Seed Certification, Foundation Seed & Plant Materials Board
2021 Meeting Minutes
Tuesday February 16th, 2021 via ZOOM

Board Members and Guests present: *Dean Alan Sams; Joyce Loper; Sagar Sathuvalli; Jeremiah Dung; Bob Zemetra; Ken Frost; Andy Hulting; Jennifer Kling; Ryan Graebner; Kurt Farris; Brian Parker; Scott Setniker; Matt Cyrus; Warren Dole; Phill Lindgren; Elizabeth Savory; Tom Chastain; Bill Braunworth; Dan Curry; Andy Altishin; Dave Stimpson; Alex Albion; Mary Beuthin; Tami Brown; Terry Burr; Rachel Hankins; Jodi Keeling; Jeff McMorran; Cindy Middlebrooks; John Zielinski.*

Welcome & Introductions
Dan Curry called the meeting to order at 1pm. He welcomed the group and invited everyone to introduce themselves. The secretary confirmed that the quorum was met (17 of 20 voting members were present), and official business would be conducted.

Approval of 2021 Agenda
It was moved and seconded to approve the 2021 meeting agenda as written. All in favor.

Approval of 2020 Minutes
Members moved and seconded to approve the 2020 meeting minutes as written. All in favor.

OSU College of Agricultural Sciences report
Dean Sams warmly greeted the group and thanked everyone for their hard work and dedication to the Oregon seed industry. He provided a few updates from the college relevant to Seed Services.
New Faculty updates:
- Francisco Calderon started at CBARC in Pendleton at the beginning of the year; he has brought USDA perspective and expertise to the station.
- Search underway at the North Willamette Research and Extension Center in Aurora
- Search underway for Associate Dean for Research in light of Dr. Loper's pending retirement.
- The Oregon IPM Center Director search is in early recruitment stages.
- A search for Vice Provost of Extension and Engagement is also in early stages.

General College updates:
- College has a strategic planning process underway, with themes outlining the direction of college activities including seed services and certification.
- 2021 was a good year for the college 23-24% increase in grants and contracts for research and extension with regard to grants and funding
- The first National Hemp Symposium was held last week by the OSU Global Hemp Innovation Center in conjunction with National Academy of Sciences, Engineering and Medicine. Themes included new commodity creation, total plant rather than just focused on one feature. The event was part of a week-long series of events and meetings held by the GHIC to strengthen faculty and industry connections, and to make best use of the federal appropriation provided by the Oregon state senate.

OSU Extension Service report
There was no report given this year.

OSU Department of Crop and Soil Science report

Dr. Chastain provided the group with an update on activities and news from the Department.
For background -- Crops faculty and staff engage in the four missions of the college: teaching, research, Extension, and service. The on-campus service group is comprised of the OSU Seed Lab, Oregon Seed Certification Service, and the Soil Health Lab.
Recent personnel changes:

- Dr. Abigail Tomasek has joined the department as Assistant Professor in Soil Water quality delivering extension programming and research across the state.
- Dr. Julie Pettridge has been honored with a two-year temporary rotating directorship with the National Science Foundation.
- Kristin Macadow has been hired as manager of the Department Soil Health Lab. The lab is considered among the best in the country.
- The search continues for an OSU Extension Organic Pasture and Forages Assistant Professor of Practice; it is a statewide position, based in Corvallis.

General news items:

- Three faculty members were recently elected fellows and several faculty will be honored at the upcoming College of Agriculture annual faculty recognition awards for excellence.
- The Cereals Lab and Bakery Project is moving forward. Funding from a variety of sources have supplied
- Student resource center is also underway.
- Finally, Dr. Chastain commended the Department faculty and staff on the successful adaptation of teaching and services during the COVID-19 emergency, and thanked everyone for their efforts to keep things running as seamlessly as possible.

OSU Horticulture Department report

Dr. Braunworth highlighted current activities from the Horticulture Department.
General updates:

- Undergraduate enrollment continues to be strong, even up from last year, despite all classes being moved to remote delivery. Research has continued, although more slowly, during the pandemic.
- Extension volunteer programs including Master Melittologist and Master Gardeners all have waiting lists to get in.
- The Department has a popular podcast called *Polliation* which has 200 episodes and over a quarter of a million downloads; topics vary but broadly relate to pollinators of all kinds.
- A short online course related to vegetables offered by OSU Master Gardeners had 40,000 participants in 2020. Other horticulture based non-credit courses continue to be offered remotely by Extension.
- Extension personnel have been involved with COVID-19 coping strategies, including the distribution of masks to critical workers.
- New tomato, pea, and mild habanero pepper varieties, a blight-resistant hazelnut variety, and mint with improved oil and verticillium wilt resistance are all coming soon.

- Active hemp and potato plant genomic sequencing programming is underway.
- Entomology is working with a new non-toxic product designed for spotted-wing drosophila control in fruits and will soon be available in the Organic market.
- The Bee Atlas effort involves identifying and documenting bee species around the state. As data is developed it can be important to endangered bee species research. Many volunteers participate in the program.
- Low input management techniques for turf management involving irrigation, fertilizer and disease management have resulted in reduced pesticide use.
- The OSU greenhouses are in transition, putting pressure on several departments to relocate or give up valuable space. He thanked Dr. Loper for her hard work in the planning efforts.

New faculty:

- The Department has recently hired Dr. Chris Adams, Entomologist and Kelsey Galimba, Horticulturist, both at Hood River Mid-Columbia Research and Extension Center; Danny Lytle, IR-4 registration of products for special crops at NWREC; Erica Chernoh, Lane County Extension Specialist in commercial horticulture; and Tim Warren working with insect migration and biological data science.
- Horticulture is looking to fill a Berry Extension Specialist position following retirement of Bernadine Strict, along with a Biotechnology position, and a few Community Horticulture program roles in the coming year.

Potato Advisory Committee report and recommendations

Jeff McMorran led the group through two potato standards changes recommended by the PAC.

1) Remove reference to any potato varieties being considered 'Latent' to PVY in the Standards

This change would not change any wording in the Standards that relates to Latent Virus Testing. It only applies to sections of the Standards that refer to how any specific varieties considered latent to PVY should be treated. Many, if not most, varieties are latent to one or another strain. Changes apply as follows:

Part XIII. Table 6

Table 6 - Tolerances - Latent Virus Testing

		Generation						
		N	FY1	FY2	FY3	FY4-5	FY6	
Latent Virus								
PVX	0.0	0.0	1.00	3.00	6.00	6.00		
PVY	0.0	0.0	0.10	0.20	1.00	2.00		
PLRV		0.0	0.0	0.10	0.20	1.00	2.00	
Sampling Frequency *b* (Plants/acre)			*c	25%	500	50	20	20

Footnotes

a Latent virus testing is only required at Nuclear class (i.e. greenhouse produced material) for all varieties. ~~It is also required for varieties latent for PVY or PLRV, and those of unknown symptom expression to PVY, at the FY1 and FY2 class.~~ Latent virus testing of field-produced classes beyond FY1 class (FY2-FY6) is only used to assign a sub-class and not to downgrade a lot. See XIII. LATENT VIRUS TESTING, page **Error! Bookmark not defined.**, for additional details).

b Minimum number of plants to be sampled is 100. Maximum sample is 400 leaves per field.

c See page 12 "Sampling Requirements" for information of number of plants to be sampled.

Section B: Latent PVY Testing (for asymptomatic varieties): REMOVED

Part XIV. Section G

Winter Greenhouse Test Tolerance (percent visible symptoms): WGO readings are used solely as a basis for determining a seed lot's eligibility for re-certification, and no longer used for downgrading of lots. The final class of the lot (other than rejection for 'zero tolerance' factors) will be based on the final field inspection. Potato varieties showing no or little visual symptom expression when infected by PVY ~~(i.e. asymptomatic or 'latent' varieties)~~ may be serologically tested during the winter.

2) Moving the cut-off date for delivery of Winter Grow-Out samples to the Greenhouse from Jan 2 to December 1

It was moved and seconded to accept these changes to the potato standards and program as proposed. All in favor.

Grass and Legume Advisory Committee report and recommendations

Brian Parker provided the report and recommended action items forwarded from the GLAC meeting.

1) Acceptance of new Hybrid Alfalfa Standards

This new standard is copied directly from the AOSCA standard already in place. Brian noted that hybrid seed may not be used for further seed production. See attachment 1.

2) Update Radish Standards increasing the minimum submitted sample size

The update changes the sample size requirement from ½ pound to one full pound to accommodate the testing needs of the seed lab.

3) Add newest accepted species to the Wheatgrass standard

The addition is made to reflect changes in current taxonomy of the species. *Elymus sp., Elytrigia sp.,*

Pascopyrum sp., Pseudoroegneria sp., and Thinopyrum sp. would be added.
It was moved and seconded to accept items 1-3 as put forward. No discussion. All in favor.

4) Update footnote 2 of Colonial, Creeping, Idaho, Redtop, PennCross and Velvet bentgrass standards to reference variety instead of species, then the other species where isolation is required

This clarification was made to reduce confusion between variety and species. The change clarifies existing verbiage as follows, in the example of Colonial bentgrass:
"This distance must be maintained between all other varieties ~~such as Colonial, Creeping, and Velvet Bentgrass~~, of Colonial bentgrass as well as other types of bentgrass, such as Creeping and Velvet. For additional…".

5) Update Creeping bentgrass standard removing Penneagle II and adding PC2.0 and Pure Eclipse

This edit was made per contractor request. Since there has been a history of allowing this standard to include variety names, the committee honored the request.

6) Remove definition for "other bentgrass species" test from the Handbook, IX, Section D, 9 (Pg 13)

The committee voted to remove the reference to this test from the OSCS Handbook to prevent confusion since it is not a certification requirement.
It was moved and seconded to accept items 4-6 as put forward. No discussion. All in favor.

7) Update the Handbook page 10, VI, C 1

The intention of this update is to adopt additional wording to more clearly state that a weed found from either list would disqualify a lot from certification.
Current phrasing:
"Lots showing Oregon prohibited weeds must be reconditioned before being resampled or blended."
Proposed phrasing:
"Lots showing prohibited contaminants listed on Section V. Weeds Prohibited in All Oregon Certified Seeds list and/or species listed in the individual crop standards need to be reconditioned before being re-sampled or blended."
It was moved and seconded to accept item 7 as proposed. All in favor.

8) Update the Handbook page 10, VI, F. 1

This update would make additional types of weed exams used in Interagency Certification acceptable to the OSCS program for purposes of re-bagging or being used in Oregon Certified mixtures or blends. Some areas of the country, or even out other countries, use different tests that are equivalent but not explicitly acceptable, necessitating re-testing upon application to the program.
Current Handbook phrasing:
"Seed that is re-bagged, blended, or put into a mixture of certified seed for Oregon Interagency Certification must have an all-states noxious weed seed examination in addition to meeting either, another state's or Oregon's certification field and seed standards, prior to approval,"
Proposed phrasing:
"Seed that is re-bagged, blended or put into a mixture of certified seed for Oregon Interagency must have either an all-states noxious weed seed examination, a Continental US Noxious Weed Exam, a

crop and weed exam, or an ISTA Complete Other Seed Determination. Kentucky bluegrass must have at least 10 grams tested. The seed must also meet either another state's, country's, or Oregon's certification field and seed standards, prior to approval."

Discussion:

Concerns arose that there may be a loosening of Oregon's standards by making tests from other places, where standards may be lower, eligible for Oregon tags. Certification spent a lot of time evaluating the Continental US Noxious Weed Exam and ISTA Complete Other Seed Determination, and determined that they may offer more information than currently acceptable AOSCA All States Noxious and OECD Certified Crop and Weed exams. Someone asked about the volume of work that reviewing eligibility for these entails, and it is not insignificant. Not only does this change help streamline the process for OSCS office staff, but it is a money-saving service that can be provided by expanding to allow these tests to provide the same information.

The addition of "country's" to the final sentence is not new in practice as OSCS has been accepting OECD certified lots all along. It was suggested to take the last sentence back to committee to review in further detail, to clarify the intention.

During discussion, it was suggested to phrase the update this way:

"Seed that is re-bagged, blended or put into a mixture of certified seed for Oregon Interagency must have either an all-states noxious weed seed examination, a Continental US noxious weed exam, a crop and weed exam, or an ISTA Complete Other Seed Determination; in addition, the seed must also meet either another state's, country's or Oregon's certification field and seed standards, prior to approval. Kentucky bluegrass must have at least 10 grams tested."

There was further concern about leaving "country's" unspecified; it was suggested to add OECD/AOSCA certified to the phrasing. Again, it was mentioned that this section relates to Interagency certification, which already implies that only OECD or AOSCA tagged lots would be accepted. Concerns continued about ensuring clarity so that the acceptance of this change would not dilute the meaning behind the Oregon blue tag.

After much deliberation, the Board moved and seconded to table item 8 for GLAC to revisit the entire proposal at their next meeting, no changes were made to the existing wording. They request a more detailed explanation of the issue and proposed solution in 2022. All in favor.

9) <u>Seed Lab resolution</u>

The OSU Seed Laboratory is to perform an internal analysis into why the ploidy results have not been accurate and reproducible. They are to produce a report detailing why tests over multiple years have had variable results and how this will be corrected moving forward so the industry can expect accurate reproducible results. This report is to be available May 1, 2021 to those with interest in the seed industry upon request.

This issue was brought to the committee by growers, and the resolution was passed in support.

It was moved and seconded to support this resolution. All in favor.

10) <u>Create Balansa clover standards</u>

In 2018, this Board passed the Berseem clover standards but the Balansa standards were overlooked due to a clerical error. See attachment 2.

It was moved and seconded to accept this standard as written. All in favor.

Cereals Advisory Committee report and recommendations
Kurt Farris presented a wording change requested by the Cereals Advisory Committee. The reasoning for the change is to keep discretion of the inspection timing lies with the inspector.
1) Add wording to the Small Grains standard under Application and Field Inspections
Current phrasing: "Crop inspection will be completed after plant and head maturity show specific variety distinguishing characteristics."
Proposed phrasing: "Crop inspection will be completed after plant and head maturity show specific variety distinguishing characteristics but inspection timing will be subject to Seed Certification discretion."
It was moved and seconded to accept this wording change as presented. All in favor.

Seed Conditioners Advisory Committee report and recommendations
Warren Dole gave Jodi Keeling the floor to present the sampling intensity update. Currently OSCS protocol is to take one primary sample per 1000lbs, with a minimum of 30 samples per lot. For example, a 55,000lb lot, regardless of number of containers, requires 55 primary samples. This practice is excessive and impractical (in the case of bulk bags for instance) and is out of alignment with other national and international agencies. Data suggests that accuracy does not improve with more than 30 primary samples. The committee supports adoption of the AOSCA sampling intensity, with a maximum of 30 primary samples regardless of the size of the lot. The information was presented to the Oregon Seed Association and no concerns were voiced.
No motion is required as this is not an action item.

Mint Advisory Committee report and recommendations
Scott Setniker confirmed that there were no action items submitted by the MAC in 2021.

Hemp Advisory Committee report and recommendations
Matt Cyrus deferred to Rachel Hankins to present the HAC action items due to connection difficulties.
1) Adjust the Food, Fiber, and Grain and Essential Oil Hemp field history standards to match AOSCA minimums
The update brings the Foundation and Registered class requirement to 3 years, and Certified class to 2 years with an allowance for reduction of one year for Certified class if previously the same variety and certified.

2) Correct foot note on Essential Oils standard
A footnote regarding the double inert standard, and how many off-types are allowed in 10,000 plants had been lost in a previous edit and was put back in.

3) Revise minimum sample size from 1lb to 1000g, noting excess seed will be returned
One pound is not enough seed to perform all the required testing, but recognizing the high value of the seed, the group wanted to ensure that any excess seed is returned. This is not standard practice for certified seed samples of other species.

4) Add "Growth facility must only contain certified hemp production" to all hemp standards
This addition brings the Food, Fiber, and Grain, Essential Oil, and Transplant Stock Hemp standards into compliance with AOSCA.

5) Approve new Transplant Stock Hemp standard
This includes the "Growth facility must only contain certified hemp production", and 1000g sample size requirement, items 3 and 4 above. See attachment 3.
A motion was made and seconded to approve all 5 items from the HAC as presented. All in favor.

Tree Seed Project update
Andrew Altishin described the history of the Tree Seed Project and agreement with Washington State Crop Improvement Association for the certification of tree seeds in Oregon. The Forest Tree Seed Advisory Committee to this Board has been "inactive" for 35 years, since a Memorandum of Understanding with WSCIA was signed and when production began to dwindle. The program has continued on a downward trend over the years and it is not expected to regain activity with OSCS in the future. Given this, Andy posed the option to the Board to remove this committee and associated voting member representative from the bylaws.
It was moved and seconded to remove the Tree Seed Advisory Committee from the Board Bylaws. All in favor.

US Department of Agriculture report
There was no report given this year.

Oregon Department of Agriculture report

Elizabeth Savory delivered activity highlights from the ODA Seed Regulatory Program.

- ODA updated the Seed Civil Penalty Rules, creating a matrix delineating minor, moderate and major violation categories. The max violation amount was increased from $2,500 to $10,000.
- A Specialty Crop Block Grant was awarded to ODA by USDA for the purpose of increasing public education on the current rules and how to keep compliance. They hope to create outreach materials and virtual workshops, and eventually in-person activities in collaboration with OSA, OSC, and the Willamette Valley Specialty Seed Association.
- In 2018, ODA initiated an investigation into alleged misrepresentation of Kentucky 31 tall fescue, making a records request to all licensed wholesale seed dealers. In 2019 penalties were issued for 124 violations and about 7 million pounds of misrepresented seed that was found during the investigation. The case was referred to the Administrative Law Judge and is still working through contested cases. Last year ODA issued additional penalties and notices of revocation or suspension, bringing the total to 8.5 million pounds of misrepresented seed. In 2021 the Department continues to work through contested cases and prepare for a hearing in June.
- Shipping issues continue to be prevalent at the ports. APHIS provided some suggestions to help ensure timely inspection and shipment including waiting to request certificates, making sure containers are at the port on the shipping date, and keeping paperwork in order in the event that you need to provide proof that circumstances were beyond your control.
- Oregon exported roughly 32 million more pounds of seed in 2020 than in 2019, despite the challenges posed by the pandemic.
- A few disease and pest issues have been causing problems for international shipments.
- Hemp Program registrations and acres are available at www.oda.direct/hemp. There is a new Registered Growing Areas Map now available which will highlight indoor and outdoor grows available on the site as well.

See attachment 4 for further details on the above items.

Oregon Seed Association report

There was no report given this year.

OSU Seed Services report

Dan Curry offered the Seed Services updates

- In 2019, the Ryegrass Commission initiated a project for the development of a small amount of Gulf annual ryegrass breeder seed. While the group was able to work on the project in 2019, it was put on hold in 2020 due to the pandemic. They are hopeful the project can resume and wrap up in Fall 2021.
- The ISTA subcommittee working on the BDI PCR test has determined that it does not work as intended. They will be asking ISTA for funding to pursue some other markers that may help distinguish between annual and perennial ryegrass using PCR technology.

- A group of researchers have begun to develop a sorting prototype using computer vision, neural networks and robotics. The machine would be used to sort off-type seed from pure grass seed.

See attachment 5 for more details.

Oregon Seed Certification report

Andrew Altishin reviewed Seed Certification activities for the past year.

- The COVID-19 pandemic presented challenges to the OSCS team in 2020, but thanks to good cooperation, communication and support from the College and CRPS Department, we were able to complete our work across the state without suffering excessive hang-ups or any illness. Our staff has adapted well and made it possible for OSCS to continue serving clients with minimal interruption while keeping everyone as safe as possible.
- On average, Certified seed is worth about $350 million dollars to the Oregon seed industry annually, which is about what OSU collects in tuition each year.
- Overall total Certified acres were up 3% in 2020, a large contributing factor being over 200,000 acres of grass seed in the valley.
- OSCS hired Ellen Otis-Sykes as a sampler in Union county and a new Process Manager, Jodi Keeling, from the Seed Lab. We will be conducting a search for a Seed Certification Specialist in 2021 as Mary Beuthin is leaving her position.
- The New Planting report is available on our website, seedcert.oregonstate.edu. It's a useful tool to get a sense of upcoming acreage trends.
- Our IT team has worked closely with inspectors to develop a mapping program that a helicopter pilot can use to navigate from field to field using a series of GPS coordinates, eliminating the need for a navigator. As the aircraft that we have traditionally used to inspect fields are aging out, it is inevitable that we will transition to different machines that may not have room for more than one inspector, so this technology is critical to our ability to continue doing safe and efficient aerial inspections.

See attachment 6 for more details.

OSU Seed Lab report

Dave Stimpson updated the group on Seed Lab activities.

- Over 10,000 samples have been processed since July 1, 2020. About 80% are grass seed and about 70% of those are Certified.
- The first Industrial Hemp samples were received at the lab last year, 350 since January 2020.
- COVID-19 and the fall wildfires impacted sample turnaround times; there were closures due to smoke and extended leaves due to illness. Implementing barriers and staggered work schedules has been successful in keeping the lab running safely for everyone.
- The lab agreed to investigate its ploidy procedures following the GLAC resolution in December 2020. Horticulture and Statistics faculty are reviewing the testing data and a report is due later this spring.
- The hiring process has begun for a new Germination Supervisor. In general, the budget looks good and a price increase is not expected in this fiscal year.

- Research continues on various testing technologies including the computer vision system for purity, and a new dividing process.
- Special testing has developed gender testing for hemp seed. More research is needed to increase efficiency and reduce turnaround time.
- Recently the lab has acquired PCR capabilities and has been working heavily on potato virus testing, and also some ryegrass testing methods. There are many potential applications for this technology that could be developed.

See attachment 7 for more details.

Other Business

No other business was discussed.

Adjournment

The meeting adjourned at 3:20pm.

Minutes prepared by Mary Beuthin.
All advisory committee meeting minutes and supplementary materials are available online at seedcert.oregonstate.edu, or by request to the Seed Certification office.

Attachment 1

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

CERTIFICATION STANDARDS
HYBRID ALFALFA
(Medicago sativa)
Proposed February 16, 2021

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 Hybrid Alfalfa standards.

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

Genetic Standards: Designation of Classes of Seed

a. Hybrid alfalfa is to be planted for any use except seed production
b. Only the seed class "certified" is recognized for seed production
c. Commercial hybrids must be produced from certified Foundation Seed
d. Definitions of parental types.
    1. (A) male sterile;
    2. (B) any strain which when crossed with A maintains sterility;
    3. (C) any male used as a male in a commercial hybrid.

Field History: Land must be free from volunteer Alfalfa before planting for at least 4 years to produce Foundation seed and for at least 1 year 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 Certified fields, the time interval between harvest and new planting must be one year if the previous crop was of the same variety and generation. Alfalfa must be planted in distinct rows. Exceptions must be approved by the Seed Certification Office prior to planting.

Field Inspections:

1. Unit of Certification. The entire crossing field grown must be eligible and inspected.
2. Field inspection: Certified seed fields of commercial hybrids or Foundation seed stock shall be given at least two field inspections:
    a. Seedling: After planting but before flowering.
    b. Full bloom crop inspection: at least 75% bloom, but before appreciable seed set, to determine pollen production in the male sterile parent. Two hundred plants shall be sampled to determine the pollen production index (PPI). Any inspection that is within 2 percentage points of the limit will require an additional 100 plants sampled and included in the calculation. Sampling shall be representative of the entire field.
3. The seedling application must be submitted within 60 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 (AxB)	0.10%	None	None	1320 ft.	1320 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.					

Foundation ((A) x (B)) a parent border (B) is desirable.
There shall be at least 6 feet between (A) and (B) in a crossing block, or between the seed and pollen strains in a hybrid production field, and they shall be managed and harvested to prevent mixing.
Ratio of male sterile and pollen strains shall not be more than 2:1.

[1] See Section IV, D in the OSCS Handbook
[2] Includes off-type plants.

Pollen Production: Maximum Pollen Production Index (PPI) permitted*

Crop	Seed Stocks	Allowable Index
Foundation production	A	14
Certified production		
95% Hybrid	((A)x(B))x(C)	6
75% Hybrid	((A)x(B))x(C)	42
75% Hybrid	((A)x(B))+C	25**

*Flowers shall be examined by tripping them on an instrument and rating them as producing pollen or no pollen production. The PPI is equal to the number of pollen production flowers out of 100 flowers tripped.
** Crops producing certified seed that use a production method whereby the male and female lines are planted as a composite shall be rejected if the PPI exceeds 30. Crops with a PPI in excess of 25 but less than 30 must be blended with an appropriate amount of seed to reach a PPI of 25 in order to be eligible for certification.

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

Factor	Foundation (White tag)	Certified (Blue tag)
Pure seed, minimum	99.00%	99.00%
Other crops, maximum	0.10%	0.25%
Sweet Clover, maximum	None	90/lb.
Inert matter, maximum	1.00%	1.00%
Weed seed, [1,2] maximum	0.10%	0.25%
Weed seed, GROUP A[3], singly or combined	45/lb.	45/lb.
Germination, including hard seed	85%	85%

[1] The presence of Dodder is not allowed in any class of seed. See Section IX, D4 in the OSCS Handbook.
[2] None of the prohibited weeds listed in Section V in the OSCS Handbook, nor St. Johnswort is allowed in any class of seed.
[3] GROUP A – Buckhorn plantain, Docks, Sheep sorrel, and Bedstraw.

Attachment 2

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

CERTIFICATION STANDARDS
BALANSA CLOVER
(Trifolium michelianum)
Approved February 13, 2018

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 Balansa 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 Balansa 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 Balansa Clover during the previous two years to produce Certified seed, unless the crop was of the same variety and certified. Balansa 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[1]	Isolation Requirements[2]	
		Less than 5 acres	More than 5 acres
Foundation[3]	None	1320 ft.	1320 ft.
Registered[3]	0.2%	660 ft.	330 ft.
Certified[3]	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[4], maximum	0.25%	0.25%	0.50%
Weed seed, GROUP A[5], singly or combined	None	27/lb.	45/lb.
Germination, including hard seed	85%	85%	85%

[1] Includes off-type plants.
[2] See Section IV D, General Standards in the OSCS Handbook.
[3] 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.
[4] None of the prohibited weeds listed in section V in the OSCS Handbook, nor any Chess, St. Johnswort, or Small broomrape allowed in certified seed.
[5] GROUP A – Buckhorn plantain, Docks, Sheep sorrel, Bedstraw, and Brassica spp.

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

CERTIFICATION STANDARDS
TRANSPLANT STOCK HEMP
(*Cannabis sativa* L.) Proposed
November 12, 2020

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 Transplant Stock Hemp standards.

Varieties Certified: Only varieties approved for production by Federal or local regulatory authorities may be eligible for seed certification.

Field History: To produce certified transplants, land must not have grown or been seeded to any *Cannabis sp.* in the previous 2 years. This may be reduced to one year if the previous crop was certified. Hemp must be planted in distinct rows. OSCS must approve exceptions prior to planting. To produce Certified transplants in greenhouse production, the greenhouse facility must submit a Standard Operating Procedure and document the facility is free of any plant material from a previous crop prior to production. Soil mix must be new, soil-less media, or sanitized soil mixes.

Greenhouse and Field Inspections: All transplant production will be inspected at least twice for varietal labeling, phenotypic purity, isolation, general physical condition, and appearance of plants. Additional inspections may be necessary to ensure certification standards are met. Unlabeled or inadequately labeled transplants will be ineligible for certification. Applications shall be made within 7 days of placement of seedlings in the greenhouse or field. For fields or greenhouses directly seeded, applications shall be made within 14 days of planting.

Field and Greenhouse Standards:

Class of Seed Produced	Unsatisfactory plants*	Off Types	Number of Inspections	Isolation Distance From a different variety (prior to flowering)
Foundation	0	20 in 10,000	2	1.5 ft
Registered	0	20 in 10,000	2	1.5 ft
Certified	0	20 in 10,000	2	1.5 ft

***Unsatisfactory plants may include diseased, unsatisfactory appearance, insect infestation, otherwise stressed or any condition which prevents thorough inspection.**

Special notes:

A. Greenhouse production – For certification purposes, a greenhouse will be identified as a single "field." This should match the warehouse information given to ODA.

B. Growers will be required by Federal or local regulations to obtain THC test results from a recognized laboratory verifying that the THC content of their Hemp crop complies with applicable regulations. Growers shall be required to submit these results to OSCS to complete seed certification, and the results will be verified with ODA.

Attachment 4

Seed Certification, Foundation Seed and Plant Materials Board Update February 16, 2021

Seed Regulatory Program Updates

Seed Civil Penalty Rules Updated

- New civil penalty matrix developed – minor, moderate, and major violations.
- Increased maximum violation amount to $10,000 (maximum allowed under statute).
- Updated process for license suspension and revocation.
- Brought recordkeeping requirements in line with the Federal Seed Act.

Specialty Crop Block Grant Award

- Collaborative project with Oregon Seed Association, Oregon Seed Council, and Willamette Valley Specialty Seed Association.
- Develop updated outreach and educational materials and provide educational workshops to industry.
- Started October 2020; three-year project.

Kentucky 31 Investigation Update

- 2018 – Industry-wide records request to all licensed wholesale seed dealers
- 2019- Identified 124 violations of Oregon Seed Law – issued civil penalties of $248,000, representing ~7 million lbs of seed; Case referred to an Administrative Law Judge; began working through administrative process for contested cases
- 2020 – Issued amended civil penalties – additional 83 violations and $176,000 in penalties, ~8.5 million lbs of seed; Issued licensed actions – notice of revocation or suspension/probation
- 2021 – Hearing scheduled for June; continuing to work through contested case process and preapring for hearing.

Export Issues

We have heard from many exporters about continuing issues at the ports – lack of containers, shipments getting pushed back, bookings canceled, etc.. We reached out to USDA APHIS PPQ for some advice – here are some things that they suggest:

- Wait to request your phytosanitary certificate until the 29th or 30th day after the inspection (as long as the importing country's time limit isn't affected).
- Make sure the containers are at the port on the date the shipping company specifies. If the shipping company doesn't have your container on board within the time limit, it is then the shipper's fault if the importing country's time limits are broken.
- Have all your paperwork in order - if you can show that you had everything scheduled/ delivered on time and circumstances beyond your control affected your shipping, then there is a better chance that an exception can be made.

Some of these may seem like common sense, but they can really help. And APHIS will be better able to intervene on your behalf if your documentation supports that you met all the timelines and requirements for shipping. We will do everything we can to assist companies in getting their inspections done and phytosanitary certificates issued so that product can continue to move.

Export Statistics

- ~32 million more pounds of seed were exported in 2020 than in 2019, based on phytosanitary certificates issued by the ODA.

Plant Health Program Updates

Blind Seed Disease – *Gloeotinia temulenta*

- Companies have been experiencing rejections of shipments of tall fescue and annual ryegrass to Japan for blind seed disease.
- Testing by ODA and private labs have not found evidence of blind seed disease or the pathogen in rejected lots (either before they were shipped or upon return)
- APHIS requested clarification of Japan's testing methods – Japan has changed their method: If they detect spores, they will run a grow-out test to see if they germinate before failing a seed lot. Previously, they had failed lots if they detected spores, whether the spores were viable or not.

Seed Testing for South Korea – *Anguina* Nematode Testing

- South Korea has added all *Anguina* species nematodes to their harmful organism list except *A. moxae* and *A. tritici*.
- For shipments of annual ryegrass (*Lolium multiflorum*) to South Korea, nematode testing and an additional declaration stating "This consignment has been tested and found free of Anguina nematodes of concern to the Republic of Korea" are now required.
- South Korea still reserves the right to test lots upon arrival.

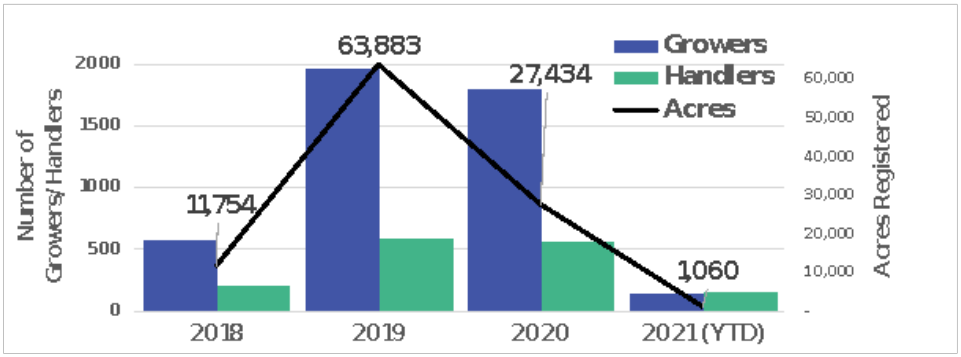
Seed Testing for South Korea – PSC Testing

- South Korea will now require testing for oat seed shipments for *Pseudomonas syringae* pv. *coronafaciens* (PSC)– effective September 28, 2020.
- A new additional declaration for phytosanitary certificates of oat seed shipments: "This consignment has passed PCR testing and found to be free from PSC."
- Consignments tested using this protocol and with this additional declaration would not be subject to additional testing upon arrival.

Hemp Program Updates

- Data is current through February 5, 2021.
- More information is available at www.oda.direct/hemp.
- Registered Growing Areas Map: https://oda.direct/HempProductionAreas.

Hemp Registrations	2018	2019	2020	2021 (YTD)
Hemp Seed	290	853	205	23
Grower	584	1961	1797	151
Handler	212	598	561	155



Attachment 5

Seed Services Update
February 16, 2021

- Two years ago, the Ryegrass Commission asked a group of local grass seed industry people to see if they can develop a small amount of Gulf breeder seed. The first year of a multiple year project was completed in 2019 and the project was put on hold due to the COVID pandemic. The team hopes to have a small amount of Gulf breeder seed by the fall of 2021 or 2022.

- An ISTA sub-committee worked on testing the BDI PCR test to see if it would work on perennial ryegrass varieties. It was determined that it did not work. Therefore, the committee will be asking ISTA for funding to test out some new primers that hopefully will tell the difference between perennial and annual ryegrass.

- A team of researchers have been assembled to use computer vision, neural networks, and robotics to develop a prototype machine that could be used to sort off-type seed from pure grass seed. The team is currently applying for a grant to fund the major portion of the project.

Attachment 6

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2020 Year in Review

Total Acres Certified of all Crops – 236,485 (3%)
Total Acres of Grass Crops Certified – 200,813 (4.2%)
Tall fescue – 113,898 (7.5%)
Perennial ryegrass – 32,732 (0.5%)
K. Bluegrass – 15,139 (8.1%)
Annual ryegrass – 10,290 (2.6%)
Chewings fescue – 6,783 (-2.0%)
Total Acres of Small Grains Certified – 21,422 (-11.2%)
Total Acres of Legumes Certified – 4,657 (-19.9%)
Red clover – 2,184 (-19.9%)
Crimson clover – 837 (-20.1%)
Total Acres of Misc. Other Crops Certified – 9,593 (38.4%)
Radish – 3,015 (152.9%)
Total Acres of Potatoes Certified – 2,977 (11%)
Total Acres of PVG Certified – 92 (-46.8%)
Total Acres of Corn – 2,634 (37.1%)
Hemp Fields Inspected – 37
Mint – 165 (-17.5%)
Active Warehouses in 2020 - 184
Active Growers in 2020 - 684

New Hires

- Ellen Otis-Sykes, Seed Certification Aide (Sampler, Union Co.)
- Jodi Keeling, Process Manager, OSCS Main Office
- Seed Certification Specialist - Vacant

OSCS Staffing

- 3 Administrative staff
- 2 Information Technology Staff
- 7 Seed Certification Specialists
- 8 Part-time/seasonal Seed Certification Specialists
- 8 Seed Certification Samplers

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- 1 Manager and Seed Certification Specialist
- Various part-time student employees

Programs Administered

- Oregon Certified Seed
  - Part of the Association of Official Seed Certifying Agencies (AOSCA)
- OECD Certified Seed
  - Administered in Oregon for USDA - AMS

Attachment 7

OSU Seed Lab Update
Annual Certification Board Meeting
16 February 2021

- Sample numbers/Turnaround/Budget
  - The OSU fiscal year begins 1 Jul. Since then we have received and tested over 10,000 samples. About 80% of those samples are grass seed samples.
  - We have received and tested more than 350 samples of Industrial Hemp since 1 Jan 2020. There have also been several projects pushing the sample totals over 500 or about 4% of the total samples received.
  - Turnaround times have been impacted somewhat by COVID-19 as well as the wildfires. We had closures and an unusually high amount of COVID leave taken since March.
  - A review of ploidy methods and procedures is underway. Faculty from OSU Horticulture and Statistics are reviewing all data for the past 3 years. Report due later this spring.
  - We have received approval to hire a new Germination Supervisor. The hiring process has begun.
  - The Lab budget looks good. We do not anticipate a general price increase in this fiscal year.

- Ongoing research
  - Work continues on Computer Vision system for Purity Testing. Another project is looking at new dividing processes.
  - The Special Testing unit has developed and implemented gender testing for hemp. More research is being conducted with increased efficiency and reduction in turnaround time as the goals.
  - The Lab is performing seed health testing in increasing numbers. We have recently been reaccredited by the National Seed Health System (USDA). We are now accredited to perform several pathogen tests (either ELISA or PCR) and Pest and Disease tests that meet the requirements for issuing phytosanitary certificates.
  - ISTA is conducting a validation study on "Detection and identification of *Botrytis cinerea* on hemp (*Cannabis sativa L.*) seeds". The Special Testing unit is beginning work on development and validation of this test using the newly validated ISTA method.
  - The Lab has recently acquired PCR capabilities. Development and validation of methods is underway for Potato Virus and other health tests. There are many more applications for this technology that we may develop depending upon resources (both human and monetary).
  - We were asked by the industry to investigate ploidy results for the past 3 years. We have reached out to the University and have connected with Microbiologist and Statistician who will review our processes and data interpretation. Results will be reported later this spring.

- COVID continues to be a challenge.
  - Many of the staff have been tested—all with negative results. We have been preparing contingencies for the advent of a positive test result. We are hopeful of continuing testing with only minor delays whenever this happens.