

# STATE OF ALASKA SEED POTATO CERTIFICATION HANDBOOK



Photo credit: Willem Schrage



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Division of Agriculture

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## A. BACKGROUND

Effective January 1, 2014, The State of Alaska, Department of Natural Resources (DNR), Division of Agriculture (DoAg) resumed responsibility for the Alaska Certified Seed Potato Program. The Alaska Seed Growers, Inc. (ASGI) voted to terminate the MOU between DNR and ASGI at their annual meeting held in February of 2013, effective December 31, 2013.

## B. AUTHORITY AND PURPOSE

1. Authority: Inasmuch as the Department of Natural Resources for the State of Alaska has the legislative authority to control the movement of seeds and other plant propagative parts into and within the State of Alaska (AS 03.05.010 and 03.05.030); and Inasmuch as the objective of the Division of Agriculture of the Department of Natural Resources is to promote the orderly development of agriculture in this state through various means including the promotion of top-quality seed.

2. Purpose: The Alaska Seed Potato Certification Program provides standards for the acquisition, maintenance and increase of top quality, disease tested propagative material. Varieties grown and distributed following these standards will help maintain varietal purity and minimize disease incidence. This program is based on a limited generation system that begins with disease tested seed stock which may be propagated through eight (8) field production years. Limited generation propagative materials, either from public or private agencies, may be accepted into the Alaska Seed Potato Certification Program at the appropriate seed class, field year and/or disease status. Appropriate documentation must be provided at time of application. Certification is a voluntary program designed to encourage production and use of top-quality seed. The State of Alaska, Department of Natural Resources, Division of Agriculture (DoAg) is committed to utilizing the best techniques and procedures for inspecting, testing, increasing and distributing seed. Participating growers voluntarily agree to follow the certification standards. Adherence to the standards contributes to the stability and health of the potato industry.

## C. AGENCY RESPONSIBILITIES- Alaska Division of Agriculture (AK DoAg)

1. Seed Potato Production is responsible for:
  - a. Acquiring and maintaining disease-free tissue culture source of appropriate potato varieties as needed.
  - b. Conducting rapid increase of tissue culture plants via nodal cutting or similar procedure based on annual orders placed by growers.
  - c. Annually producing, harvesting and storing Nuclear (N) stock seed in a controlled environment.
  - d. Distributing Nuclear (N) stock seed to fulfil orders placed previous year, along with appropriate certification records, after appropriate release testing has been successfully completed.

- e. Periodic field planting of maintenance collection and maintaining a brief plant/tuber description of material in the collection.
- f. Seed Potato Production Contact:  
Mickenzie Erickson, Microbiologist 2  
907-745-4469  
[mickenzie.erickson@alaska.gov](mailto:mickenzie.erickson@alaska.gov)

2. Certification is responsible for:

- a. Updating the Seed Potato Certification Handbook and Application as needed.
- b. Determining acceptability of applications received and eligibility of seed entered into certification.
- c. Calculating and invoicing certification and tag fees.
- d. Conducting field and storage inspections.
- e. Annually assigning lot numbers to seed lots passing field certification.
- f. Annually generating a directory of certified seed potato growers and varieties.
- g. Printing and issuing official certification tags and bulk certificates upon request and after storage inspections have been conducted.
- h. Certification Contact:  
Meret Beutler, Natural Resource Specialist 2  
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## D. CERTIFICATION STANDARDS

1. Applications

- a. By applying for certification, seed potato growers are granting access for state inspectors (or their designees) to inspect certifiable fields and seed storage facilities.
- b. Application forms are available by May 1<sup>st</sup> from the AK DoAg. Information and assistance relating to completion of application forms will be provided by the AK DoAg upon request.
- c. Completed applications must be returned to the AK DoAg on or before June 15. Late applications may be rejected. Determination of accepting a late application will be based on the availability of the inspector to perform the inspections. Additional certification fees may be assessed depending on the time and cost to perform the inspections.
- d. The AK DoAg reserves the right to reject certification applications based on the following reasons:
  - 1) Unacceptable lots. (See 3. Seed Stock Eligibility)
  - 2) Incomplete or improperly completed applications.
  - 3) Incomplete or imprecise farm maps. Farm maps showing the location and dimensions of seed lot (including variety name and generation) must accompany application.
  - 4) Lack of documentation; Blue tag, North American Health Certificate (NAHC), licensing agreements, etc.
  - 5) Late applications.
  - 6) Outstanding Certification fees.
  - 7) Any other reason that hinders the ability of the AK DoAg to process the applications.

2. Certification Fees

- a. Fees will be calculated after the application is filed, and lots are verified during the summer field inspections. Fees are due by the storage inspection, payable to the State of Alaska.
- b. Fees are computed as follows: \$35 for the first acre or part thereof; plus \$6 per lot; plus \$25 per acre on total remaining acres.
- c. With respect to fees, Experimental (Exp) varieties will be assessed at the same rate.
- d. Blue Certified Seed Tags are \$0.10/ tag.

3. Seed Stock Eligibility

- a. All seed stocks entered for certification must be disease tested and meet the eligibility standards contained in these standards.
- b. Alaska seed stocks are eligible for entry into the certification system if they meet the limited generation system requirements and have passed the previous year's field and storage inspections.
- c. Out-of-state grown certified seed stocks are eligible for entry into the Alaska certification system if they meet the Alaska disease tolerances (See 10. Disease Tolerances (Percentages) at Final Field Inspection) and limited generation requirements (See E. APPENDICES, 1. Seed Categories- Seed Class- Field Year. A North American Health Certificate from the state or province/ country of origin is required to accompany application. In addition to this, out-of-state seed stocks must be in compliance with the Contagious Diseases, Late Blight and Columbia Root Knot Nematode Quarantine (See E. APPENDICES, 3. Quarantines).
- d. Proprietary and Protected Varieties are eligible for certification if the grower has obtained and provided to the AK DoAg appropriate permissions and licensing agreements.
- e. Varietal Eligibility

1) A new variety is eligible for certification if the following information is available:

- a) Evidence of performance, including yield data, disease resistance or other factors supporting the identity of the variety.
- b) A statement of origin.
- c) A description of morphological characteristics.
- d) Written permission for use, if exclusive rights to the variety are possessed by some firm or individual other than the applicant.

2). Experimental varieties:

- a) Seed lots of varieties or lines not eligible for certification by the criteria listed in 1) a)-c) above may be accorded inspection under the standards and criteria enumerated in this publication, and similar fees paid. If the seed meets Alaska Seed Potato Certification standards, compliance may be indicated by tagging the seed with official tags, but bearing the designation "Exp".
- b) Special consideration will be given to seed with no or limited description. The visual inspection of such seed carries risk. The symptom expression of potentially diseased plants is unknown. A description of the varieties will be developed as information is collected.

4. Field Management

- a. Failure to comply with field management criteria may result in downgrading or disqualification, whichever is appropriate.
- b. Isolation:

- 1) In the field, there shall be a physical separation of at least 50 feet between lots of certified seed and potatoes not entered for certification.
  - 2) There should be a physical separation of at least 10 feet and/or a clear demarcation between lots of certified seed.
  - 3) There should be a physical separation of at least 10 feet between lots of home use seed and lots of potatoes not entered for home use seed.
- c. Field History Requirements: No potatoes previous year.
- d. Roguing:
- It is recommended that roguing begin as early, and be done as often, as circumstances dictate. Rogued plants are to be removed from the field in total (vines, seed pieces and newly formed tubers) and be buried or destroyed. Any lot that has been rogued in excess of 5% will be disqualified from certification, except that roguing in excess of 5% for varietal mix may be allowed with approval from the AK DoAg Director.
5. Sanitation
    - a. Seed growers are encouraged to carefully clean and disinfect storage areas, storage containers, all machinery, equipment and tools used in their seed growing operation.
  6. Equipment Management
    - a. Equipment used for production (planting, harvesting, grading, etc.) of certified seed may not be used for the production of potatoes not entered into certification. Used equipment purchased for the purpose of seed production should be thoroughly cleaned and disinfected, prior to its first use for seed production.
    - b. Equipment used for planting, harvesting, grading, or handling of home use seed (home use indicates seed is to be utilized on the same farm upon which it was produced) may be used for non-certified potatoes, providing the equipment is thoroughly cleaned and disinfected prior to use on home use seed lots. Cleaning and disinfection in this case will be the responsibility of the grower. Seed lots designated as "home use" cannot be "seed for sale".
    - c. It is recommended that planting, harvesting, grading and handling equipment used for more than one lot of seed to be thoroughly cleaned and disinfected between lots.
    - d. Exchange or sharing of equipment among growers is discouraged.
  7. Storage
    - a. Certified seed potatoes may be neither kept nor graded in a storage containing potatoes not entered for certification. If two or more storages are combined in one structure, they must have separate entries and must be separated by a permanent solid wall with no connecting passage ways (ventilation, heating, cooling, etc.).
    - b. Home use seed may be kept in storage with potatoes not entered for home use seed, provided a tight wall (a barrier that will prevent the passage of potato tubers, tuber parts, and adherent debris) separates potatoes not entered for home use seed.
    - c. Different lots may be stored in the same storage; however, they must be separated from one another by tight walls.
    - d. All stored lots shall be clearly labeled by variety, seed class, and seed source (if two or more lots are of the same variety and field year).
    - e. Any evidence of contamination or co-mingling of lots may be cause for rejection.
  8. Inspections
    - a. Field Inspection

- 1) Whenever possible, inspector shall inform seed grower at least one day prior to field inspections.
- 2) A minimum of two field inspections shall be made each growing season. Additional inspections may occur.
- 3) Inspectors will utilize disposable footwear and tools or sterilize footwear and tools before and after each inspection.
- 4) Inspections shall be performed by walking through the fields in a predetermined, prescribed manner, visually examining the plants.
- 5) Disease percentages shall be derived from actual plant counts in the field, as follows:
  - a) First and second inspections - at least 100 plants per lot and 100 plants per acre shall be counted.
  - b) Inspections will consist of a 100% visual survey if plant counts are not sufficient.
- 6) All disease diagnosis shall consist of a visual examination. Samples may be collected in the field for further diagnostic examination to be tested in the lab or via field test kit at the discretion of the inspector. In the case of Bacterial Ring Rot caused by *Clavibacter michiganensis ssp. sepedonicus.*, a visual diagnosis must be confirmed by serology or other appropriate test.
- 7) Inspectors may refuse to inspect a field for any of the following reasons:
  - a) Recent application of hazardous chemicals that may present a health hazard to the inspector.
  - b) Extensive damage which seriously injures or impairs growth of the plants and causes unsatisfactory conditions for inspection.
  - c) Excessive amounts of weeds.
  - d) Any other condition which precludes or unreasonably limits inspection.
- 8) Confirmed identification of Bacterial Ring Rot on any seed farm is grounds for rejection of all certified seed lots grown on that farm. The diagnosis of Bacterial Ring Rot shall disqualify the farm upon which it is found from certified seed production until proof that adequate steps have been taken to assure that:
  - a) All potatoes on that farm have been disposed of.
  - b) All equipment and other surfaces that come in contact with potatoes have been thoroughly disinfected; and
  - c) Replacement certified seed potatoes eligible for certification have been obtained by the grower.

b. Storage Inspection

- 1) Inspectors shall contact growers to schedule storage inspections,
- 2) At minimum, one storage inspection will be conducted annually. This inspection is required prior to the issuance of tags for sale of seed potatoes in the spring and must be completed by May 1<sup>st</sup>. If a grower does not respond to the inspector's request to schedule the inspection and/ or fails to have the inspection completed by May 1<sup>st</sup> deadline, that grower's name may be removed from the Alaska Certified Seed Potato Directory and that seed will not be eligible for tags or recertification until storage inspection is completed. Additional fees may be assessed depending on the time and cost to perform the inspections.

- a) The storage inspection is to ensure compliance of storage requirements and to inspect the general condition of the seed potatoes. Improper or inadequate storage may be grounds for rejection of certification.
  - b) Confirmed identification of Bacterial Ring Rot in storage is grounds for rejection of all lots grown on that farm.
  - 3) Inspectors will utilize disposable footwear and tools or sterilize footwear and tools before and after each storage inspection.
  - 4) If a new storage facility will be utilized, it is recommended that the grower contact the inspector to ensure the storage facility is meeting the standards prior to storing seed potatoes.
- c. Grading and Inspection
- 1) All certified seed is subject to inspection at the time of grading.
  - 2) Inspectors will utilize disposable footwear and tools or sterilize footwear and tools before and after each inspection.
  - 3) All certified seed potatoes, except contract grade, grown and certified in Alaska shall meet the requirements of U.S. No. 1 Seed Potatoes at shipping point. (See E. APPENDICES, 4. US Grade Standards for Seed Potatoes). Contract Grade shall consist of potatoes that meet all the requirements of grade and condition established by a buyer-seller agreement.
  - 4) Seed potatoes shall not be washed.
  - 5) Bulk containers shall be thoroughly cleaned and sterilized prior to use. Other containers (sacks, cardboard boxes, etc.) shall be new.
  - 6) Confirmed identification of Bacterial Ring Rot is grounds for rejection of all lots grown on that farm.
- d. Appeal/Waiver Procedure
- 1) Growers may file an appeal or waiver on an inspection and/ or final certification decision.
  - 2) The grower must mail a signed letter which must be forwarded to the Director of the AK DoAg. Email letters are acceptable if the sender is clearly identifiable. A final decision by the Director will be determined 10 business days after receipt.
  - 3) If a person is aggrieved by a decision of the Director and is otherwise eligible to seek the commissioner's review of the decision, the person may appeal to the Commissioner of the Department of Natural Resources.
9. Blue Tags and Bulk Certificates
- a. All sacks or master containers shall have an attached Blue Certification Tag issued by the AK DoAg. Master containers shall not exceed 105 lbs. gross weight.
  - b. Bulk bins shall have a Certification Tag or Bulk Certificate accompany the lot or load.
  - c. Blue tags will not be issued for "home use" seed, as home use seed is not produced for sale. (See D. CERTIFICATION STANDARDS, 12. Emergency Clause, for exception).
  - d. For Alaska potato labeling requirements, See E. APPENDICES, 5. Potato Labeling Regulations for additional information.

10. Disease Tolerances (Percentages) at Final Field Inspection:

Factor	FY1	FY2	FY3	FY4	FY5-8
Spindle Tuber (PSTV)	0	0	0	0	0
Bacterial Ring Rot (BRR)	0	0	0	0	0
Potato Leaf Roll Virus (PLRV)	0	0.1	0.1	0.1	0.1
Potato Virus Y (PVY)	0	0.1	0.1	0.1	0.1
Potato Virus X (PVX) visible	0	0.1	0.2	0.2	0.2
Blackleg	0	1	1	2	2
Rhizoctonia	0.5	1	1	1	2
Varietal Mixture	0	0	0	0.1	0.1

Potato Wart, Golden, Pale Cyst and Root Knot Nematode are federally regulated, and are not known to occur in Alaska, therefore, there is a 0% Tolerance in Alaska Certification. The detection of any insect, nematode, disease in seed potatoes of which are federal regulated is cause for rejection.

Please Note: Downgrading will occur if disease tolerances exceed those listed for a generation.

11. Certified Seed Potato Directory

A directory of certified seed potato growers and varieties will be generated and made available annually, by the AK DoAg. Only growers who identify on the application that they would like their farm in the Certified Seed Potato Directory and seed lots meeting field certification will be listed. The Directory is typically available by February 1<sup>st</sup>, however, final certification status is determined once storage inspections are complete.

12. Emergency Clause

In the event that supplies of certified seed is not available, a certified seed potato emergency may be declared by the Director of AK DoAg, in which case, growers of home use seed may request permission to sell seed potatoes. In order to sell home use seed, a home use seed grower must have passed all field and storage inspections for that seed lot, related to the previous crop year. Qualifying seed will be sold as Field Year 8 (FY-8).

13. Disclaimer of Warranty

Certified seed potatoes have been subjected to field and storage inspections pursuant to the Certified Seed Potato Certification Handbook prepared by the Alaska Division of Agriculture. The seller and the Alaska Division of Agriculture make NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUALITY, OR ABSENCE OF DISEASE CONCERNING SAID SEED POTATOES. The certification tag or bulk certificate pertaining to any certified seed potatoes indicates that, at the time of inspection, the potatoes met the requirements for certification as set forth in the Seed Potato Certification Handbook. BY ACCEPTANCE OF THE SEED POTATOES, BUYER EXPRESSLY AGREES THAT ITS EXCLUSIVE REMEDY FOR ANY BREACH OF DUTY OWED IN REGARD TO CERTIFICATION SHALL BE LIMITED SOLELY AND EXCLUSIVELY TO A RETURN OF THE PURCHASE PRICE PAID BY BUYER FOR SAID SEED. This disclaimer of warranty and limitation of liability and remedy may not be altered or amended except by an instrument in writing and then only as to those specifically and expressly agreeing to the terms of said instrument. By acceptance of the seed potatoes, buyer agrees that the disclaimer and limitations described herein are express

conditions of sale, and that they constitute the entire agreement between parties regarding warranty, liability or remedy.

E. APPENDICES

Appendix 1

Seed Categories- Seed Class Produced- Field Year

Mother plants<sup>1</sup>- Initial invitro plants from which Prenuclear (PN) Plantlets are derived.

Planted as:	Seed Class Produced:	Field year
Prenuclear (PN) Lab	Nuclear (N) – greenhouse mini tubers	NA
Field Planted as:	Harvested as:	
N	Field Year 1 (FY1)	first
FY1	Field Year 2 (FY2)	second
FY2	Field Year 3 (FY3)	third
FY3	Field Year 4 (FY4)	fourth
FY4	Field Year 5 (FY5)	fifth
FY5	Field Year 6 (FY6)	sixth
FY6	Field Year 7 (FY7)	seventh
FY7	Field Year 8 <sup>2</sup> (FY8)	eight

<sup>1</sup> Plants are tested and examined for the presence of detectable, pathogenic microorganisms (viruses, bacteria, fungi), and may be subjected to purification procedures, if no pathogens are detected, individual plants are qualified as mother plants

<sup>2</sup> FY-8 is not eligible for recertification.

## Appendix 2 Definitions

1. Bacterial Ring Rot - A disease caused by *Clavibacter michiganensis ssp.sepedonicus*.
2. Blackleg - Disease caused by the bacterium *Pectobacterium atrosepticum* (formerly known as *Erwinia carotovora ssp. atroseptica* or *Pectobacterium carotovorum ssp. Carotovorum* (formerly known as *Erwinia carotovora ssp. carotovora*).
3. Disease tolerance - A specific level of a particular disease permitted to exist in certified seed stocks.
4. Downgrading- The process of changing the seed class designation of a seed lot. This is due to failing to meet a specific tolerance of the field year for which the seed was entered into certification. The seed lot is given the next appropriate later seed class for which the seed lot does not exceed the field year tolerance.
5. Home use- Production of seed solely for the purpose of planting a commercial crop on the same farm on which the seed was produced. Tags are not issued for seed produced under "home use" guidelines. "Home use" seed is not eligible for "for sale".
6. Lot number- A lot number identifies seed potatoes by crop year, grower, variety, **seed class** and location and is assigned after passing field certification which permits a trace back to their sources.
7. Master container- A package containing two or more individual packages of the same commodity in the same quantity.
8. Roguing- The removal and destruction of diseased or undesirable plants (including seed pieces, foliage, and tubers) from a certified potato seed field.
9. Seed Farm- A seed farm is an independent operation which includes all land, equipment and storage facilities.
10. Storage- A space or place for storing certified potato seed.
11. Tight wall- A barrier that will prevent the passage of potato tubers, tuber parts, or adherent debris.
12. Zero tolerance- In the case of all diseases or conditions warranting a 0.0% tolerance, it indicates that the disease or condition was not visually observed during the inspection process. The 0.0% tolerance is not intended, nor may it be construed to mean that the lot inspected is free from the designated disease or conditions.

Appendix 3  
Quarantines

1. Exterior Quarantine of Certified Seed Potatoes

Authority: AS 03.05.010, AS 44.37.030, 11AAC 34.075, 11AAC 34.130, 11AAC 34.150, 11AAC 34.170

Establishment of a Quarantine: The Director of the Division of Agriculture, under Statutory Authority as the State Quarantine Officer, hereby establishes a quarantine at the Alaska Boundaries to prevent the entry of contagious diseases of potatoes.

Regulated Pests: Contagious Diseases of Potatoes

Regulated Areas: All States and Countries

Regulated Commodities: Certified Seed Potatoes

Restrictions: Certified seed potatoes may not be imported into Alaska unless accompanied by a North American Health Certificate or Official Certificate, certified by the State or Country Official Seed Certifying Agency that demonstrates each lot and field generation from the previous production year, does not exceed the Alaska Certified Seed Potato Program disease tolerances at final field inspection.

Disposition of Violations: All shipments of commodities in violation of this quarantine, shall be immediately shipped out of state or destroyed by a method approved by the Director of the Division of Agriculture. All costs for shipment out of state or destruction shall be performed at the expense of the owner, owners or duly authorized agent.

2. COLUMBIA ROOT-KNOT NEMATODE QUARANTINE

PEST: Columbia Root-knot Nematode (*Meloidognye chitwoodi* Golden et.al.)

STATES REGULATED: The entire states of WA and ID; in CA the counties of Siskiyou and Modoc; in NV the county of Humboldt; in OR the counties of Morrow, Umatilla, Klamath, Lake and Malheur and other counties found infested in OR, NV and CA.

MATERIALS REGULATED: Potato tubers (including seed and table stock), used containers, bags, appliances, grading and storage equipment, used farm equipment, implements and harvesters.

RESTRICTIONS: Potato tubers intended for seed, produced in the quarantine area are prohibited entry. Potato tubers produced in non-quarantine counties in OR, NV, or CA are admissible provided that they are certified as not exceeding 0% tolerance for the presence of *M. chitwoodi* based on survey data or representative sampling. Potato tuber intended as table stock where surface or internal defects do not exceed 0% for nematode damage and the potatoes are treated with a sprout inhibitor if shipped January 1 through May 30. Potatoes for table stock from other counties in OR, NV and CA may not exceed 1% surface or internal defects for damage by nematode. All used containers, bags, appliances, grading and storage equipment, used farm equipment, implements and harvesters must be certified free from soil and related debris.

3. EXTERIOR QUARANTINE AGAINST POTATO LATE BLIGHT

Authority: AS 03 05.010, AS 03 05.030, AS 44.32.030

Establishment of a Quarantine: The Director of the Division of Agriculture under the authority as the State Quarantine Officer, hereby establishes a quarantine at the Alaska boundaries to prevent the entry of commodities into the state infected with Potato Late Blight.

PEST: Potato Late Blight (*Phytophthora infestans*)

STATES REGULATED: ALL

MATERIALS REGULATED: Certified seed potatoes and seed potatoes including seed for home gardens; potato plants and tomato plants including all varieties of *Lycopersicon lycopersicum* and *L. pimpinellifolium*. Tomato seeds are not regulated articles.

RESTRICTIONS: Regulated articles are prohibited for entry into Alaska except under the following conditions:

A. Seed potatoes or potato plants:

- 1) are produced as certified seed potatoes in the state or country of origin and
- 2) are certified and
- 3) are inspected in storage and no late blight is found in the lot and
- 4) are inspected at the shipping point and no late blight is found.

B. Tomato plants

- 1) must be grown in a nursery/greenhouse inspected and found free of late blight; and
- 2) must be inspected at the shipping point and no late blight is found; and
- 3) must be treated prior to shipment with a registered fungicide for late blight disease control.

Each shipment of regulated articles into Alaska shall be accompanied by an official certificate issued by the government regulatory agency in the state or country of origin assuring that the conditions of this quarantine have been met.

Please Note: Seed potatoes, potato and tomato plants that do not meet the above requirements are prohibited.

Appendix 4  
US Grade Standards for Seed Potatoes

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United States Standards for Grades of Seed Potatoes  
Effective March 6, 1987  
(Reprinted- January 1997)

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51.3000 General.

51.3001 Grade.

51.3002 Tolerances.

51.3003 Application of tolerances.

51.3004 Samples for grade and size determination.

51.3005 Definitions.

51.3006 Classification of defects.

§51.3000 General.

Compliance with the provisions of these standards shall not excuse failure to comply with provisions of applicable Federal or State Laws.

§51.3001 Grade.

"U.S. No. 1 Seed Potatoes" consist of unwashed potatoes identified as certified seed by the state of origin by blue tags fixed to the containers or official State or Federal State certificates accompanying bulk loads, which identify the variety, size, class, crop year, and grower or shipper of the potatoes, and the State certification agency. These potatoes must meet the following requirements:

(a) Fairly well shaped

(b) Free from:

- (1) Freezing injury;
- (2) Blackheart;
- (3) Late Blight Tuber Rot;

- (4) Nematode or Tuber Moth injury;
  - (5) Bacterial Ring Rot;
  - (6) Soft rot or wet breakdown; and,
  - (7) Fresh cuts or fresh broken-off second growth.
- (c) Free from serious damage caused by:
- (1) Hollow Heart; and,
  - (2) Vascular ring discoloration.
- (d) Free from damage by soil and any other cause. (See §51.3005 - 06).
- (e) Size:
- (1) Minimum diameter, unless otherwise specified, shall not be less than 1-1/2 inches (38.1 mm) in diameter;
  - (2) Maximum size, unless otherwise specified, shall not exceed 3-1/4 inches (82.6 mm) in diameter or 12 ounces (340.20 g) in weight.
- (f) Tolerances. (See §51.3002).

§51.3002 Tolerances.

In order to allow for variations incident to proper grading and handling in the foregoing grade, the following tolerances, by weight, are provided as specified.

(a) For defects:

- (1) 10 percent for potatoes in any lot which are seriously damaged by hollow heart;
- (2) 10 percent for potatoes in any lot which are damaged by soil;
- (3) 5 percent for potatoes in any lot which are seriously damaged by vascular ring discoloration;
- (4) 11 percent for potatoes which fail to meet the remaining requirements of the grade including therein not more than 6 percent for external defects and not more than 5 percent for internal defects: Provided, that included in these tolerances not more than the following percentages shall be allowed for the defects listed:

	Percent
Bacterial Ring Rot . . . . .	0.00
Serious damage by dry or moist type Fusarium Tuber Rot . . . . .	2.00
Late Blight Tuber Rot . . . . .	1.00
Nematode or Tuber Moth injury . . . . .	0.00
Varietal mixture . . . . .	0.25
Frozen, soft rot or wet breakdown . . . . .	0.50

Provided, that en route or at destination, an additional 0.50 percent, or a total of 1 percent, shall be allowed for potatoes which are frozen or affected by soft rot or wet breakdown.

(b) For off-size:

- (1) For undersize: 5 percent for potatoes in any lot which fail to meet the required or specified minimum size.
- (2) For oversize: 10 percent for potatoes in any lot which fail to meet the required or specified maximum size.

§51.3003 Application of tolerances.

Individual samples (See §51.3004) shall not have more than double the tolerances specified, except that at least one defective and one off-size potato may be permitted in any sample; Provided, that en route or at destination, one-tenth of the samples may contain three times the tolerance permitted for potatoes which are frozen or affected by soft rot or wet breakdown; and provided further, that the averages for the entire lot are within the tolerances specified for the grade.

§51.3004 Samples for grade and size determination.

Individual samples shall consist of at least 20 pounds (9.06 kg). The number of such individual samples drawn for grade and size determination will vary with the size of the lot.

§51.3005 Definitions.

(a) "Fairly well shaped" means that the potato is not materially pointed, dumbbell-shaped or otherwise materially deformed.

(b) "Nematode or Tuber Moth injury" means the presence of, or any evidence of, Nematode or Tuber Moth.

(c) Soil:

(1) "Fairly clean" means that at least 90 percent of the potatoes in the lot have no more than 10 percent of the surface covered with caked soil.

(2) "Damage by soil" means that caked soil covers more than 25 percent of a potato's surface.

(3) "Loose soil" -- A lot of seed potatoes is not considered damaged by the presence of loose soil, clods, rocks, vines, and foreign material, but such will be considered a tare factor if the following allowances are exceeded:

8 ounces (226.80 g) in a 100 pound (45.3 kg) container.

4 ounces (113.40 g) in a 50 pound (22.65 kg) container.

2 ounces (56.70 g) in a 25 pound (11.33 kg) container or less.

1 percent in a bulk load.

(d) "Shriveling" -- Damage by shriveling means that the individual potato is more than moderately shriveled, spongy or flabby.

(e) "Freezing injury" means that the potato is frozen or shows evidence of having been frozen. (f) "Soft rot or wet breakdown" means any soft, mushy or leaky condition of the tissue.

(g) "Zero Tolerance" (0.00) means none found during the normal inspecting procedures. Certification of a lot is not a guarantee that the lot inspected is free of a zero tolerance disease or injury.

(h) "Damage" means any defect or any combination of defects which materially detracts from the internal or external appearance of the potato, or any external or internal defect which cannot be removed without a loss of more than 5 percent of the total weight of the potato (See §51.3006).

(i) "Serious damage" means any defect or any combination of defects which seriously detracts from the internal or external appearance of the potato, or any internal or external defect which cannot be removed without a loss of more than 10 percent of the total weight of the potato (See §51.3006).

(j) "External defects" are defects which can be detected by examining the surface of the potato. Cutting may be required to determine the extent of the injury (See §51.3006, Table I).

(k) "Internal defects" are defects which cannot be detected without cutting the potato (See §51.3006, Table II).

(l) "Permanent defects" are defects which are not subject to change during storage or shipment.

(m) "Condition defects" are defects which may develop or change during storage or shipment.

§51.3006 Classification of defects.

(a) Brown discoloration following skinning, dried stems, flattened depressed areas (showing no underlying flesh discoloration), greening, skin checks and sunburn do not affect seed quality and shall not be scored against the grade.

(b) TABLE 1 –External Defects

X-indicates method of scoring unless otherwise noted

Defect	Damage	
	When materially detracting from the appearance of the potato	or When removal causes a loss of more than 5 percent of the total weight of the potato
Air cracks		X
Bruises		X
Cuts and broken-off second growth (healed)	X	X
Elephant hide (scaling)	X	
Enlarged, discolored or sunken lenticels	X	
Folded ends	X	
Second growth	X	
Shriveling	When more than moderately shriveled, Spongy, or flabby	
Sprouts	When more than 20 percent of the Potatoes in any lot have any sprout more than 1 inch (25.4 mm) in length.	
Surface cracking	X	X
Flea beetle injury	X	X
Grub damage	X	X
Rodent and/ or bird damage	X	X
Wireworm or grass damage	Any hole more than 3/4 inch (19,1mm) long or when the aggregate length of all holes are more than 1-1/4 inches (31 mm) <sup>1</sup>	
Dry rots		X
Rhizoctonia	X	
Scab, pitted	X	X
Scab, russet	When affecting more than 1/3 of the surface	
Scab, surface	When affecting more than 5 percent of the surface	
Silver Scurf	When affecting more than 25 percent of the surface	
Growth cracks	When seriously detracting from the appearance	
Pressure bruises and sunken Areas with underlying flesh discolored		When removal causes a loss of more Than 10 percent of the total weight

<sup>1</sup> Definitions of damage and serious damage are based on potatoes that are 2-1/2 inches (63.5 mm) in diameter or 6 ounces (170.10 g) in weight. Correspondingly lesser or greater areas are permitted on smaller or larger potatoes.

(c) Table II- Internal Defects.

Defect	Damage	
	When materially detracting from the appearance of the potato	or When removal causes a loss of more than 5 percent of the total weight of the potato
Ingrown Sprouts		X
Internal Discoloration occurring interior to the vascular ring (such as, Internal Brown Spot, Mahogany Browning and Heat Necrosis).	When more than the equivalent of three scattered light brown spots 1/8 inch (3.2 mm) in diameter <sup>1</sup>	

All other internal discoloration confined to the vascular ring.	X
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<sup>1</sup> Definitions of damage and serious damage are based on potatoes that are 2-1/2 inches (63.5 mm) in diameter or 6 ounces (170.10 g) in weight. Correspondingly lesser or greater areas are permitted on smaller or larger potatoes.

Defect	Serious Damage	
	When seriously detracting from the appearance of the potato	or When removal causes a loss of more than 10 percent of the total weight of the potato
Internal Discoloration confined to the Vascular Ring	X	
Hollow Heart or Hollow Heart with Discoloration	When affected area exceeds that of a circle 3/4 inch (19.1mm) in Diameter. <sup>1</sup>	

<sup>1</sup> Definitions of damage and serious damage are based on potatoes that are 2-1/2 inches (63.5 mm) in diameter or 6 ounces (170.10 g) in weight. Correspondingly lesser or greater areas are permitted on smaller or larger potatoes.

Appendix 5  
Potato Labeling Regulations

11 AAC 32.050. Label required

(a) Except as provided in 11 AAC 32.080, each container of potatoes sold, offered, or displayed for sale for general consumption must be conspicuously and legibly labeled in the English language to show the following information:

- (1) common name of the product, unless the container is transparent and the product is easily and readily identifiable through the container;
- (2) name and address, including zip code, of the grower or packer;
- (3) net weight; and
- (4) grade of potatoes, in letters not less than one inch in height on containers holding 24 pounds or more, and in letters not less than one-half inch in height on containers holding less than 24 pounds.

(b) Potatoes represented as seed potatoes must, in addition to the requirements of (a) of this section, have attached to each container or display the applicable certification tag or identification issued by the official certification agency of the state or country of origin.

(c) Except as provided in 11 AAC 32.080, a master container must be labeled to show the following information:

- (1) product name;
- (2) net weight of the product; and
- (3) name and address, including zip code, of the grower or packer.

(d) All previously used labels on a used container must be completely removed or obliterated, but a permanently labeled used sack may be turned inside out.

(e) A firmly attached shipping tag may be used for labeling on plain or turned sacks.

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AS 03.05.03