at 33 ft from the pollen source. A member noted that 50 ft seemed reasonable considering the biology. A few other members agreed. A motion was made to accept the changes as presented. The motion was seconded and passed unanimously.

11. **Item 5** – New Policy for name updates; Rape/Canola and Indian Ricegrass (Jodi K.)

Jodi shared that common and scientific name changes moving forward will no longer be presented as voteable agenda items. She stated that OSCS is required to change them to coincide with the rest of the states. The seed lab also needs to correctly list the crop/weed of concern on reports. Jodi noted that future scientific name changes will be included as part of the action items page in the OSCS Handbook. Dave asked the reference materials used to update name changes. Jodi stated that OSCS defaults to AOSA rules which uses GRIN.

12. **Item 6** – No fields accepted after one year of planting. Add FSA rule to the handbook (Andy A.) Appendix 6

Andy shared that an attempt was made to sign-up a new field years after the field was planted. He noted that in researching the issue he found an FSA rule that states, “Application to establish the pedigree must be made within one year of seeding. The crop will remain under the supervision of the certifying agency as long as the field is eligible for certification.” We don’t have that wording anywhere in our handbook. Therefore, OSCS is going to add similar verbiage under IV. Production of Certified Seed, A. Application for Field Inspection, 2. Seeding application and inspections stating, “Applications must be submitted in one year (365 days) from the planting date.” Andy closed by informing the group that this is a policy change/update and not a voteable item.

13. **Item 7** – Chickpea – update field standards pertaining to prohibited weeds (Craig A.) Appendix 7

Craig shared that there are a few minor updates to be made to the Chickpea field standards. The first change would be to add the word “Cereal” to better define the type of Rye not permitted for ‘other inseparable crop.’ The second change would be to remove ‘noxious weeds (must be controlled)’ allowing ‘None’ for all generations and replace with “Prohibited weeds: Lack of evidence of control will be cause for rejection”. Craig noted that this change would allow growers the opportunity to control any noxious weeds before setting seed. Dave asked what would be considered evidence of control. Craig stated that visually seeing dieback after an herbicide application and the absence of weed seed set would be considered evidence of control. Andy mentioned that this scenario

would result in a reject subject to re-inspection where a second inspection would take place at a later date. A motion was made to accept the changes as presented. The motion was seconded and passed unanimously.

14. **Item 8** – Update standards to meet AOSCA regulations (Tami B.) Appendix 8

Tami presented a long list of standard changes for various crops to align with AOSCA regulations. Tami noted that the changes can't be voted on as it is mandatory that OSCS meet AOSCA requirements. She opened to the group for discussion on any of the standard changes made. Tami offered that if anyone strongly disagreed with any of the changes that one could ask Andy to bring up the standard to AOSCA. However, it is not easy to change AOSCA standards. There was a brief discussion regarding Sweetvetch germ and hard seed. Dave agreed that it made sense to leave the verbiage as written to align with AOSCA standards.

15. **Item 9** – Perennial Ryegrass – minimum germination discussion (Tami B.) Appendix 9

Tami presented the Perennial Ryegrass standards to have a discussion regarding the variety specific germ requirements. Tami referred to the table on the second page allowing a lower germination percentage, approved by breeders, for specific varieties. Jodi added that it's gotten much more complex over the years with how the varieties are split up based on germ allowances. She also mentioned that it has made grading for the lab much more difficult. A member asked if the proposal was to raise all varieties to 90% germ or to lower all to 85% germ? Many members of the committee agreed on the benefits to be gained from changing the germination to 85% for all perennial ryegrass varieties. A motion was made to change the germination for all perennial ryegrass varieties to 85%. The motion was seconded and passed unanimously.

16. **Item 10** – Alfalfa – fall dormancy discussion (Tami B.) Appendix 10

Tami presented the Alfalfa Standards to the group to have a discussion regarding fall dormancy. She shared that the field history is written based on dormancy and that Oregon doesn't seem to grow alfalfa varieties with large dormancy ratings. Therefore, growers are not allowed to differentiate on field history. Tami mentioned getting in contact with a field rep that works closely with alfalfa. She noted that the field rep didn't seem all that concerned about dormancy. Tami proposed to update the field standards by changing the 1 year out for Certified class to 2 years out and to remove all verbiage referring to fall dormancy. There was some discussion among the group regarding hard seed in alfalfa and if 2 years out was enough time to avoid volunteer issues. Christy stated

that increasing the field history requirement to 2 years kind of negates the dormancy concern. A motion was made to accept the changes as presented. The motion was seconded and passed unanimously.

17. **Item 11** – Radish – discussion of standards (Jodi K.)

Jodi presented an incident where OSCS received an invalid violation from another state. There was some confusion from the other state thinking that OSCS was the seed labeler which is why we received the violation. The violation was for a Radish seed lot in which Radish was found and listed under ‘other crop.’ Jodi presented images of the Radish listed as ‘other crop’ found in the seed lot mentioning that the differentiation in color is what led the seed lab to list it as a different variety. She shared that OSCS doesn’t have ‘other permitted varieties’ listed in the Radish Standards. She also noted that AOSCA, AOSA, and the Cultivar Testing Purity Handbook don’t have anything in regards to allowing ‘other permitted varieties’ in Radish either. Jodi shared multiple images of Radish seed; one image included 3 different lots of the variety in question, another image included seed stock of the variety in question, and the last image of the most commonly grown Radish variety CCS779 for reference. She shared that she received a copy of the variety description noting that there was no mention of seed color as a distinguishing feature for Radish. She also noted that she was unable find any scientific evidence of seed color being genetic to Radish. Jodi stated that there could be a genetic component present but the lack of information proving that isn’t available. Therefore, it doesn’t seem like a good idea to make any changes to the Radish Standards for other variety. Dave shared that he asked his analysts opinion to which they responded that they often see multiple colors of seed in all Radish lots. Jodi mentioned that she also reached out to multiple neighboring state agencies in addition to New Zealand (the origin of the Radish seed) to see how their labs would treat different colored seeds in Radish lots. Ultimately, there was varying information among all labs. Ultimately, it was decided that there wasn’t enough information available to justify a standard change.

18. **Item 12** – Forage grass maturity rating (Jodi K.) Appendix 11

Jodi presented a protocol for Cool Season Forage Grass Maturity Rating developed by a group of individuals within the Oregon grass seed industry. The idea was to start marketing varieties similarly to the fall dormancy rating of alfalfa. She shared that she believed the intention was for it to be used as a tool to determine what kinds of cover crops and companion crops you can put together. Jodi mentioned that the protocol has been discussed multiple years in a row by the Grass Variety Review Board of AOSCA. She shared that the Grass VRB is

going to make an optional note on the variety description for breeders to fill out by choice, not by requirement.

Jodi noted that this rating might start showing up on some variety descriptions. She reassured the group that the rating wouldn't be something that OSCS would certify on and that we certify on varietal purity. A member shared some concerns with the group regarding the Cool Season Forage Grass Maturity Rating. Jodi stated that she had reached out to multiple breeders to get more input on the rating and came to the conclusion that most were not in favor of it for varying reasons. There was some discussion about the rating being presented at the OSA meeting last year and that most were uninterested in the topic.

19. Reports:

- a. College of Agriculture / Crop and Soil Science Department (Manoj Shukla / Dan Curry) Appendix 12
Dan presented an update regarding the two candidates for the Seed Crop Specialist position, other personnel hires, and upcoming dates. Manoj shared that CSS had 108 undergraduate students noting that this was the first year of many to see an increase in on-campus student numbers. He also mentioned that last year was exceptionally good for the department with faculty and students receiving various awards.
- b. OSU Seed Services (Can Curry) Appendix 13
Dan presented the seed services report including an update on the continued increase of Registered K31 Tall Fescue and Registered Gulf Annual Ryegrass, an update on the APD test, and a status update on Computer Seed ID.
- c. Oregon Seed Certification Service (Andy A.) Appendix 14
Andy presented his report highlighting the certified acres by crop for the 2025 season, noting it being a down year. He shared that overall OSCS had about 180,000 acres certified, an 8.6% decrease from last year. Andy mentioned that John Zielinski fully retired this year. He also shared that with John's retirement that there was some reallocation of counties among inspectors.
- d. Oregon State Seed Laboratory (David Stimpson) Appendix 15
Dave shared an update regarding the number of samples received in comparison to last year. He also mentioned that the Seed Lab has been able to rely more heavily on student work to fill full-time positions. Dave also gave updates on a fluorescence referee in support of a rule change proposal, a PCR test to determine annuality, and verifying the validity of a RAD test.
- e. Oregon Department of Agriculture (Teresa Nicholson) Appendix 16
Teresa gave an update on the slow pay / no pay complaint. She also presented the seed export statistics noting that the overall summary was ahead of last year. Lastly, she shared the hay/straw statistics.

20. Elect 2026 Vice-chairman from Grower representatives who would then become chair and ex-officio member of SCAC in 2027.

Seth Smith was nominated to be vice-chair next year. It was moved and seconded to accept Seth.

21. Elect a representative to report to the 2026 Board Meeting on February 18th, 2026 @ 9AM.

Terri Burr volunteered to be the representative to the Board. It was moved and seconded to accept Terri.

22. Select date and time of next annual meeting.

The group unanimously agreed to the day after Seed Growers League at the Linn County Extension Office in 2027.

23. Adjourn.

Respectfully Submitted,

Craig Agidius

Enclosures:

Appendix 1: Soybean Standards
Appendix 2: Velvet Bentgrass Standards
Appendix 3: Bermudagrass Standards
Appendix 4: Mustard Standards
Appendix 5: Camelina Standards / Biology of Camelina
Appendix 6: IV. Production of Certified Seed / FSA Rule
Appendix 7: Chickpea Standards
Appendix 8: Standards Review – Audit Results
Appendix 9: Perennial Ryegrass Standards
Appendix 10: Alfalfa Standards
Appendix 11: Forage Grass Maturity Rating
Appendix 12: OSU Update / Crop and Soil Science Department
Appendix 13: OSU Seed Services Update
Appendix 14: OSCS Update
Appendix 15: OSU Seed Lab Update
Appendix 16: ODA Update

CC: Staci Simonich, Dean, College of Agricultural Science, OSU
Michelle Palacios, Executive Director, Oregon Seed Growers League
Kate Hartnell, President, Oregon Seed Association

Action Items for the Board

2025 Grass and Legume Advisory Committee

1. Update Soybean Seed Standards to improve laboratory test reporting and to align with AOSCA standards. Remove sentence from Soybean field standards, "isolation between seed fields of different classes but of the same variety must be adequate to prevent mixtures."
2. Update Velvet Bentgrass standards to add Registered class. Revise seed standards for Velvet Bentgrass to align with AOSCA standards and to mirror other OSCS bentgrass requirements.
3. Update Bermudagrass and Mustard standards to add Registered class. Add 'Maximum Permitted Weeds' to Mustard field standards.
4. Update Camelina isolation requirements to 50 ft for all classes.
5. Update Chickpea field standards. Add "Cereal" to better define the type of rye not permitted for 'other inseparable crop.' Remove "Noxious weeds (must be controlled)" and replace with "Prohibited weeds: Lack of evidence of control will be cause for rejection."
6. Update germination requirement for all varieties in Perennial Ryegrass standards to 85%.
7. Update field history requirements for Alfalfa standards by removing all verbiage referring to fall dormancy and changing the 1 year out requirement to 2 years out for Certified class.



Oregon Seed Certification Service
<http://seedcert.oregonstate.edu>

CERTIFICATION STANDARDS
SOYBEAN
(Glycine max)
 Revised February 19, 2025

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 standards for certified soybean.

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 another variety of soybean for one year. For Registered and Certified classes, these requirements are waived if the previous crop year of soybean was of the same variety, same or higher class, and passed certification field requirements for genetic purity. Soybeans must be planted in distinct rows. The Seed Certification Office prior to planting must approve exceptions.

Field Inspections: Includes one inspection for Certified class seed a flower inspection is required for Foundation and Registered class seed. Application for field inspection must be submitted by June 15 or 15 days after planting for fields planted after June 15.

Field Standards:

Class of seed produced	Maximum permitted Other Varieties ¹	Isolation Requirements
Foundation	1:1000 (0.1%)	Adequate to determine field boundaries and prevent mixtures
Registered	1:1000 (0.1%)	
Certified	1:500 (0.2%)	
Isolation between seed fields of different classes but of the same variety must be adequate to prevent mixtures.		

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	None	None 0.20%	1 per 2 lb 0.30%
Other kinds ² , maximum	None	0.10%	0.2% 0.10%
Other varieties ¹ , maximum	None	0.10%	0.20%
Inert matter, maximum	2.00%	2.00%	2.00%
Weed seed ³ , maximum	None	1 per lb 0.05%	2 per lb 0.05%
Germination including hard seed, minimum	85%	85%	85%

¹ Includes off-type plants and seeds that can be differentiated from the variety being inspected, shall not consider off-colored beans due to environmental factors.

² Not to exceed 3/lb. in any class. Corn and sunflower seed maximum: None for Foundation and Registered classes, 1/lb. for Certified class.

³ None of the prohibited weeds listed in Section V in the OSCS Handbook allowed in any class of seed, nor any *Galium* spp. Total weed seed not to exceed 10/lb.



Oregon Seed Certification Service

<http://seedcert.oregonstate.edu>

CERTIFICATION STANDARDS

VELVET BENTGRASS

(*Agrostis canina*)

Revised February 7, 2026

Certification Standards: The general rules 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 standards for certified velvet bentgrass.

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

Field History: Land to produce Foundation or Certified seed must not have grown or been seeded to any *Agrostis* species during the previous five years. For Registered and Certified classes, these requirements are waived if the previous crop year of creeping bentgrass was of the same variety, same or higher class and passed certification field requirements for genetic purity. Velvet bentgrass 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 ¹	Isolation Requirements ²	
		Less than 5 acres	More than 5 acres
Foundation	None	900 ft.	900 ft.
Registered	0.1%	660 ft.	300 ft.
Certified	1%	330 ft. ³	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%	96.00% 98.00%
Other crops, maximum	0.10% None	0.10%	2.00% ⁴ 0.50% ⁴
Inert matter, maximum	2.00%	2.00%	4.00% 2.00%
Weed seed ⁵ , maximum	0.10% None	0.10%	0.25%
Weed seed, GROUP A ⁶ , singly or combined	None	None	360/lb 180/lb
Germination, minimum	85%	85%	85%

Appearance: Bentgrass seed lots composed of 75% or more hulled (groated) seed will not be certified unless blended with unhulled certified eligible lots of seed in reasonable amount to present good appearance of less than 75%.

¹ Includes off-type plants.

² This distance must be maintained from all other varieties of velvet bentgrass as well as other types of bentgrass such as colonial and creeping. See Section IV, D in the OSCS Handbook.

³ Certified class fields less than 5 acres must be 165 ft. from all colonial and creeping bentgrass.

⁴ Not more than 0.25% of Kentucky and/or rough bluegrass.

⁵ None of the prohibited weeds listed in Section V in the OSCS Handbook, nor corn bedstraw is allowed in any class of seed.

⁶ GROUP A – broadleaf or common plantain, buckhorn plantain, ~~big mouse ear~~, annual bluegrass, yarrow, sheep sorrel and docks



Oregon Seed Certification Service

<http://seedcert.oregonstate.edu>

CERTIFICATION STANDARDS

BERMUDAGRASS

(*Cynodon dactylon* var. *dactylon*)

Revised February 7, 2024

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 standards for certified bermudagrass.

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

Field History: Fields eligible for the production of Foundation and Registered seed must not have grown or been seeded to the same species during the previous five years and must have included a cultivated crop for three years. Fields eligible for the production of Certified seed must not have grown or been seeded to the same species during the previous three years and must have included a cultivated crop for two years. For Registered and Certified classes, these requirements are waived if the previous crop year of bermudagrass was the same variety, same or higher class and passed certification field requirements for genetic purity. Bermudagrass must be planted in distinct rows. Exceptions, as specified by the breeder for the variety, 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 30 days of planting and a seed crop application must be submitted by June 15 each year seed is produced.

Field Standards:

Class of seed produced	Maximum other varieties permitted ¹	Isolation Requirements ²	
		Less than 5 acres	More than 5 acres
Foundation	None	900 ft.	900 ft.
Registered	0.1%	660 ft	300 ft.
Certified	0.3%	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	96.00%	96.00%	96.00%
Other crops, maximum	0.01%	0.10%	0.25%
Inert matter, maximum	4.00%	4.00%	4.00%
Weed seed ³ , maximum	0.01%	0.10%	0.20%
Weed seed, Group A ⁴ , singly or combined	None	None	45/lb.
Germination, minimum	80%	80%	80%

¹Includes off-type plants.

²See Section IV, D in the OSCS Handbook.

³None of the prohibited weeds listed in Section V in the OSCS Handbook allowed in any class of seed.

⁴GROUP A - buckhorn plantain, docks, sheep sorrel and *Galium* spp.



Oregon Seed Certification Service
<http://seedcert.oregonstate.edu>

CERTIFICATION STANDARDS
MUSTARD
 (*Brassica carinata*, *B. juncea*, *B. nigra* and *Sinapis alba* L.)

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 standards for certified mustard.

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 mustard crops during the previous five years to produce Foundation and two years to produce Certified generations. Exception: the same variety and generation planted with a three-year time interval for Foundation and one-year interval for Certified from previous harvest. Mustard must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

Field Inspections: Field inspections will be made when the crop is in the early flowering stage the year in which a seed crop is produced. Volunteer plants may be cause for rejection or reclassification of a seed field. The field application must be submitted by April 15th, or within 30 days of planting if planted on or after April 1st.

Field Standards:

Class of seed produced	Maximum permitted Other Varieties ¹	Maximum permitted Restricted Weeds	Isolation Requirements ² (Any size field)
Foundation	None	None	1320 ft.
Registered	1:1,000	None	1320 ft.
Certified	1:500	1:10,000	660 ft.

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

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue Tag)
Pure seed, minimum	99.00%	99.00%	99.00%
Other crops ³ , maximum	0.01%	0.01%	0.25% 0.01%
Inert matter, maximum	1.00%	1.00%	1.00%
Weed seed ⁴ , maximum	0.01%	0.01%	0.25% 0.03%
Restricted weeds ⁵	one	one	two
Germination, minimum	85%	85%	85%

¹ Other varieties shall be considered to include off-type plants and plants that can be differentiated from the variety being inspected.

² See Section IV, D in the OSCS Handbook.

³ Shall not exceed 1 per pound for foundation, 2 per pound for registered, and 5 per pound for certified.

⁴ None of the prohibited noxious weeds listed in Section V in the OSCS Handbook, nor any *Galium* spp., docks or sheep sorrel allowed in any class of seed.

⁵ Restricted weeds, number of seeds allowed in a noxious weed exam, are defined as *Raphanus raphanistrum* and *Sinapis arvensis*.



Oregon Seed Certification Service
<http://seedcert.oregonstate.edu>

CERTIFICATION STANDARDS
CAMELINA
(Camelina sativa)
 Revised February 19, 2025

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 standards for certified camelina.

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 another variety of camelina during the previous three years. For Registered and Certified classes, these requirements are waived if the previous crop year of camelina was of the same variety, same or higher class and passed certification field requirements for genetic purity. Camelina 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. Application for seedling inspections must be submitted within 60 days of planting. Spring camelina fields must be signed up within 15 days of planting. Application for field inspection must be submitted by April 15 or 15 days after planting for fields planted after April 15.

Field Standards:

Class of seed produced	Maximum permitted Other Varieties ¹	Isolation Requirements ²
Foundation	1:5000	660 ft. 50 ft.
Registered	1:2000	660 ft. 50 ft.
Certified	1:1000	330 ft. 50 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%	0.20%	0.30%
Inert matter, maximum	2.00%	2.00%	2.00%
Weed seed ³ , maximum	0.05%	0.05%	0.25%
Germination	85%	85%	85%

¹ Includes off-type plants and plants that can be differentiated from the variety being inspected.

² See Section IV, D in the OSCS Handbook.

³ None of the prohibited weeds listed in Section V in the OSCS Handbook allowed in any class of seed, nor any *Galium* spp.

Biology of Camelina

4.1 Reproductive biology

Camelina reproduces by means of seed and does not exhibit any vegetative reproduction (Francis and Warwick 2009). Rates of outcrossing for camelina have not been documented as low (0.09-0.28%) (Walsh et al. 2012). Camelina is reported to be primarily self-pollinating (Plessers et al. 1962; Zubr 1997; Mulligan 2002), but cross-pollination mediated by insects, and in particular bees, has also been suggested (Blamey and Grey-Wilson 1989; Corbet et al. 1991; Milbau and Stout 2008). A study conducted in Sweden measured the quantitative distribution of the worker bumblebee (*Bombus*spp.) population on different agricultural crops and found that camelina was visited by bumblebees at a frequency similar to flax (*Linum usitatissimum* L.) and rapeseed (*Brassica napus* var. *oleifera*) (Fridén 1972).

4.4 Gene flow during commercial seed and biomass production

In field trials conducted in Alberta, pollen-mediated gene flow from transgenic camelina to a conventional cultivar was observed to a maximum of 0.8% (858 hybrids from 340,000 seeds screened). Outcrossing was reported to rapidly decline with increasing distance, with a 50% reduction in pollen-mediated gene flow 1.5 m from the pollen source, and a 99% reduction at 10.0 m from the pollen source. Outcrossing was also affected by flowering synchrony and planting date (Walsh et al. 2015).

IV. Production of Certified Seed

A. Application for Field Inspection

1. Application for field inspection serves as notification, registration, and as an agreement to abide by all rules and regulations governing certification in Oregon.

Inspections of certified fields are of two types, seedling and seed crop. Inspection of some annual crops combines aspects of both seedling and seed crop.

A standard field number system will be year of planting followed by a hyphen and up to three numbers thereafter. No letters can be accepted.

2. Seedling application and inspections are to be made on all OECD crops and most domestic crops; see the individual standards for more information. An inspection will be made at planting time on vegetatively propagated grasses. An adequate map must accompany the seedling inspection form and must include a detailed boundary of the area to be inspected. Applicants are strongly advised to utilize the OSCS online mapping system when preparing the initial field application.

A seedling field will be checked for eligibility of *Stock Seed*, adherence to *Land Requirements*, potential *Isolation* problems, presence of *Prohibited Weeds*, *Field Management*, and *Location*.

Application for seedling inspection must be submitted immediately after planting. Applications must be submitted within one year (365 days) from the planting date. Each crop has deadlines for applying for seedling and crop inspections; check with the Certification Office for specific deadlines. In case of a thin stand or stand failure, the seedling application and inspection may serve as a record to substantiate declared land history and variety seeded for reseeding qualifications.

3. Seed Crop Application and Inspection: The grower must apply for a seed crop inspection before the specified deadline each year if a certified seed crop is to be harvested. A seed field will be checked for eligibility (having a prior seedling inspection, or if an annual, stock seed and land requirement eligibility), potential *Isolation* problems, presence of *Prohibited Weeds*, and *Field Management*. A field will be checked for compliance with individual field standards listed for the crop and items listed in the Handbook.

Footnote 57 Federal Seed Act:

Application to establish the pedigree must be made within one year of seeding. The crop will remain under the supervision of the certifying agency as long as the field is eligible for certification.



Oregon Seed Certification Service
<http://seedcert.oregonstate.edu>

CERTIFICATION STANDARDS
CHICKPEA
(Cicer arietinum)
 Revised February 18, 2026

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 standards for certified chickpea.

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

Field History: To be eligible to produce Foundation class of seed, field must not have been planted to or have grown a crop of chickpeas for three years, and two years for Registered and Certified classes. For Registered and Certified classes, these requirements are waived if the previous crop year of chickpea was of the same variety, same or higher class, and passed certification field requirements for genetic purity. Chickpeas must be planted in distinct rows. The Seed Certification Office must approve exceptions prior to planting.

Field Inspections: Each field intended for certification must be inspected two times during the harvest year, one of which must be at the late-pod stage. The presence of Ascochyta Blight in a field will be cause for rejection. Any condition which prevents adequate inspection may be cause for rejection. The field application must be submitted by June 15th or within 30 days after planting if planting after June 1st.

Isolation: Each variety must be separated by a three-foot strip from another variety unless a specific variety requires additional isolation distance.

Field Standards:

Factor	Foundation	Registered	Certified
Other varieties	None	0.05%	0.10%
Other crop, inseparable No Austrian pea or cereal rye permitted	None	0.01%	0.05%
Ascochyta Blight (<i>Ascochyta rabiei</i>)	None	None	None
Noxious weeds (must be controlled)	None	None	None

Prohibited weeds: *Lack of evidence of control will be cause for rejection*

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

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	99.00%	99.00%	99.00%
Other crop, maximum	None	None	0.10%
Other varieties, maximum	0.01%	0.05%	0.10%
Total other crop including other varieties, maximum	0.01%	0.05%	0.20%
Inert matter, maximum	1.00%	1.00%	1.00%
Weed seed ¹ , maximum	None	None	0.25%
Germination, minimum	85%	85%	85%

Certified blue tag seed should be well screened and graded in color and otherwise of good appearance.

¹None of the prohibited weeds listed in Section V in the OSCS Handbook nor any sheep sorrel, docks, *Galium* spp., wild oat, vetch, Austrian pea, or **cereal** rye allowed in any class of seed.

Standards Review – Audit Results

Grass

Altai/Basin Wildrye, Crested Hairgrass: Seed standards update other crop (R=0.25%, C=0.50%).

Legumes

Field Bean: seed standards add other varieties F=none, R=0.10%, C=0.20%

Clovers (all): Add sweetclover to Group A weeds in footnote.

Ball & Arrowleaf Clover: Add isolation between different classes 10 feet.

Subterranean clover: Germination increase to 85%; pure seed increase to 98.0%

Lupine: Field standards add crop inspection must be at full bloom. Seed standards decrease other crop (F=0.01%, R=0.01%, C=0.02%) and weed seed (F/R/C=0.02%). Include max moisture 15%

Pea: Updated seed standards for other crop (F=0.05%, R=0.10%, C=0.20%) and weed seed (F=0.05%, R=0.10%, C=0.20%). Field standards add inseparable other kinds (F=none, R=1:2000, C= 1:1000).

Utah Sweetvetch: Remove germination line about 20%.

Misc

Camelina: Add field standards for inseparable other crop (F=none, R=0.05%, C=0.10%), decrease seed standard for weed seed C=0.05%.

Flax: Seed standards update weed seed (F=none, R=0.1%, C=0.2%) and other crop (F=0.05%, R=0.11%, C=0.22%).

Lewis, Prairie and Blue Flax: Decrease Registered weed seed to 0.10%.

Rocky Mountain Penstemon: Add inseparable other kinds: F none, R = 1:1000, C = 1:500.

Radish: Add to Field Standards to include restricted weeds: F none, R = none, C = 1:10,000 (B. nigra, B. juncea, S. arvensis, R. raphanistrum)

Turnip: Update other crop (F/R/C=0.01%) & weed seed (F=0.01%, R=0.02%, C=0.03%). Include that other crop standard (F=1/#, R=2/#, C=5/#. Add to Field Standards to include restricted weeds: F none, R = none, C = 1:10,000 (B. nigra, B. juncea, S. arvensis, R. raphanistrum)

Canola (oil): Seed Standards, weed seed reduce certified to 0.03%. Hybrid and oil both: Add to Field Standards to include restricted weeds: F none, R = none, C = 1:10,000 (B. nigra, B. juncea, S. arvensis, R. raphanistrum)

Safflower: Seed Standards, weed seeds R=0.02%, C=0.05%

Cereals

Buckwheat: Seed Standards reduce other crop (R=0.1%, C=0.20%).



Oregon Seed Certification Service
<http://seedcert.oregonstate.edu>

CERTIFICATION STANDARDS
PERENNIAL RYEGRASS
(Lolium perenne)
 Revised February 19, 2025

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 standards for certified perennial ryegrass.

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

Field History: Land must not have grown nor been seeded to these listed species and for the periods of time, as follows:

Previous crop	Time out required, in years		
	Foundation	Registered	Certified
Annual Ryegrass	0	0	0
Perennial Ryegrass	5	5	2
Intermediate Ryegrass	5	5	2
Festulolium 2x/4x	5	5	2
Festulolium 6x	0	0	0
Tall Fescue	0	0	0
Meadow Fescue	0	0	0

For Registered and Certified classes, these requirements are waived if the previous crop year of perennial ryegrass was of the same variety, same or higher class and passed certification field requirements for genetic purity. 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 ¹	Isolation Requirements ^{2,3}	
		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) Varieties: **Friend, Linn**

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 ⁴ , 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 ⁵ , maximum	0.15%	0.30%	0.50%
Weed seed, GROUP A ⁶ singly or combined	None	45/lb.	45/lb.
Germination, minimum	90%	90%	90%
Germination, minimum Linn	85%	85%	85%
Ploidy test, minimum ⁷	100%	99%	95%

¹ Includes off-type plants.

² This distance must be maintained from all ryegrass, meadow fescue and festulolium of the same ploidy. Isolation between diploids and tetraploids shall be no less than 15 feet. See Section IV, D in the OSCS Handbook.

³ Foundation and Registered fields of perennial ryegrass must be isolated 300 ft. from tall fescue and festulolium 6x. Border removal is allowed for fields over five acres. See Section IV, D in the OSCS Handbook.

⁴ See Section IX, D8 in the OSCS Handbook.

⁵ None of the prohibited weeds listed in Section V in the OSCS Handbook allowed in any class of seed.

⁶ GROUP A – buckhorn plantain, docks, sheep sorrel and *Galium* spp.

⁷ Ploidy Test: 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% total ryegrass minimum

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 ¹ , 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 ² , maximum	0.15%	0.30%	0.50%
Weed seed, GROUP A ³ singly or combined	None	45/lb.	45/lb.
Germination, minimum	90%	90%	90%
Germination, minimum – Alpha Centauri, BigLeague, Black Sparrow, Blackstone, Fastball 3GL, Flightline, Gray Hawk, Gray Wolf, Homerun LS, Rio Vista, Slugger 3GL, Stellar 4GL, Strike	90%	90%	85%
Germination, minimum – 1GSquared, Accent, Accent II, AllStar 3, Allstar Fore, Applaud II, Apple GL, Apple 3GL, Apple SGL, Aspire, Bandalore, Banfield, Black Cat II, Blazer 4, Bonneville, Brightstar SLT, Cabo II, Caddieshack II, Carly, Casper, Chaparral, Charger II, Citation III, Citation Fore, Confetti III, Cutter II, Dasher 3, Derby Xtreme, Deschutes, Double Time GLS, Edge II, Estelle, Fastball RGL, Fiesta 3, Fiesta 4, Fiesta Cinco, Frontier, Gator 3, Goalkeeper, Goalkeeper II, Grand Slam 2, Grandslam GLD, Gray Fox, GT24, Hancock, Harrier, Hawkeye 2, Helios, Home Run, Infusion, Integra II, iQ, Karma, Lightspeed, Metolius, Mightier, Mighty, Molalla, Monsieur, Mystique, Notable 2, Overdrive 5G, Pacific Gem, Passport, Pavilion, Penguin 2, Pennington APR2154, Pennington APR2237, Primary, Provocative, Replicator, Revenge GLX, Rinovo, Salinas, Salinas II, Sideways, Silver Dollar, Silver Sport, Silver Sun, Singular, Slugger, Soprano, Spyglass, SR 4650, SR 4660ST, SR 4700, SR 4750, Stamina, Stardust, Stellar GL, Stellar 3GL, Sunrise, Sunstreaker, T3, Tetradark, TetraGain, Tetrasport, Thrive, Top Gun, Top Gun II, Top Hat 2, Umpqua, Vintage, Wicked, Zoom, Zoom 2	85%	85%	85%
Ploidy test, minimum ⁴	100%	99%	95%

¹ See Section IX, D8 in the OSCS Handbook.

² None of the prohibited weeds listed in Section V in the OSCS Handbook allowed in any class of seed.

³ GROUP A – buckhorn plantain, docks, sheep sorrel and *Galium* spp.

⁴ Ploidy Test: 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.



Oregon Seed Certification Service
<http://seedcert.oregonstate.edu>

CERTIFICATION STANDARDS
ALFALFA
(Medicago sativa)
 Revised February 18, 2025

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 standards for certified alfalfa.

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

Field History: Land must be free from volunteer alfalfa before planting for at least 4 years to produce Foundation seed, for at least 3 years to produce Registered seed, and for at least 4 **2 years** to produce Certified seed. ~~At least two years must elapse between destruction of indistinguishable varieties or varieties of dissimilar adaptation and establishment of the stand for the production of the certified class of seed. Dissimilar adaptation will be determined as a difference of four or more fall dormancy values between that of the previous variety and the variety being planted. Fall dormancy values will be determined from descriptions prepared by the breeder for accepted varieties.~~ With Registered and Certified classes, the time interval between harvest and new planting must be one year if the previous crop year of alfalfa was the same variety, same or higher class, and passed field requirements for genetic purity. Alfalfa 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. For fields planted prior to January 1 the seedling application must be submitted within 60 days of planting. For fields planted between January 1 and July 1 the seedling application must be submitted within 15 days of planting. The 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			Isolation Requirements ¹	
	Other Varieties ²	Sweet Clover	Red Clover	Less than 5 acres	More than 5 acres
Foundation	0.10%	None	None	900 ft.	600 ft.
Registered	0.25%	10 plants/acre	None	450 ft.	300 ft.
Certified	1.00%	10 plants/acre	--	165 ft.	165 ft.
Only 10 ft. isolation is required between seed fields of different classes but of the same variety.					
No white top, leafy spurge, nor Russian knapweed allowed in any class of seed.					

Special Requirement: CUF101 limited to one harvest – must be same year as planting.

Seed Standards: (Minimum Sample Size – 1,000 grams)

Factor	Foundation (White tag)	Registered (Purple tag)	Certified (Blue tag)
Pure seed, minimum	99.00%	99.00%	99.00%
Other crops, maximum	0.10%	0.10%	0.25%
Sweet Clover, maximum	None	45/lb.	90/lb.
Inert matter, maximum	1.00%	1.00%	1.00%
Weed seed, ^{3,4} maximum	0.10%	0.20%	0.25%
Weed seed, GROUP A ⁵ , singly or combined	45/lb.	45/lb.	45/lb.
Germination, including hard seed	85%	85%	85%

¹ See Section IV, D in the OSCS Handbook

² Includes off-type plants.

³ The presence of Dodder is not allowed in any class of seed. See Section IX, D4 in the OSCS Handbook.

⁴ None of the prohibited weeds listed in Section V in the OSCS Handbook allowed in any class of seed.

⁵ GROUP A – buckhorn plantain, docks, sheep sorrel and *Galium* spp.

Cool Season Forage Grass Maturity Rating Protocol

Developed by the Forage Grass Maturity Working Group

Developers: Kim Cassida (Michigan State); Roeland Kapsenberg (Jethro Ag Services); S. Ray Smith (University of Kentucky); Jerry Hall (GO); Robin Lamp (Barenbrug USA); Jerome Magnuson (DLF); Trent Tate (GO); Devesh Singh (Wilbur Elis); Steve Reid (DLF); Krista Lea (University of Kentucky); Gabriel Roberts (University of Kentucky)

Cool-season grasses can exhibit considerable variation in heading date within a species, but there is no uniform rating system for producers to use when selecting varieties. Previous research has focused on maturity ratings within a single species like the regional orchardgrass maturity comparison by Robins et al. (2017) and the maturity rating system used by Olson et al. (2021) for the University of Kentucky variety testing program. The objective of this protocol was to develop a rating system that allows cool season grass varieties to be assigned into maturity groups relative to each other, similar to the alfalfa fall dormancy rating system (Tueber et al., 1998). The grass maturity rating system was developed using Kentucky bluegrass, orchardgrass, tall fescue, bromegrasses, annual ryegrass, hybrid ryegrass, perennial ryegrass, and timothy and is suitable for rating these species and other cool season grass species that mature within the same timeframe.

PLANT CULTURE

Greenhouse

Container Cell trays that facilitate good root development and ease for transplanting
 Media..... Topsoil or potting mix
 Temp/light 68 to 78°F; 16+ hour photoperiod
 No. of plants 25 to 40 per variety per replication, insure only one plant per cell
 No. reps 3 minimum
 Other..... Spray and fertilize as necessary

FIELD ESTABLISHMENT

Location..... When plants are approximately 8 to 10 weeks old (when plant can be pulled from tray and roots hold the plug together), transplant individual plants to the field (late August to early September in northeast and northcentral USA; late September to early October west coast and southern USA).

Suggested Spacing 1.5 ft between plants in a row and 2.5 ft row width as suggested by PVP and grass variety review board (adjust row spacing as needed based on weed control method between rows).

Replications minimum 3 reps and minimum of 15 plants per variety per replication

Culture..... Maintain vigorous growth, keep nursery as weed free as possible

FIELD MANAGEMENT

Clipping..... Plots may be clipped as needed one to two times during the fall to encourage tillering or reduce overwintering dead residue. Last clipping date based on local climate, no clipping in the spring.

Fertilization Based on plant requirements, essential that all plots be fertilized equally

Weed Control..... Maintain as weed free as possible through tilling, herbicides or other methods. Important to not use weed matting or mulch as this may influence soil temperature, light reflectance, etc... and therefore influence maturity date.

FIELD RATING

Dates..... Record heading dates as day of year (Jan. 1 is day one, Feb. 1 is day 32, etc...).

Maturity rating..... Assign heading date to individual plants within each plot as the first day when there are at least three fully emerged panicles per plant (ie.-fully emerged from the collar). Maturity date for the entire plot is recorded as the average heading date across all plants within plot. Important to take ratings at least three times per week to ensure precision of measurement.

Years Ratings should occur over two growing seasons including the first spring/early summer following fall transplanting (year 1) and the second spring/early summer after transplanting (year 2). Rating in the third growing season is not recommended because the research that developed these maturity groups was only based on year 1 and year 2 data.

GDD..... Growing degree days and soil temperature may be collected for future documentation.

CHECK VARIETIES USED TO ASSIGN GRASS MATURITY GROUP RATING

Grass Variety	Species
Balin	KY bluegrass
Benchmark Plus	Orchardgrass
Kora	Tall fescue
Bariane	Tall fescue
Barsprinter	Perennial ryegrass
Remington	Perennial ryegrass
Polim	Perennial ryegrass
Barpenta	Timothy

Not all cool season species have check varieties represented in the standard grass maturity test since many species/variety combinations did not show a consistent maturity ranking over locations and years. The table above shows the varieties that had consistent ranking over years and locations.

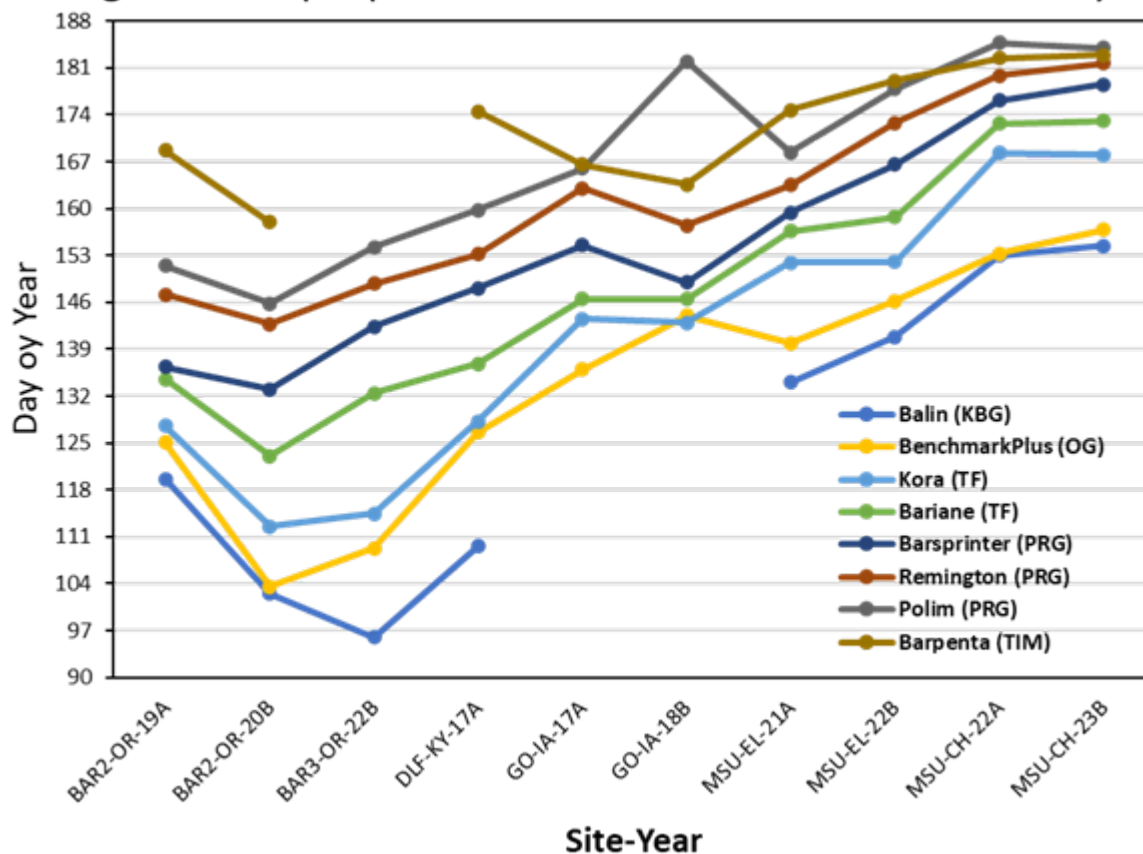
This single set of check varieties will be used to designated grass maturity groups (GMG) 1 to 9. These check varieties have been selected to differentiate the range of relative maturities for cool season grasses using data from an extensive multi-location trial (2015-2023) with 70 varieties from 8 species. The list below provides the criteria to make the actual maturity group assignment.

ASSIGNMENT OF MATURITY GROUP RATING

Maturity Group	Maturity Group Rating
1	earlier or equal to Balin
2	later than Balin and less than or equal to Benchmark Plus
3	later than Benchmark Plus and less than or equal to Kora
4	later than Kora and less than or equal to Bariane
5	later than Bariane and less than or equal to Barsprinter
6	later than Barsprinter and less than or equal to Remington
7	later than Remington and less than or equal to Polim
8	later than Polim and less than or equal to Barpenta
9	Later than Barpenta

Figure 1. Cool season grass maturity heading dates shown over test locations. These varieties showed consistent ranking over locations and years and were used to develop the list of designated check varieties. Heading date is based on days from January 1 and locations included Oregon (OR), Kentucky (KY), Iowa (IA), and Michigan (MSU).

Heading dates of proposed reference varieties across site-years



COMPARING TEST RESULTS OVER YEARS

Although cool season grass maturity is a strongly expressed trait, genotype by environment interactions do exist based on preliminary tests by Michigan State University. Accurate separation of varieties and assignment of grass maturity group ratings are best obtained by testing for two years at three locations. However, acceptable ratings can be obtained from a single location with year 1 and year 2 ratings for maturity, if the test is conducted at a site representative of the variety's area of adaptation.

REQUEST FOR SEED OF CHECK VARIETIES

The University of Kentucky will maintain and distribute seed of check varieties from 2024-2028. Upon written request, 10g of seed of each of the check varieties will be distributed to USA based seed companies and Universities. Send your request to both S. Ray Smith (raysmith1@uky.edu) and Gabriel Roberts (james.roberts@uky.edu). Include name, shipping address, email and phone with your request.

ROLE OF AFGC (America Forage and Grassland Council)

Promote the value and utilization of the Maturity Rating for cool season grasses.

LITERATURE CITED

Olson, G.L., S.R. Smith, C. Teutsch, J.C. Henning, and T.D. Phillips. 2021 Orchardgrass report. Univ. of KY Ag. Exp. Station. PR-801. <http://www2.ca.uky.edu/agcomm/pubs/PR/PR801/PR801.pdf>

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OSU Update**December 2025**

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

Crop and Soil Science

Personnel

- The Seed Crop Specialist position search committee is moving forward with 2 candidates coming to campus. Juliana Espindola on Tuesday, Dec. 16, and Brent Warneke on Wednesday, Dec. 17. Seminars (9:30am both days) are open to all stakeholders.
- Contact Navneet.Kaur@oregonstate.edu or Darrin.Walenta@oregonstate.edu for more information.

**Tuesday, Dec. 16 at 9:30am Crop Science Building or zoom
Extension Seed Specialist Seminar and Q&A-- Juliana Espindola**

Join Zoom Meeting

<https://oregonstate.zoom.us/j/98219373968?pwd=GiAKP97NsJF2aN9s8ipo7JwMAH5fG0.1>

Password: 061072

Phone Dial-In Information

+1 971 247 1195 US (Portland)

+1 253 215 8782 US (Tacoma)

+1 301 715 8592 US (Washington DC)

Meeting ID: 982 1937 3968

Join by Polycom/Cisco/Other Room System

98219373968@zoomcrc.com

**Wednesday, Dec 17 at 9:30am Crop Science Building or zoom
Extension Seed Specialist Seminar and Q&A-- Brent Warneke**

Join Zoom Meeting

<https://oregonstate.zoom.us/j/98219373968?pwd=GiAKP97NsJF2aN9s8ipo7JwMAH5fG0.1>

Password: 061072

Phone Dial-In Information

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+1 301 715 8592 US (Washington DC)

Meeting ID: 982 1937 3968

Join by Polycom/Cisco/Other Room System

98219373968@zoomcrc.com

Personnel-continued:

- Soil water quality extension position- Arshdeep Singh has accepted the offer. His start date is January 2, 2026.
- The department is in the process of screening applications for a soil physics tenure track teaching and research position. Closed Nov. 4th.
- The department is also screening applications for a Soil Pedology position. The position closed November 19th.

News

- Dec. 8-12 is OSU finals week and students will be on break until January 5th.
- CSS faculty will have their annual retreat Dec. 11+12
- Many offices at OSU will have reduced hours Dec. 22- Jan 5 to allow employees to take vacation and enjoy some down time.

Seed Services Update

December 10, 2025

- K31 TF Increase
 - A limited amount of Registered Kentucky 31 tall fescue seed was produced this fall by one grower. At least three other growers have planted Foundation K31, and the hope is there will be a lot of Registered K31 available by next fall.
- Gulf Annual ryegrass increase
 - One grower has purchased 100 lbs. of the Foundation Gulf seed with the plans to produce Registered Gulf by next fall.
- APD Test Update
 - Shaun Bushman, the USDA researcher from Utah is working on the annual/perennial discrimination test using a digital PCR test.
 - Shuan said that it can separate perennial ryegrass from Westerworld and Italian ryegrasses, it can pick up annual contaminants in perennial seed lots as low as 1-2%.
 - Summary is that some work still needs to be done to see how this test works with most perennial ryegrass varieties.
- Computer Seed ID
 - A Crop Science research group is training a neural network to identify different seed species. The work is supported by the Grass Commissions, an ODA Block grant and the College of Agricultural Science.
 - Future work will include training the NN for Kentucky bluegrass, ergot and inert material.

2025 Year in Review

Total Acres Certified of all Crops – 179,710 (-8.6%)

Total Acres of Grass Crops Certified – 141,603 (-7.9%)

Tall Fescue – 74,665 (-13.1%)

Perennial ryegrass – 26,053 (-1%)

K. Bluegrass – 8,541 (26.4%)

Annual ryegrass – 10,177 (1.5%)

Chewings fescue – 5,171 (-7.5%)

Total Acres of Small Grains Certified – 21,165 (-16.4%)

Wheat – 19,790 (-15.2%)

Barley – 480 (-48.4%)

Oat – 243 (-58.7%)

Triticale – 430 (151.5%)

Club wheat – 158 (-21%)

Red oat – 64 (-32.6%)

Total Acres of Legumes Certified – 7,008 (34.2%)

Red clover – 4,141 (18.3%)

Crimson clover – 1,018 (234.9%)

Field bean – 770 (100%)

Total Acres of Misc. Other Crops Certified – 9,934 (-19.3%)

Radish – 1,019 (-29.1%)

Hybrid Canola – 2,799 (-0.1%)

Total Acres of Potatoes Certified – 2,748 (-18.3%)

Total Acres of PVG Certified – 124 (-26.6%)

Total Acres of Corn – 2,142 (-34.6%)

Active Warehouses in 2025 - 189

Active Growers in 2025 – 554

Samples submitted in 2025 – 7,486

Updates

- John Zielinski retired
- Tami Brown has taken over John's Willamette Valley areas
- Jesse Benbow has expanded his Willamette Valley areas to take over some of Tami's old area



Andrew Altishin

Oregon Seed Certification Service

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OSCS Staffing

- 3 Administrative staff
- 2 Information Technology Staff
- 5 Seed Certification Specialists
- 3 Part-time/seasonal Seed Certification Specialists
- 6 Seed Certification Samplers
- 3 Seasonal corn inspectors
- 1 Manager and Seed Certification Specialist
- Various part-time student employees (office and potato greenhouse)

Seed Lab

December 10, 2025

Oregon State Seed Lab

- Sample numbers behind last year by 277 samples.
- We have drop boxes in a few places?
 - DLF Red Bridge location
 - Linn County Extension Office
 - Burlingham Seeds
 - Berger Seeds out of CarltonThese have generated enough samples to be cost-effective
- Staffing has been finalized for the coming year.
 - Pre-picking will be done by students.
 - New Mixing Room Coordinator.
 - Cross-training on grading, weighing, mixing, etc., accomplished.

These arrangements have been working well.

Other items:

- Fluorescence referee in support of Rule change proposal. The objective is to clarify the Rules regarding this method. Testing filter paper vs. blotters and tap water vs. distilled water vs. KNO₃.
- PCR test to determine annuality. Recent meetings with the developer have been very positive. New digital equipment is much more accurate; however, start-up costs will be near \$100K with annual maintenance fees.
- RAD test. There is continued discussion across the entire network regarding validation of the test.
 - Annuallity is part of the variety description.
 - VFL
 - Grow outs

Any test of annuality must refer back to the variety description in order to be valid.

Grass and Legume Advisory Committee Update

December 10, 2025



**OREGON
DEPARTMENT OF
AGRICULTURE**

Seed Regulatory Program Updates

Slow Pay/No Pay Update

- Eleven (11) Notices of Payment demand were issued to one seed company who had paid growers less than they were owed for 2024 crop tall fescue. Contested case hearings were scheduled for early December. In November, the company paid growers the outstanding amounts and withdrew their requests for contested case hearings.

Process for Submitting a Slow Pay/No Pay Complaint

- **Prior to filing a complaint with the department:**
 - A producer or grower must send notice to the dealer of the amount owed as required by OAR 603-047-200(1).
 - Contact the department to discuss the details of the complaint. The department will make an initial determination about the merits of the complaint and determine if a formal complaint should be submitted.
- **Filing a complaint:**
 - Fill out the Slow Pay/No Pay complaint form completely.
 - Provide any additional relevant documentation – this may include contracts, purchase orders, bills of lading, test reports, invoices, payments received, etc.
 - A payment of \$50 is due at the time the complaint form is submitted, as required by OAR 603-047-0200, ORS 576.738(5).
- **Process Timeline**
 - Grower submits complaint form, relevant documents, and \$50 fee.
 - Records are reviewed by the department.
 - Records request sent to Dealer – Dealer has 14 days to comply with request.
 - Records are reviewed by the department.
 - Follow up requests may occur – to grower and/or dealer as needed.
 - Department makes determination.
 - Letter is sent to grower about determination.

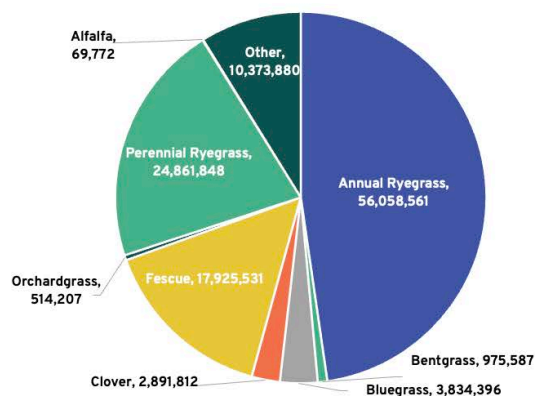
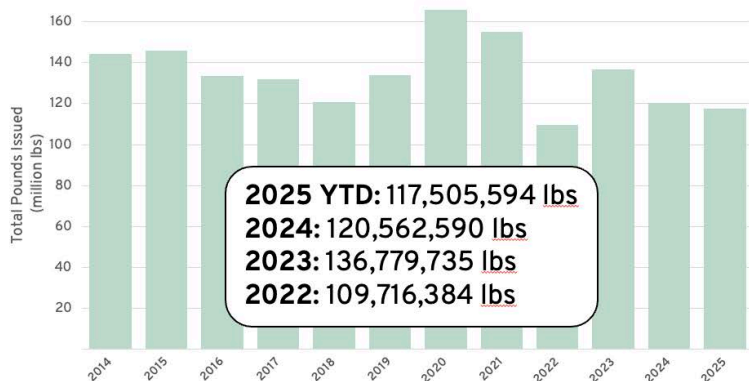
- If determined that payment is due, grower pays a fee of \$150 as required by OAR 603-047-0200, ORS 576.738(5) prior to issuance of notice.
- Payment notice issued to Dealer, requiring payment within 30 days of notice.
 - Dealer has 30 days to pay amount due plus 1% per month simple interest from the original payment due date (OAR 603-047-0200(4)).
 - Dealer has 60 days to contest (OAR 603-047-0400(1)(e)).
 - If Dealer does not pay, ODA shall suspend their license (ORS 576.738(3)).
 - If Dealer contests, case is referred the Office of Administrative Hearings for determination.
- Contested cases are referring to an Administrative Law Judge (ALJ) for a hearing where the ALJ will make a determination based on the facts of the case.

Seed Regulatory Program Update

Export Statistics

- Please see attached Seed Export statistics and Hay/Straw Export Statistics

Seed Export Statistics



Total Pounds of Seed Exported - Based on Phytosanitary Certificates Issued by the Oregon Department of Agriculture

January to September comparisons for previous years:

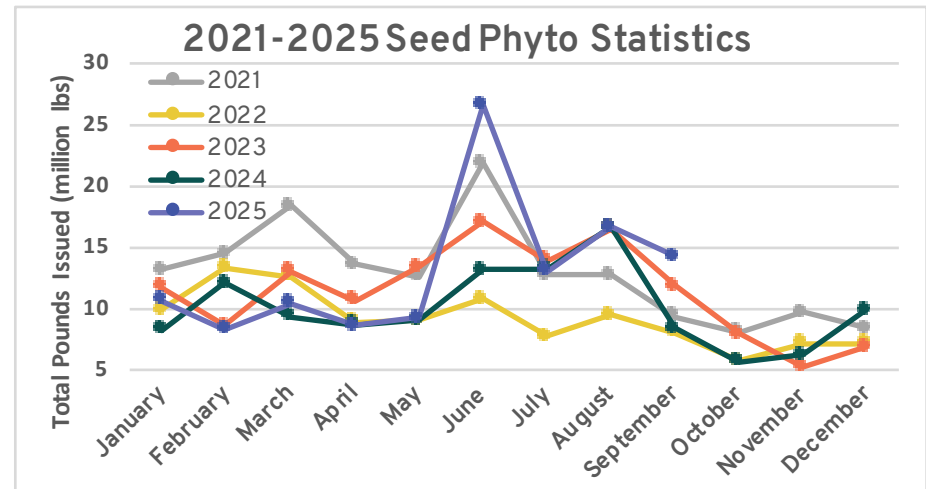
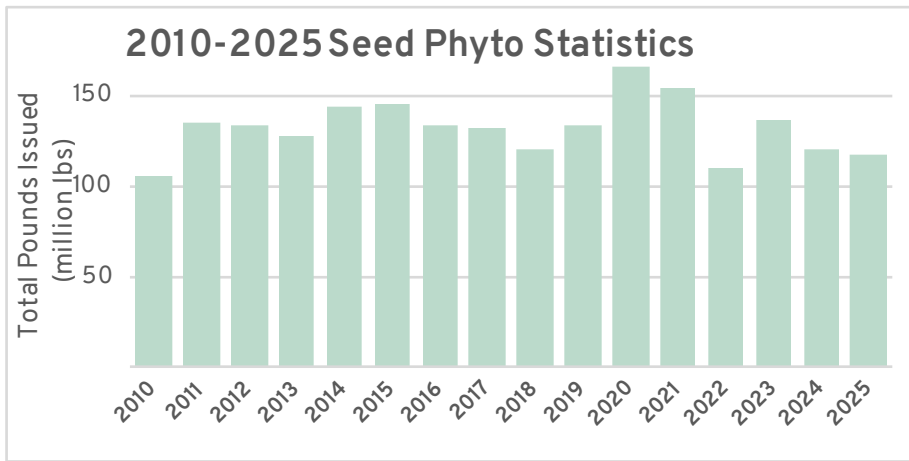
- 2021: 128,822,114 lbs
- 2022: 89,644,684 lbs
- 2023: 116,797,858 lbs
- 2024: 98,835,694 lbs



Seed Phytosanitary Certificates Summary Data - By Month and Year (pounds)

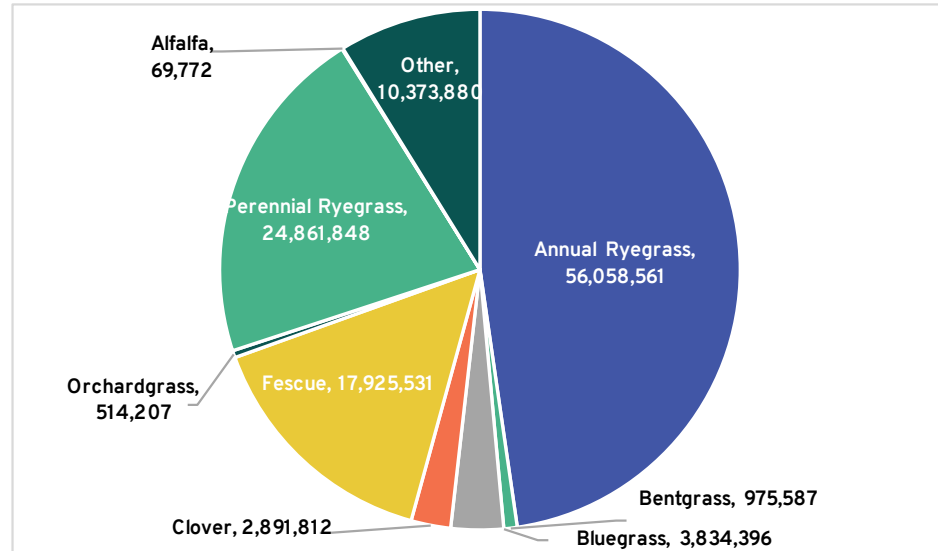
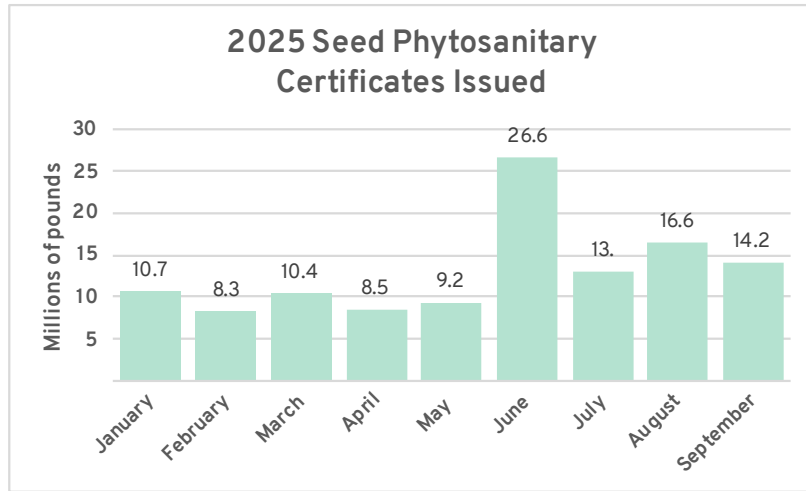
	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS
2009	6,943,769	9,146,212	4,650,232	3,948,935	3,805,521	7,108,558	5,562,247	6,350,347	3,081,679	4,069,966	6,865,900	9,034,488	70,567,854
2010	9,892,983	12,073,939	7,059,612	8,507,988	9,767,843	8,093,539	7,392,918	10,661,252	10,141,460	6,044,373	7,054,854	8,962,288	105,653,049
2011	12,871,103	17,817,187	15,314,916	10,698,778	6,730,506	10,766,203	9,186,704	12,674,719	8,104,300	9,160,109	9,575,960	12,826,858	135,727,343
2012	12,432,275	19,069,854	12,770,195	11,443,386	12,804,475	8,416,595	7,583,057	11,783,582	8,684,430	5,937,222	9,920,305	13,210,445	134,055,821
2013	11,302,240	14,854,795	7,975,859	8,285,587	10,870,276	8,791,361	12,210,267	11,628,591	8,432,416	9,602,159	8,171,143	15,056,695	127,181,389
2014	14,360,278	17,167,086	15,072,400	10,564,872	10,679,686	13,103,991	12,147,360	15,520,909	7,954,975	7,857,133	8,222,512	11,490,409	144,141,611
2015	11,070,922	9,922,858	14,159,177	15,839,551	15,325,975	8,852,314	19,932,767	11,623,747	9,779,375	10,234,152	9,784,739	9,563,410	146,088,987
2016	10,409,453	11,036,866	9,051,334	10,836,992	12,659,318	15,158,889	14,536,366	12,930,361	7,625,186	7,632,429	7,306,971	14,482,072	133,666,237
2017	14,024,647	11,767,232	12,889,771	6,967,757	9,099,129	12,334,602	11,688,142	19,495,269	10,202,964	5,584,921	7,231,746	10,667,294	131,953,474
2018	9,126,464	13,466,635	14,649,303	9,559,715	6,046,591	8,319,327	11,399,196	16,639,474	7,482,024	6,620,886	8,442,573	9,180,012	120,932,200
2019	10,141,086	11,928,706	10,246,107	9,502,400	9,895,020	11,451,146	18,105,578	18,243,496	8,118,403	7,305,990	6,405,657	12,508,972	133,852,561
2020	15,783,097	11,891,123	9,106,583	15,259,570	14,132,478	22,415,278	14,828,147	14,593,765	9,308,287	11,637,682	12,227,940	14,807,154	165,991,104
2021	13,175,534	14,405,201	18,402,166	13,547,006	12,551,580	21,899,084	12,763,842	12,721,253	9,356,448	8,029,331	9,647,761	8,380,668	154,879,874
2022	9,891,500	13,304,113	12,601,320	8,883,034	8,996,541	10,799,432	7,717,855	9,444,982	8,005,907	5,752,372	7,152,029	7,167,299	109,716,384
2023	11,717,345	8,623,231	13,083,692	10,656,423	13,389,439	17,114,837	13,867,278	16,528,761	11,816,852	7,883,730	5,228,661	6,869,486	136,779,735
2024	8,265,700	12,078,297	9,314,458	8,723,092	9,054,131	13,111,701	13,277,139	16,665,860	8,345,316	5,614,035	6,230,953	9,881,908	120,562,590
2025	10,670,620	8,262,451	10,391,772	8,539,707	9,233,946	26,623,065	12,985,422	16,603,674	14,194,937				117,505,594

Grey highlights represent bienniums



Seed Phytosanitary Certificates Issued 2025 (pounds) - By Seed Kind

Month	Annual Ryegrass	Bentgrass	Bluegrass	Clover	Fescue	Orchardgrass	Perennial Ryegrass	Alfalfa	Timothy	Other	Total Pounds
January	3,139,295	320,721	1,029,999	1,113,743	1,927,137	2,006	1,469,397			1,668,322	10,670,620
February	2,561,002	82,282	1,032,227	443,726	2,031,379	53,699	1,209,172	1,203		847,761	8,262,451
March	3,304,230	157,301	384,725	222,345	2,538,915	80,471	1,576,522	35,274		2,091,989	10,391,772
April	3,541,379	165,988	252,980	478,584	1,498,893	47,652	1,859,392	551		694,288	8,539,707
May	4,658,741	39,312	208,838	24,110	1,191,046	101,071	2,764,290	16,900		229,638	9,233,946
June	15,145,066	142,851	237,147	67,354	2,994,913	111,858	6,631,850			1,292,026	26,623,065
July	7,246,689	14,135	112,503	11,000	1,191,756	62,494	3,756,255			590,590	12,985,422
August	8,892,593	8,204	295,210	84,276	2,041,924	3,003	3,455,063			1,823,401	16,603,674
September	7,569,566	44,793	280,767	446,674	2,509,568	51,953	2,139,907	15,844		1,135,865	14,194,937
October											
November											
December											
Totals	56,058,561	975,587	3,834,396	2,891,812	17,925,531	514,207	24,861,848	69,772		10,373,880	117,505,594



Appendix 16

Seed Phytosanitary Certificates Summary Data - By Destination (pounds)

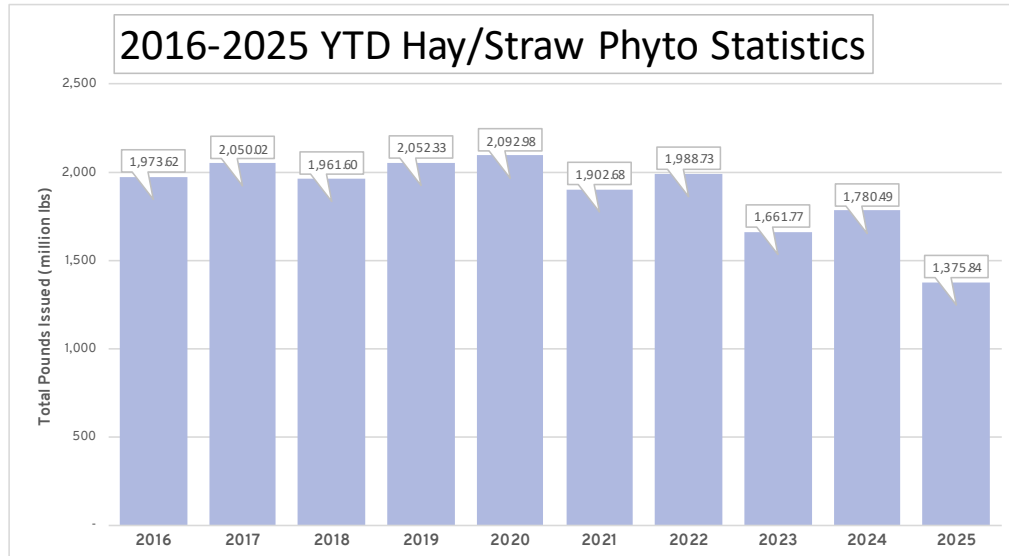
Country	2020	2021	2022	2023	2024	2025
Argentina	1,526,066	1,029,894	2,196,487	2,729,644	2,256,730	891,102
Australia	12,078,448	7,408,812	7,026,039	4,407,270	4,353,911	2,628,844
Canada	1,517,976	1,646,065	1,473,843	1,797,173	1,226,948	1,290,323
Central & South America	5,300,787	4,493,738	3,208,090	4,027,857	3,225,634	3,976,154
Chile	3,461,738	5,497,900	2,526,737	2,363,981	1,973,466	1,733,738
China	65,974,655	64,984,816	33,701,586	59,047,962	46,238,879	41,977,245
Colombia	2,401,193	2,971,770	2,358,324	2,049,098	2,323,338	1,466,619
Europe	38,113,256	29,315,312	19,771,807	25,352,631	24,290,144	28,745,656
Japan	3,557,995	3,761,680	4,455,937	4,395,761	5,019,475	4,255,963
Korea, Republic of	19,115,833	20,445,050	19,584,645	17,569,147	17,603,849	18,468,890
Mexico	3,288,367	3,073,263	2,674,042	1,896,891	3,036,339	3,369,749
New Zealand	523,117	792,510	1,275,147	509,328	239,249	359,669
Other	6,710,669	6,165,859	6,196,976	6,177,341	8,143,676	5,541,175
Other Asia	2,397,980	3,263,445	3,219,441	4,450,844	476,817	2,131,804
South Africa						663,262
United States	23,024	29,762	47,283	4,807	154,135	5,401
Totals	165,991,104	154,879,876	109,716,384	136,779,735	120,562,590	117,505,594

Data reflects total pounds of seed exported based on phytosanitary certificates issued by the department.

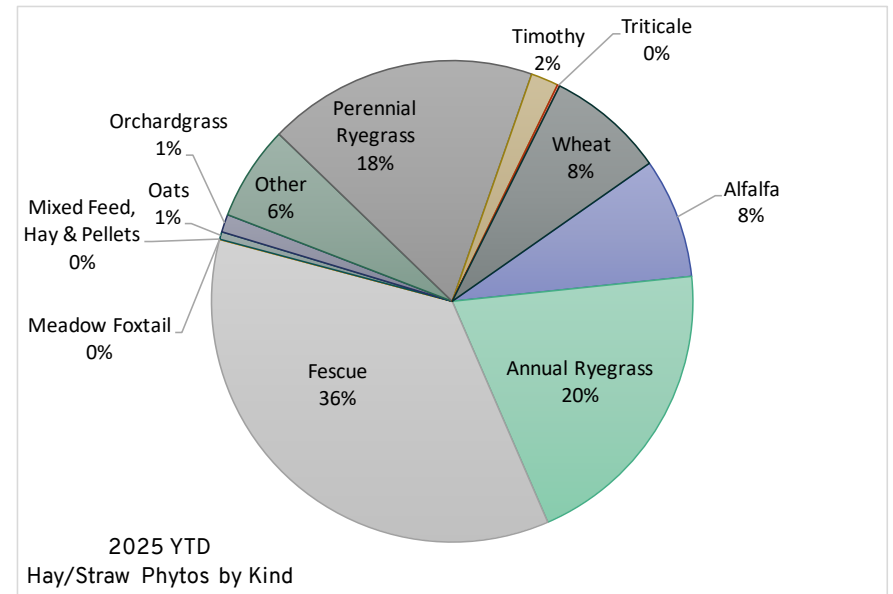
2025 Data through September 2025

Hay/Straw Phytosanitary Certificates Summary Data - By Kind and Year (Millions of Pounds)

	Annual		Meadow	Mixed Feed,	Perennial				TOTALS				
	Alfalfa	Ryegrass	Fescue	Foxtail	Hay & Pellets	Oats	Orchardgrass	Other		Ryegrass	Timothy	Triticale	Wheat
2015	149.01	243.69	525.73	-	-	0.30	40.49	196.59	368.78	33.57	-	80.17	1,638.33
2016	220.43	245.81	538.87	0.20	-	-	35.14	291.38	472.88	39.51	-	129.40	1,973.62
2017	228.16	311.11	709.79	-	-	-	62.20	161.77	391.48	34.60	-	150.90	2,050.02
2018	259.50	228.42	515.41	0.26	364.63	4.81	39.87	15.89	320.07	28.62	0.90	183.21	1,961.60
2019	149.01	313.86	545.85	0.81	450.98	11.38	40.12	15.81	324.17	30.48	2.18	167.69	2,052.33
2020	267.18	277.75	456.57	1.72	572.90	12.26	34.73	15.62	288.83	38.55	0.26	126.62	2,092.98
2021	242.52	265.75	481.54	1.54	450.82	16.32	31.14	21.08	259.66	34.64	4.03	93.65	1,902.68
2022	157.94	340.96	635.85	1.39	365.11	9.22	33.90	8.87	266.42	26.71	1.90	140.47	1,988.73
2023	118.91	281.28	620.76	2.68	244.02	9.38	24.49	5.90	229.25	20.82	2.66	101.62	1,661.77
2024	135.96	352.40	676.87	0.56	155.31	10.33	25.70	6.78	280.24	19.27	2.67	114.40	1,780.49
2025	111.02	277.28	490.25	0.26	-	7.05	16.46	87.54	249.53	25.45	2.18	108.83	1,375.84



Data through September 2025



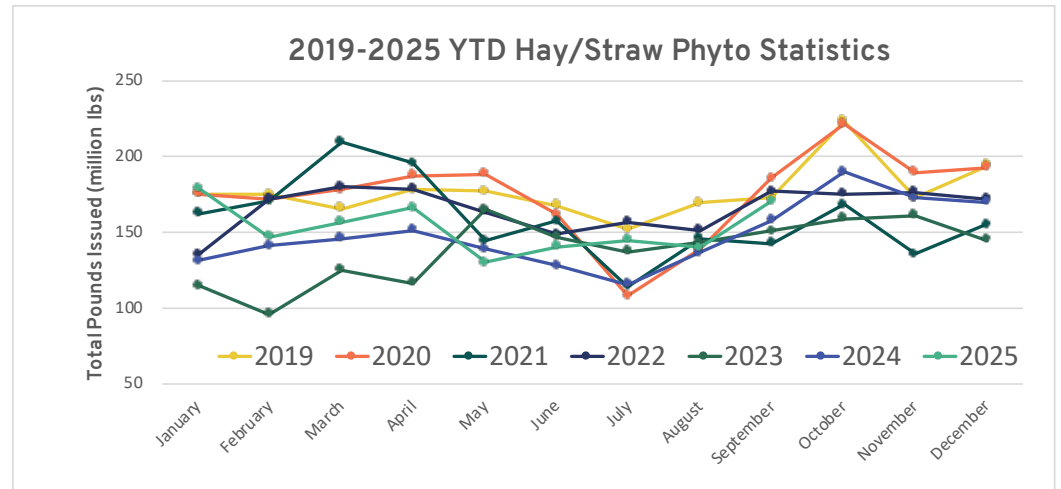
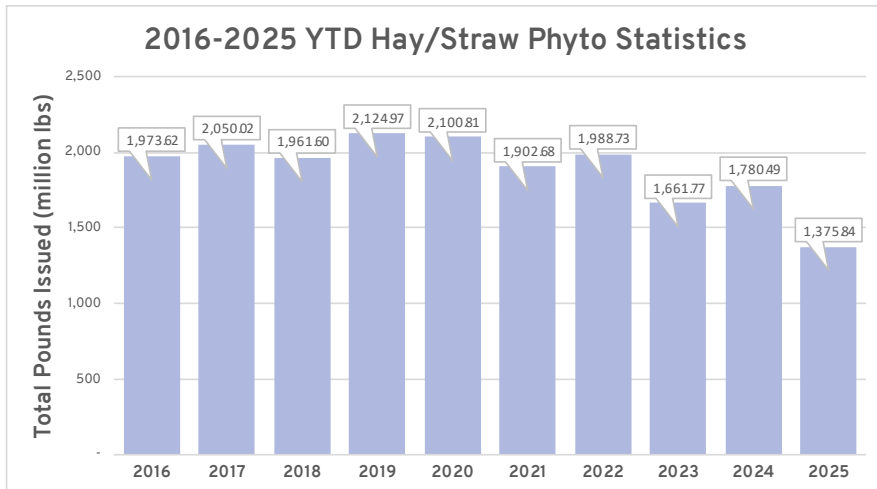
Hay/Straw Phytosanitary Certificates Summary Data - By Country and Kind (Millions of Pounds)													
2025													TOTALS
	Alfalfa	Annual Ryegrass	Fescue	Meadow Foxtail	Mixed Feed, Hay & Pellets	Oats	Orchard grass	Other	Perennial Ryegrass	Timothy	Triticale	Wheat	
Canada	0.60	0.83	-	-	-	-	-	0.29	0.17	0.77	-	1,394.02	1,396.67
China	485.83	-	0.05	-	0.04	-	-	-	-	1.30	-	-	487.23
Japan	708.86	625.93	1,172.58	3.06	3.81	4.70	135.16	16.02	-	271.17	-	3.06	5,683.55
Other	6.90	-	0.00	-	-	0.00	14.17	0.69	0.11	6.94	-	0.05	28.86
Other Asia	150.93	0.31	1.84	-	5.02	1.94	1.25	45.50	12.39	3.15	16.77	2.75	241.86
Korea	758.98	2,510.95	5,022.97	6.35	2,594.88	74.41	233.56	763.87	696.40	48.89	-	-	12,711.25
EU	0.08	0.28	0.05	-	-	-	0.11	0.85	0.14	-	-	-	1.50
TOTALS	2,112.17	3,138.30	6,197.49	9.41	2,603.76	81.05	384.24	827.22	709.20	332.23	16.77	1,399.88	20,551

Data through September 2025

Hay/Straw Phytosanitary Certificates Summary Data - By Country and Year (Millions of Pounds)

Volume												TOTALS
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Canada	81.1	129.4	150.0	181.5	167.7	126.6	93.6	140.4	102.0	115.0	109.3	1396.7
China	26.9	40.0	54.3	46.7	26.8	54.3	67.1	52.2	31.8	45.5	41.8	487.2
Japan	521.1	583.8	588.1	565.7	583.7	540.3	516.7	519.0	438.1	464.9	362.1	5683.6
Other	3.7	2.3	4.1	8.1	8.8	0.6	1.2			0.1		28.9
Other Asia	13.9	28.2	22.3	33.7	29.9	15.8	28.3	22.1	22.7	14.3	10.6	241.9
Korea	991.2	1189.6	1230.6	1125.9	1308.1	1355.4	1195.8	1255.0	1067.0	1140.7	852.0	12711.3
EU	0.4	0.3	0.7		0.0					0.0	0.1	1.5
Mexico									0.1			0.1
TOTALS	1638.3	1973.6	2050	1961.6	2125	2093.0	1902.7	1988.7	1661.8	1780.5	1375.8	20551.0

Hay/Straw Phytosanitary Certificates Summary Data - By Month and Year (Millions of Pounds)													
	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS
2015	111.65	95.93	154.33	158.34	143.68	124.31	108.57	119.59	136.12	152.64	160.00	173.18	1,638.33
2016	143.55	163.46	163.18	129.07	142.06	155.11	140.89	175.86	188.59	192.66	189.61	189.58	1,973.62
2017	162.27	168.47	209.35	167.34	179.38	166.75	102.92	184.94	169.01	203.70	173.71	162.18	2,050.02
2018	167.30	155.89	162.30	134.15	166.37	141.07	122.76	164.83	165.57	213.72	196.81	170.83	1,961.60
2019	175.64	175.20	165.88	178.50	176.96	168.00	152.17	169.67	172.85	223.41	172.60	194.11	2,124.97
2020	175.48	171.84	178.30	187.42	188.73	161.61	108.22	139.02	185.82	221.67	189.68	193.02	2,100.81
2021	162.14	170.79	209.71	195.96	144.22	157.26	114.11	145.98	142.87	168.55	135.92	155.17	1,902.68
2022	135.20	172.18	180.33	178.91	163.68	148.78	156.99	151.26	177.21	175.57	176.63	171.99	1,988.73
2023	114.79	95.79	125.06	116.79	165.38	147.08	137.22	143.48	150.87	159.01	161.16	145.13	1,661.77
2024	131.27	141.38	146.08	151.29	139.17	128.08	115.42	136.63	158.18	190.12	172.89	169.99	1,780.49
2025	179.52	147.23	156.79	166.01	130.48	140.46	144.97	140.05	170.33				1,375.84



Data through September 2025