



LE-MAKING ORDER
(RCW 34.05.360)

Adm. Order 4014

CR-103 (10/1/89)

Agency: Agriculture

- Permanent Rule
- Emergency Rule

(1) Date of adoption: 10/16/92 UM

(2) Purpose:
To clarify and strengthen the rules for the production of Foundation and Limited Generation certified seed potatoes.

(3) Citation of existing rules affected by this order:

- Repealed:
- Amended: WAC 16-324
- Suspended:

(4) Authority for adoption:

- Statute: RCW 34.05 and RCW 15.14
- Other Authority:

(5.1) PERMANENT RULE ONLY

Pursuant to notice filed as WSR 92-18-104 on September 2, 1992 (date).
Describe any changes other than editing from proposed to adopted version:

(5.2) EMERGENCY RULE ONLY

Pursuant to RCW 34.05.350 the agency for good cause finds:

- (a) That immediate adoption, amendment, or repeal of a rule is necessary for the preservation of the public health, safety, or general welfare, and that observing the time requirements of notice and opportunity to comment upon adoption of a permanent rule would be contrary to the public interest.
- (b) That state or federal law or federal rule or a federal deadline for state receipt of federal funds requires immediate adoption of a rule.

Reasons for this finding:

(5.3) Any other findings required by other provisions of law as precondition to adoption or effectiveness of rule?

- Yes No If yes, explain:

(6) Effective date of rule:

Permanent Rules

Emergency Rules

- 31 days after filing
- Other (specify) _____ *
- Immediately
- Later (specify) _____

*(If less than 31 days after filing, specific finding in 5.3 under RCW 34.05.380(3) is required)

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STATE OF WASHINGTON
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NAME (TYPE OR PRINT)

C. Alan Pettibone

SIGNATURE

Handwritten signature of C. Alan Pettibone

TITLE

Director

DATE

10-21-92

NEW SECTION

WAC 16-324-700 Establishing the fee schedule. Pursuant to the authority provided in RCW 15.14.100, the following fees in WAC 16-324-110 through 16-324-750 are established for disease testing of certified seed potatoes.

NEW SECTION

WAC 16-324-710 Schedule of fees--Billing policies and procedures. (1) All billable services provided under this chapter are due and payable upon billing by the department. For the convenience of established accounts and in accord with good business practices, the department provides a monthly billing. Accounts not paid in full within thirty days of billing shall be considered delinquent.

(2) All delinquent accounts shall be assessed a late charge equal to one percent per month, or portion of a month, on the unpaid balance.

(3) Except for established accounts where there is a reasonable expectation of additional charges during a calendar month, the minimum billable amount through the monthly billing system shall be twenty dollars. All billable services of less than twenty dollars shall be due and payable on the date that service is rendered.

(4) No person with an account ninety days or more in arrears shall receive service except on the basis of payment in full at the time service is rendered. Such accounts shall not be restored to monthly billing status until all past due amounts are paid-in-full. Such accounts may be subject to legal action for collection.

(5) Accounts that become ninety days or more in arrears twice within a five-year period may be subject to a permanent requirement for payment in full at the time service is provided.

NEW SECTION

WAC 16-324-720 ELISA testing for potato viruses--Fees. (1) The following fees shall apply to ELISA testing to determine the presence of Potato Virus A (PVA), Potato Virus M (PVM), Potato Virus S (PVS), Potato Virus X (PVX), Potato Virus Y (PVY), and Potato Leaf Roll Virus (PLRV):

# viruses	# samples	price/leaf sample	price/tuber sample
1	1 to 10	\$1.00	\$1.10
	11 to 25	\$0.90	\$1.00
	over 25	\$0.80	\$0.90
2	1 to 10	\$1.50	\$1.60
	11 to 25	\$1.30	\$1.40
	over 25	\$1.10	\$1.20
3	1 to 10	\$2.00	\$2.10
	11 to 25	\$1.70	\$1.80
	over 25	\$1.40	\$1.50
4	1 to 10	\$2.50	\$2.60
	11 to 25	\$2.10	\$2.20
	over 25	\$1.70	\$1.80
5	1 to 10	\$3.00	\$3.10
	11 to 25	\$2.50	\$2.60
	over 25	\$2.00	\$2.10
6	1 to 10	\$3.50	\$3.60
	11 to 25	\$2.90	\$3.00
	over 25	\$2.30	\$2.40

(2) Spindle Tuber Viroid testing shall be provided at the actual cost of time at twenty-five dollars per hour plus materials.

(3) Other virus tests not listed in subsection (1) of this section may be provided at actual cost of time at twenty-five dollars per hour plus materials.

NEW SECTION

WAC 16-324-730 ELISA testing for the presence of bacteria--Fees. The fee for ELISA testing for the presence of bacterial ringrot (*Clavibacter michiganensis* subsp. *sepedonicum*) and *Erwinia c. subsp. atroseptica*, per sample \$1.20

NEW SECTION

WAC 16-324-740 Entry level primary test--Fees. (1) Crystal violet pectate test for *Erwinia* sp., per sample \$2.50
 (2) Nutrient - Yeast extract broth for bacteria, per sample \$2.50

NEW SECTION

WAC 16-324-750 Tests for bacterial ringrot--Fees. (1) Gram stain test for bacterial ringrot, per sample \$3.75
(2) Bioassay (host plant indexing) to confirm bacterial ringrot, per sample \$5.00

AMENDATORY SECTION (Amending Order 2020, filed 11/16/89, effective 12/17/89)

WAC 16-324-360 Definitions. The definitions set forth in this section shall apply throughout this chapter, unless the context otherwise requires:

(1) "Department" means the department of agriculture of the state of Washington.

(2) "Director" means the director of the department of agriculture or his duly appointed representative. (Inspector)

(3) "Potatoes" mean Irish potatoes that have been produced outside of or within the state of Washington and are being handled for seed purposes, propagation, or reproduction within the state of Washington.

(4) "Disease tested" means tested for potato viruses, PVA, PVM, PVS, PVX, PVY, leafroll, spindle tuber viroid, Erwinia carotovora carotovora, Erwinia carotovora atroseptica and Corynebacterium sepedonicum.

(5) "Nematode" means a disease (infestation) of plant parasitic nematodes of potatoes including but not limited to the genera *Meloidogyne*.

(6) "Micropropagated" means potato stock propagated using aseptic laboratory techniques and culture media to promote plant tissue growth.

(7) "In vitro" means in an artificial environment outside the living organism.

(8) "Prenuclear" means micropropagated plants in vitro or tubers in vitro. Also included are (~~micropropagated~~) plants or (~~microtubers~~) minitubers produced in a greenhouse.

(9) "Nuclear stock" means plantlets, microtubers, minitubers, or seed potatoes produced from pre-nuclear stock, and grown in the field for the first time.

(10) "Microtubers" means tubers produced in vitro by a micropropagated plant or plantlet.

(11) "Minitubers" means tubers produced under controlled greenhouse conditions.

(12) "Tuber unit" means a method of planting whereby cut seed pieces from one tuber are dropped consecutively in a row.

(13) "Hill unit" means a method of planting whereby all tubers from one plant are dropped consecutively in a row.

(14) "Family unit" means a method of planting whereby pre-nuclear stock made up of various family lines are mass planted in recognizably separate plots limited to the size and number of plants per plot.

(15) "Cull" means any lot of potatoes rejected for certification for any reason. Seed lots failing to meet the minimum requirements of Washington state's rules and standards for certification shall be considered as culls.

(16) "Trace" means a barely perceivable indication of plant disease that amounts to less than 0.001 percent.

(17) "Rogue" means a method of removing undesired plant specimens from a lot whereby all plant parts including vines,

tubers, and seed piece e completely removed fro. . field. Proper roguing for plant disease shall also include removing all plants and their parts immediately adjacent to the diseased suspect plant.

AMENDATORY SECTION (Amending Order 1951, filed 9/11/87)

WAC 16-324-390 Requirements for production of foundation and/or certified seed potato stock. (1) Land requirements.

(a) Potatoes shall not be eligible for certified class if planted on land on which potatoes were grown in either of the previous two years unless the prior crops were entered for and passed certification. Potatoes shall not be eligible for foundation class if planted on land on which potatoes were grown in any of the previous three years unless the prior crops are of the same variety that were entered for and passed certification.

(b) Any land known to be infested with parasitic potato nematode shall not be accepted.

(c) Any land planted with potatoes found to have ring rot shall not be eligible for planting for certified seed potato production for at least three years. Volunteers in a field with ring rot history shall disqualify the field for certification, modification of land history may be approved by the department when a cultural practice has been proven to be successful. Cultural practices may include, but is not limited to, mechanical means (such as deep plowing) and/or chemical means (such as fumigants or other material) for seed bed preparation. Materials and methods shall be a matter of record with the department. Whichever method is used, it shall be approved by the department and shall be adequate to maintain variety and disease purity. Plants outside of the defined row shall be construed as volunteers.

(2) Isolation requirements.

(a) Potatoes intended for certification shall be isolated by at least one hundred feet from other potatoes except potatoes entered for certification.

(b) A distinct separation of at least six feet shall be left unplanted or planted to some other crop between different lots of foundation class seed potatoes or varieties of potatoes that have so similar tuber type, color, skin, or shape characteristics that varietal mixture is not readily identifiable during the storage, sorting, and grading process. No separation shall be required between lots of a red variety and another variety with obviously different skin color. When more than one lot of seed potatoes are planted in the same field, each lot shall be so marked that any inspector not previously having been at the location can identify each lot.

(c) When ring rot is found in a field planted with more than one lot of seed, the entire field shall be rejected unless at least six feet has been left unplanted or planted to some other crop between lots.

(d) In the suspected presence of bacterial ring rot disease in plants and tubers, or nematode infestation of tubers, samples shall be submitted to a Washington state department of agriculture approved laboratory for testing. Samples may be sent to more than

one laboratory to determine the presence or absence of bacterial ring rot disease and nematode infestation.

(3) Planting stock. Eligible planting stock shall consist of foundation seed potatoes or seed stock approved by the department.

(a) Foundation seed is tubers that have met field standards and winter test standards for foundation seed.

(b) Desirable planting stock of known history and varietal purity may be accepted. This stock shall have been produced the preceding year under the special observation of the department. Stock under observation by the department shall pay the usual certification fees.

(c) Planting stock from other states or countries is eligible for certification if the planting stock has met the requirements for foundation standards of their program.

(d) A seed stock or lot shall not be eligible for foundation classification if blending two different sources of seed.

(e) A seed stock or lot shall not be eligible for certification if planted with culls.

(f) Seed grown in the foundation program is limited to a maximum of six field seasons.

	<u>Class</u>	<u>Class</u>
<u>Foundation Seed Program</u>	<u>(Foundation)</u> <u>Greenhouse or</u> <u>winter test</u> <u>required sixth</u> <u>field season</u>	<u>Certified</u> <u>Greenhouse</u> <u>(winter)</u> <u>test not</u> <u>required</u>

(Foundation) seed would be the last generation eligible for recertification. PVX testing would be optional at grower's expense. However all Foundation Material would require a greenhouse test. Lots are not eligible for recertification after the sixth field season.

(4) Field inspections. Each lot shall be visually inspected on a sample basis. Lots shall be subjected to at least two inspections. The first inspection shall be made before the rows have filled in or the vines touch in the row. The lots shall be traversed sufficiently to accurately evaluate the factors to be considered with a minimum sample of one hundred plants per acre. Lots shall be considered ready for inspection at all times. Notification shall be given to grower or grower representative when inspection is to be performed. A second inspection shall be performed and the time of the inspection shall be determined by the variety and growing season. Additional inspections shall be made when deemed necessary. The grower shall be responsible for notifying the department of unusual field conditions which reflect premature dying, from any cause, prior to the final reading of the field.

(5) Russet Burbank/Netted Gem potatoes to be eligible for certification shall be within the field tolerances and the winter test tolerances set for certified seed potatoes. Shipments for export prior to January 15 may be certified based on field readings only.

(6) Miscellaneous requirements. Prospective growers entering the certification program for the first time shall be interviewed by the department before applications are processed. This is in order that the applicant knows what is expected and what may be expected from the certifying agency.

(7) Sanitation requirements. All equipment used in the cutting, planting, digging, storage, and grading process shall be sanitized between each lot and variety. Appropriate procedures for sanitizing shall include steam cleaning or use of a pressure washer to eliminate all dirt and dry matter followed by an application of an approved chemical to kill bacteria.

AMENDATORY SECTION (Amending Order 1897, filed 7/17/86)

WAC 16-324-400 Certified seed potato--Field inspection standards. (1) The field certification of each lot shall be based on the sample inspected.

(2) Specific requirements.

(a) The diseases tolerated shall be within the percentages listed in the table below based on visual symptoms showing in the sample inspected.

Field tolerances for: Inspection	Foundation		Certified	
	1	2-3	1	2-3
Leaf roll	0.2%	0.1%	0.4%	0.2%
Well defined Mosaic, and other virus and virus-like diseases	1.0%	0.5%	2.0%	1.0%
Black leg and wilts	2.0%	1.0%	4.0%	2.0%
Ring rot	0.0%	0.0%	0.0%	0.0%
<u>Powdery scab (Spongospora subterranea)</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%*</u>
Variety mixture	0.2%	0.0%	0.2%	0.1%

*Not allowed if found in field or during grading

(b) Diseases which cannot be observed visually at time of inspection may be present.

(c) The 0.0% tolerance for ring rot is chosen for reasons of convenience and practicality and is not to be construed to mean that the lot inspected is free from the disease. It does mean no ring rot was found during the inspection process.

(d) When ring rot is found in a lot of seed that lot shall be rejected. All seed potatoes grown that year by that farming operation from that same seed source, even if grown in different fields shall not be eligible for foundation classification. The tubers from these lots shall be inspected at time of digging.

(e) Lots not meeting field inspection standards at the time of inspection shall be rejected.

(f) Any field condition, i.e., weeds, frost, insect, disease, premature dying from any cause, or any condition making inspection evaluation impossible will be cause for the following actions:

(i) Inability to read at time of first field reading for virus, etc.--lots may be held for winter virus test.

(ii) At the discussion of the department, the inability to make the final reading for any reason may be cause for rejection from certification. Lots entered for foundation classification may not be eligible for recertification. The tubers from these lots shall be inspected at time of digging. Samples for winter test shall be submitted.

AMENDATORY SECTION (Amending Order 2020, filed 11/16/89, effective 12/17/89)

WAC 16-324-410 Winter test. (1) Purpose. The purpose of the winter test is to visually detect virus and viruslike plant symptoms in samples of the lot submitted by the grower.

(2) Details for submitting samples for winter testing will be available from the department. Lots which fail field inspection standards shall not be eligible for winter test.

(3) "Foundation" may be stamped on the department's official certified tags when a lot has passed the required field standards and winter test tolerances for foundation seed.

(4) Lots represented in winter tests which do not meet the certification requirements of the winter test will not be eligible for current year certification.

(5) In the event of serious malfunction of the winter test facility, foundation and certified eligibility may be based on field readings.

AMENDATORY SECTION (Amending Order 1587, filed 11/21/78)

WAC 16-324-420 Winter test tolerances. (1) The unit of certification will be each lot.

(2) Specific requirements. The diseases tolerated will be within the percentages listed in the table below, based on visual symptoms showing in the sample inspected(†). ELISA testing of samples shall be made upon request by the applicant at his or her expense.

Disease or defect	Foundation	Certified
Well defined mosaic ((and other virus or virus like diseases))	1.5%	2.0%
Leaf roll	0.5%	2.0%

(3) Diseases which cannot be observed visually at time of inspection may be present.

WAC 16-324-610 Limited generation certified seed potato--Land requirements. Land requirements in the L.G. certified seed potato program are as follows:

(1) Well water shall be the source of irrigation for pre-nuclear stock.

- (2) Class Produced Years out of potatoes (Unless prior crop was a higher class-same variety)
- Pre-nuclear Approved laboratory (greenhouse)
- Nuclear Six years (new ground preferred (~~7~~ fumigation required))
- Generation I Four years
- Generation II Two years out of potatoes unless prior crop was a higher class of same variety
- Generation III Two years
- Generation IV Two years.

WAC 16-324-630 Limited generation certified seed potato--Field inspection tolerances.

FIELD INSPECTION TOLERANCES: PERCENT DISEASES

Factor	NUCLEAR		GEN. I		GEN. II		GEN. III		GEN. IV	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Varietal mixture	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.08	0.05
Pvy mosaic	0.00	0.00	0.00	0.00	0.01	TR	0.50	0.25	0.50	0.25
Leafroll	0.00	0.00	0.00	0.00	0.01	TR	0.03	.010	.080	0.05
Blackleg	0.00	0.00	0.10	0.10	0.50	0.50	1.00	1.00	2.00	2.00
Ring rot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nematode	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spindle tuber viroid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total visible virus	0.00	0.00	0.10	0.00	0.20	0.10	2.00	1.00	2.00	1.00
PVX	0.00		0.50		1.00		3.00		4.00	

(1) Two or more visual inspections shall be made of each lot by the department. Fields shall be considered ready for inspection at all times.

(2) Leaf samples shall be submitted in late August for virus determination to an independent testing laboratory approved by the department. All classes entered for certification shall be PVX

tested. The cost of duplicate sample testing shall be borne by the applicant.

(a) The minimum number of plants per lot to be sampled for latent virus determination shall be one hundred; nuclear stock ten percent of the total number of plants per lot; Generation I two percent of the total number of plants per lot; Generation II fifty leaves per acre; Generation III and IV twenty leaves per acre. No more than ten plants shall be bulked per sample. The department may require additional testing when deemed necessary.

(b) Samples shall be labeled as to row and location within the row.

(c) If a positive test results on a virus sample, a retest at grower's expense of every plant after rouging infected area is acceptable.

(d) Any plant rogued and suspected of being contaminated with virus, *Erwinia carotavora* or *Corynebacterium sepedonicum* shall be submitted for testing.

(e) Bacterial ring rot found in a seed lot of a seed operation shall be cause for removing the lot from certification. A third or additional inspections shall be required on remaining seed lots. All other seed lots associated with or planted after the rejected lot shall not be eligible for recertification.

(3) A limited generation growers list shall be published annually after final field inspection showing the results, including bacterial ring rot.

(4) At the option of the grower, seed sources shall be represented in a seed lot source trial. The presence of bacterial ring rot in the sample shall be cause for rejection of seed lots planted from the same seed source by the grower submitting the sample.