2015 Potato Certification Advisory Committee

THREE RIVERS CONVENTION CENTER
Kennewick, WA 99336
Tuesday, Jan 27, 2015 at 9:00 AM

AGENDA

I. WELCOME & INTRODUCTIONS – George Rajnus

II. PRESENTING THE 2014 MINUTES

(see: http://seedcert.oregonstate.edu/sites/default/files/advcom/potato/potatominutes14.pdf)

III. PROGRAM UPDATES

A. Oregon Department of Agriculture

B. OSU - Crop Science & Seed Services Reports

C. Oregon Seed Certification Service

VII. Other Business

VIII. Election of new Vice Chair

IX. Adjourn

EXPANDED BACKGROUND INFORMATION

IV. REVIEW OF NATIONAL CERTIFICATION MEETINGS

Jeff McMorran, Bill Brewer, Scott Cheyne, Mike Macy.

V. PROPOSALS REQUIRING COMMITTEE ACTION

A. (Certified) Line Selection Program Sub-class ("-LSP") - renewal?

Summary: In 2014 OSCS instituted a new program that allowed for material of a single variety type, but made of slightly differing genotypes, to be entered into the certification program with a "-LSP" sub-class. This material had to meet the same criteria as other material in the program in regards to pathogen testing, inspections and seed source documentation. All material in a group must meet the basic variety description for the designated line. The primary goal of this program was to allow for evaluation of material in single variety line selection program on a seed farm without violating the intent for the either the Oregon Seed Law or provisions of a Seed Control District. Subsequent generations of material produced in this program would be eligible for re-certification in the regular program once a single genotype was selected for increase.

Results: In 2014, there were 6 lots entered into this program. The seed source was Idaho and was documented as eligible for the class noted. The material was field inspected as required for any other lots. Any off-type looking clones were marked. All of these lots were found to be eligible for the "-LSP" subclass. Two were downgraded to G1-LSP due the presence of virus (mosaic). This material was not entered into the Winter Grow-Out program because it is not intended for increase/study beyond FY2015 and in any event would have met the eligibility for exemption due to lot size. OSCS would like to continue this program in 2015 without modification.

B. Experimental Line Selection Program (EGLSP) - update and renewal?

Summary: In 2014 OSCS instituted a new program that allowed for material originating from a single variety, but made of differing phenotypes and genotypes, to be entered into an experimental program in which this material would be monitored as done with other 'standard' lots in the certification program but would not be eligible for certification due to phenotypical differences within the lot. As with the LSP, the primary goal of this program was to allow for evaluation of material on a seed farm without violating the intent for the either the Oregon Seed Law or a provision of a Seed Control District.

Results: No lots were entered into this program in 2014, however if material entered into the LSP described above showed inacceptable phenotypical variation to remain in the LSP as certified material, this program would have been a option for the retention of such material in the system for further study without violating seed requirements. OSCS would like to be able to continue to offer this program in 2015 without modification.

C. Approved Location for Nuclear and G1 class material (isolations)

Summary - The 2014 PCAC set up a sub-committee to better define what an "Approved Location" is in regards to the production of Nuclear and G1 class material, especially in regards to isolation distances (see Table 4, Page 13 of the 2014 Potato Standards). This sub-committee consisted of Phil Hamm, Rob Lane, and Jeff McMorran and they met on 5-5-14. Their proposal is noted below.

Proposal: Amend "Table 4 - Isolation Requirements" to have the following for Nuclear-Generation 1 class seed (currently reads "Approved Location")

"***300 feet from fields planted with seed higher than G3 class***"*[1]

With a footnote similar to the current one for G2/G3 seed:

[1] i.e. must be isolated from fields using G4 and G5 seed as planting stock.

Discussion: This would eliminate the possibility of Nuclear class seed being planted in close proximity of G4 or G5 seed fields which can start out with as much as 1 to 2% mosaic (respectively) or commercial fields planted with G4/G5 generation seed.

Further Considerations:

(1) **Isolation against commercial fields**: Should there be any additional restrictions against N and G1 class fields planted in close proximity to a commercial field even if the commercial field is planted with G3 seed? The concern here is that disease and disease vectors may not be as rigorously controlled in commercial fields as they are in seed fields.

(2) **Own Use Only Exemptions**: The footnote for Gen 2/3 exempts the isolation requirement for 'own-use-only' seed. Should this also apply to the Nuc/G1 seed lots?

D. WGO requirement - optional or mandatory?

Summary - In Oregon, a Winter Grow-Out (WGO) is not required for final certification. A WGO is only required for lots to be eligible for re-certification. Though many lots not intended for re-certification are subjected to a WGO, some are not; it is the grower's choice. There have been some concerns expressed over this policy in the last two years. A majority of other states do require that all certified lots be entered into the certification program for final certification, this requirement is based primarily on the fact that virus content of a lot is often under represented by the field readings. There is also some concern that under the planed revisions to the Necrotic Virus Management Plan, lots exceeding 15% mosaic could not be shipped across state lines as certified. Without a Winter Grow-Out, compliance with this provision is not realistic.

Two proposals have been put forth:

(1) Require a WGO for ALL lots for final certification.

(2) Continue to make the WGO optional, but require that lots not receiving a WGO be automatically downgraded to G5[1].

Should all lots be required to have a WGO?. Should there be an exception for Own-use-only lots?

[1] One problem …. Lots shipped soon after harvest, just when would the 'automatic downgrade' take place?

E. Required PVY testing of Winter Grow-Out Samples

Summary: There is an increasing number of strains of PVY that do not express typical symptom expression (mosaic) in susceptible varieties. Some strains are even relatively symptomless in varieties commonly assumed to express clear mosaic symptoms when infected with PVY. This situation has resulted in additional mandatory PVY testing on lots in the Winter Grow-Out in many areas. Idaho & WA now require PVY testing of WGO lots. In previous years much more virus testing was done on early generation lots in Oregon; however, very little testing of summer lots is done anymore (nor is it now being recommended). Proposed revision to the national Necrotic Virus Management Plan will likely put a limit on the amount of mosaic allowed in 'certified' seed shipped across state lines. Some states interpret this requirement to mean a percent PVY (lab tested), not a percent visible mosaic.

Proposal: Require PVY testing of all lots in the WGO program. A sample of up to 400 leaves per lot would be sampled and sent to a testing lab for analysis (currently ICIA is used). The fee for PVY testing that is already offered is $43 per lot for sampling and mailing with the grower paying the lab fees directly. Alternatively the cost of virus testing could be added to the WGO fee.[2] If mandatory PVY testing is implemented, changes to the tolerance table would have to be made to indicate that WGO scores for "mosaic" are based on PVY lab testing.

Possible variations/concerns: Optional for 'OUO lots'? Only required for lot to be eligible for recertification?

F. Maximum tolerance for PVY in Winter Grow-Out Samples

Summary: In Oregon maximum allowable tolerances are only applied to field inspections (with the exception for those for which a 'zero tolerance' applies like BRR and nematode). Oregon currently has no maximum tolerance for mosaic found in the WGO program. Lots exceeding 2% mosaic (5% for 'latent' varieties) are downgraded to G5 that has a 'Buyer Seller Agreement' acceptance note but is not rejected. This policy results in lots with as high as 30% or more mosaic still being tag eligible. This situation has resulted in complaints form buyers who receive this seed and question the validity of the Oregon program. It also tarnishes the Oregon reputation for quality seed when these lots show up in seed lot trials in Oregon and Washington. In addition, the NVMP stipulates that certified seed have no more than ___% mosaic, which means that shipping tagged seed across state lines that exceeds this amount of virus is in violation of the NVMP. OSCS currently has no way to prevent this practice.

Proposal (options):

(1) Limit final certification tolerance for mosaic and total visual virus at the G5 class to 15% (i.e., remove the "BSA" designation); **OR**

(2) Allow for certification but not blue tag (i.e., require yellow tag for any lot > than 15%). In the past yellow tags have been used for this purpose. OSCS already notes lots downgraded to

[2] OSCS has problems with this approach because of the way fees must be approved in advance. A set fee is approved and must be charged even if the outside lab increases their fee. Rebilling for the lab fee is another possibility, however all OSU account must add an additional 8% for such pass through charges.

G5 due to "excessive virus" on the tags. Some other color tag for class related "BSA" may be needed.[3]

G. WGO Requirement for Incoming lots - how to accept 'ELISA only' PHT lots?

Summary: An increasing number of lots are received in which the only Post-Harvest Test done appears to be virus testing (not a Winter Grow-Out). This occurs in cases where (1) the lots are purchased after WGO are possible; (2) By mis-understandings by buyer/seller on what type of PHT was done; (3) Dormancy issues preventing emergence (Colorado-Canella); 4) Failure of OSCS to receive out-of-state WGO lots in a timely manner (arrived after cut-off date). In any event, OSCS had a record number of ELISA-only PHT lots in 2014. It did not seem possible to reject all these lots out-of-hand so OSCS adopted the interim policy of accepting these lots but requiring that final certification of the lot be pending submission of a WGO of the harvested tubers (even if grower did not intend to re-certify).

Proposal: In order to continue this practice as standard procedure, OSCS is asking for the policy to be officially accepted by the PCAC and included in the Potato Standards. The specific change would be placed Under Section VIII as follows (bold-italicized text):

VIII. SEED STOCK DOCUMENTATION (page 12 in the 2014 Standards)

Documentary evidence of the seed source used for planting must accompany the application. Certification tags from other states will be accepted when accompanied by a North American Certified Seed Potato Health Certificate issued by the state of origin. All seed stock must be winter test-plot approved, except when winter testing is not required based on lot size, or in special cases when approved in advance by the Certification office. ***Lots accepted where the Post-Harvest test consisted of lab testing only will be required to submit a winter Grow-Out sample of the crop produced for final certification.***

H. Calico - Review/Discussion of Tolerances.

Summary: Calico (caused by Alfalfa Mosaic Virus) is currently 'scored' during potato field inspections and has a tolerance under the category of 'total visual virus' for each class. Aphids may move AlfMV from adjacent alfalfa into seed potato fields causing Calico; however this disease is rarely, if ever spread from potato to potato in the field. Calico seems to have minimal impact of potato yields and is not considered an economically important virus. It is known to have the potential of causing internal necrosis in tubers of certain varieties under certain conditions.

Nationally, finding Calico in a seed lot is not considered nearly as critical as finding other viral disease we score like PVY and PLRV; however, currently the tolerance for this disease in Oregon is the same as for Mosaic. Every year OSCS has to downgrade lots for the presence **of Calico,** especially in Nuclear and G1 lots where tolerance for 'total visible virus' is so low. Finding a single calico in a Nuclear lot is cause for a down-grade to G1.

[3] The use of blue and yellow tags is conventionally (nationally) used to denote grade (US#1, US#2, etc.) not class (N,G1,G2, etc.). The grade of a lot is generally not influenced by the PVY content unless a necrosing strain is involved.

Not all states even score for Calico. TABLE 1 on page 8 summarizes how different states handle Calico when found.

Proposal: There could be several remedies for this situation as follows:

1. Set specific, less stringent, tolerances for Calico in a seed lot (currently done in Montana). **OR**
2. Record the presence of Calico when found (including the percent observed) but do not score it against the lot. **OR**
3. Ignore the presence of Calico.

OSCS is recommending option #2.

I. Zebra Chip - Review/Discussion occurrences in the Potato Standards.

Summary: Zebra Chip disease, caused by toxins produced Candidatus Liberibacter which is spread to potatoes by the Potato Psyllid, is currently present in the OSCS Standards in two places:

(1) TABLE 5 **"Field/Harvest Inspections"** page 16, where is says that Zebra Chip, when confirmed, is noted but not scored against the lot (see summary starting on page 10 below); and

(2) TABLE 7 "**Winter Grow-Out**", page 18 where it is treated the same as PLO (i.e. Purple top) with set tolerances.

The specific reason for each occurrence has to do with discussion at previous PCAC meetings and is summarized on page 9 below. In preparation of the summary, it came to OSCS attention that including Zebra Chip in footnote A of Table 7 should have been preceded by a vote of the PCAC and approval of the Certification Board because it sets a tolerance.

Proposal: To rectify this situation OSCS is asking the PCAC to either:

(1) Approve wording in Table 7 footnote A as written; **OR**
(2) Remove footnote A reference to Zebra Chip in Table 7; **OR**
(3) Some other option.

OSCS would recommend option #1.

J. BRR Testing - Update of current testing requirements

(1) Definition of "positive sample"

(2) Required testing protocol for Entry Level material

(3) Testing of later generations

(4) Response when found in field/storage

Calico Question

Calico question results

1. Does your state/province 'score' for Calico (i.e. have tolerances for this disease that can result in a downgrade or rejection of a lot)?
2. If so, are there specific tolerances for Calico, or is it lumped into some type for general category like 'total visual virus'?
3. If not, is it noted on the inspection report when found?
4. Have you ever seen any deleterious effects of having Calico show up in a seed lot?

TABLE 1- RESULTS

	(A)	OR	ID	ND	WI	(notes)
1	Score?	Yes	Yes	No	Yes	
2	Tolerances?	TVV	TVV	na	TVV	*1
3	Reported?	na	na	Yes	na	
4	Problem?	Yes, *2	No	No	No	

	(B)	AK	CA	CO	MT	WA
1	Score?	NM *3	? *3	Yes	Yes	? *3
2	Tolerances?		TVV	"Other virus"	Specific	TTV
3	Reported?		*3	??	--	??
4	Problem?			??	??	??

NOTES

*1 TVV = Total Visual Virus

*2 - Yes, one lot with necrotic arcs attributed to AlfMV.

*3 - ? = Not specifically mentioned/found in current standards (=NM)

(A) = Responded (B) = From Standards posted on web pages

Zebra Chip discussions occurring in the PCAC minutes

2011 (not found)

2012 - F. **OTHER BUSINESS** (pg. 3)

Zebra Chip: Jim Carlson asked how Seed Certification is handling Zebra Chip, which has had such a major impact on commercial production in the Columbia Basin this year. Jeff answered that there are no tolerances for Zebra Chip in the Standards so a confirmed find of Zebra Chip in a seed lot would be noted in the remarks section, but not scored[4]. Zebra chip is not listed in the Potato Standards because: (1) It's a new disease for the PNW, and (2) It is not believed to be seed-borne. Phil Hamm noted that there was a difference of opinion on the second point. Though most observations and studies confirm that tubers from infected plants either fail to germinate or produce week plants that are usually free of Liberibacter pathogen (making it a self-limiting disease), they have found young plants in the seed lot trials that that tested positive for this pathogen. He said studies are continuing to assess the importance of seed lots as a source of inoculum. Jim Carlson felt it would be better to recognize that seed is not the issue, and to concentrate research efforts on commercial fields. Phil Hamm replied that seed is generally the initial focus of new potato diseases because it is a vegetative propagated crop. Jeff noted that the PAA Certification Section will be asking that a 'position paper' be published showing that seed is not a significant source of inoculum for this disease; something that could be used to convince our trading partners that seed from the western states is safe, despite Zebra Chip occurring in our commercial areas. There was also some discussion about the overwintering of the Potato-tomato Psyllid in the Columbia basin. It appears they can overwinter here (despite earlier beliefs) but it is not known if the overwintering psyllid are infective. It is also not known why overwintering psyllid take so long to buildup during the summer months. New pheromone traps might help with this study.

2013 - E. OTHER UPDATES: Review of Items Discussed at the National Certification Meetings (pg. 5)

Zebra Chip was discussed, and it was emphasized that this disease was not a seed borne issue because emergence of Zebra Chip infected seed is very poor and generally not an effective source of inoculum. Jeff noted that this view point is prevalent in the US and Europe but some Pacific rim countries may still try to make an export issue of it, thus necessitating the need for more research 'proving' this point and, more importantly, publications saying this.

2014 - D-3. Review Of National Certification Meetings (pg. 3)

7. Zebra Chip: Was found in one Oregon seed lot this year. Still not an actual disease issue in seed, but a real issue in regards to export of seed. Trading partners are asking how US can assure their potato shipments are free of this disease if we don't test for it (routinely). Bill Brewer also commented that the real trade related issue is the redirection of potatoes imported for processing but ending up being used as seed potatoes. Additional published reports of how Zebra Chip is not a seed-borne issue (under normal commercial conditions) would be helpful.

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[4] {NOTE: because of the remark "*Zebra Chip in a seed lot would be noted in the remarks section, but not scored*" made here, but not specifically referenced in the Standards, footnote "g" on **Table 5** of the Standards was modified to reflect this statement. It was also added to **XVI. Sorting Regulations** C. Exotic Diseases, and **Table 7** "Tolerances - Winter Grow-Out" footnote "a", though inclusion in footnote "a" should have had PCAC approval (involving a tolerance) but did not.}

Zebra Chip in the Oregon Potato Standards

A. **Field/Harvest Inspections**: Zebra Chip is noted in our inspections for Field/Harvest Inspections (Table 5, page 16) and Winter Grow-Out (Table 7, page 18). Technically we only have 'tolerances' set for the WGO and not for the Field/Harvest Inspections where it is simply noted (when confirmed in a lab) but not used to downgrade a lot. It would only be considered significant if present in such amounts as to preclude us from scoring other conditions (similar to other diseases we note but do not score for).

B. **Winter Grow-Out**: If found in the Winter Grow-Out it is listed under 'other visual viruses'. It was probably placed under footnote "a" because, like the phytoplasma, it is not a virus but does have virus-like symptoms that we look for. While generally not considered seed-borne, if we found it in the WGO sample, it obviously is seed-borne at that point and may be of concern to the purchaser of the seed. The tolerances are noted on Table 7 which I have attached as a separate PDF.

C. **Occurrence**: We did have one confirmed ZC in a seed lot last year, found during the Harvest Inspection. We do not routinely test lots for ZC (nor any other disease).

Table 7 – Tolerances – Winter Grow-out

Factor[1]	Nuclear	Gen 1	Gen 2	Gen 3	Gen 4	Gen 5
Leafroll	0	0.25	0.30	0.75	1.0	BSA [d]
Mosaic						
- Other varieties	0	0.25	0.50	1.00	2.00	
-Latent PVY varieties [e]	0	0.25	0.50	1.00	5.00	BSA [d]
Other visible virus [a]	0	0.25	0.75	2.00	2.00	BSA [d]
Total visible viruses						
- Other varieties	0	0.50	0.75	2.00	2.00	BSA [d]
- Latent PVY varieties [e]	0	0.50	0.75	2.00	5.00 [f]	BSA [d]
Variety mixtures	0	0	0.25	0.50	1.00	BSA [d]

1 There is a zero tolerance for **Spindle tuber viroid, Bacterial Ring Rot, and Root-Knot Nematode** at all classes.

a -Includes diseases caused by phytoplasma organisms (i.e., Purple Top, Aster Yellow) and Zebra Chip (if confirmed).

b -Protocol on file specifying what constitutes a confirmation of diagnosis for BRR.

d -Acceptance of the seed lot will be based on buyer/seller agreement.

e -See definition on page 17, include (but may not be limited to) CalWhite, Gem Russet, GemStar Russet, Shepody, all Russet Norkotah, and Winema.

f -Only lots at or below 2% mosaic are eligible for recertification.

Table 5 - Tolerances - Field/Harvest Inspections

	Generation								
				G2		G3 &4		G5	
Factor [a, d]	PN[b]	N[b]	G1[b]	1st	2nd	1st	2nd	1st	2nd
Leafroll	0.0	0.0	0.05	0.20	0.10	0.50	0.25	0.50	0.25
Mosaic	0.0	0.0	0.10	0.30	0.20	2.00	1.00	3.00	2.00
Other visible viruses [g]	0.0[e]	0.0	0.10	0.30	0.20	2.00	1.00	3.00	2.00
Total visible virus	0.0	0.0	0.10	0.50	0.20	2.00	1.00	4.00	3.00
Blackleg [c]	0.0[f]	0.0	0.10	0.30	0.20	3.00	1.00	3.00	1.00
Chemical Injury	3%[h]		(all classes)						
Variety mixture/ off type	0.0	0.0	0.0	0.20	0.10	0.50	0.25	2.00	0.50

[a] There is a zero tolerance for the following at all classes: **Spindle Tuber Viroid, Bacterial Ring Rot, and Root-Knot Nematode**. Tolerance for disease symptoms caused by **Tobacco Rattle Virus, Potato Mop Top Virus, and Potato Virus Y-ntn** strains in foliage or tubers is not to exceed 0.5% for seed eligible for recertification, nor 2.0% for certified seed ineligible for recertification"

[b] Last inspection requirements.

[c] This tolerance is based on the presence of a typical, inky black stem symptoms near soil surface without obvious symptoms of White Mold (*Sclerotinia sclerotiorum)*. Tolerance does not take into consideration the presence of blackleg bacteria that may be present on the plant but not causing disease symptoms or other symptoms caused by Erwinia carotovora such as aerial stem rot, below ground stem decay, decay, early dying. Tolerance is no indication that this is a true value for the amount of blackleg in a seed lot.

[d] Protocols on file specifying what constitutes a confirmation of diagnosis.

[e] Also, zero tolerance for PVX, PVY and PLRV with ELISA testing.

[f] Plants or tubers tested for bacteria.

[g] Disease caused by Phytoplasma (I.e. Purple Top, Aster Yellow, etc.) or *Candidatus liberibacter* (Zebra Chip) are reported but are not counted against the class unless severe enough to mask scoring of other diseases

[h] Field withheld from certification pending Post-Harvest Test results where results will be noted on the final reports.