

**PROPOSED REGULATION OF THE  
STATE DEPARTMENT OF AGRICULTURE**

**LCB File No. R036-01**

August 17, 2001

EXPLANATION – Matter in *italics* is new; matter in brackets ~~omitted material~~ is material to be omitted.

AUTHORITY: §§1-35, NRS 587.083.

**Section 1.** Chapter 587 of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 34, inclusive, of this regulation.

**Sec. 2.** *As used in sections 2 to 34, inclusive, of this regulation, unless the context otherwise requires, the words and terms defined in sections 3 to 19, inclusive, of this regulation have the meanings ascribed to them in those sections.*

**Sec. 3.** *“Applicant” means the person or entity that submits an application for certification.*

**Sec. 4.** *“Bacterial ring rot” means the disease caused by the bacterium *Clavibacter michiganense ssp. sepedonicum*.*

**Sec. 5.** *“Blackleg” means the disease caused by the bacterium *Erwinia carotovora ssp. atroseptica* or *Erwinia carotovora ssp. carotovora*.*

**Sec. 6.** *“Certified seed potatoes” means a seed lot that has complied with the requirements of sections 2 to 34, inclusive, of this regulation.*

**Sec. 7.** *“Corky ring spot” means the disease caused by the tobacco rattle virus.*

**Sec. 8.** *“Field” means the land on which seed stock is planted.*

**Sec. 9.** *“Field inspection” means inspecting a planting.*

Sec. 10. *“Late blight” means the disease caused by the fungus Phytophthora infestans.*

Sec. 11. *“Planting” means a planted crop of seed potatoes that is produced from one variety and generation of seed stock.*

Sec. 12. *“Postharvest test” means the testing of tubers that are submitted from a seed lot after a harvest to check the growth and disease content before that seed lot is planted to produce another generation of seed potatoes.*

Sec. 13. *“Recertification” means the process of certifying a seed lot that was certified the previous year and produced from a seed lot of a lower generation.*

Sec. 14. *“Rhizomania” means the viral disease of sugar beets that is transmitted by a fungus which inhabits the soil.*

Sec. 15. *“Rogue” means to remove from a planting and destroy undesirable potato vines and tubers.*

Sec. 16. *“Root-knot nematode” means the plant parasitic nematodes Meloidogyne hapla or Meloidogyne chitwoodii.*

Sec. 17. *“Seed farm” means an independent farming operation, including all facilities, equipment and operating personnel, that is managed separately for the production of certified seed potatoes.*

Sec. 18. *“Seed lot” means a harvested crop of seed potatoes that is produced from one variety and generation of seed stock.*

Sec. 19. *“Seed stock” means seed potatoes that are intended for use as a planting source.*

Sec. 20. *A seed lot, planting or portion of a planting may be disqualified from certification if a person fails to comply with any of the provisions of sections 2 to 34, inclusive, of this regulation.*

**Sec. 21. 1.** *To be eligible to produce certified seed potatoes, all plantings on a farm on which seed potatoes are planted must be entered and maintained in the certification program.*

*2. If any planting or portion of a planting is withdrawn from the certification program during the growing season, the remaining portion is not eligible to produce certified seed potatoes unless the department approves certification.*

**Sec. 22. 1.** *For each planting, an applicant must submit to the department an application for certification.*

*2. Each application must:*

*(a) Be on a form obtained from the department;*

*(b) List all sources of the seed stock planted;*

*(c) Include documentation that verifies the eligibility of the seed stock planted;*

*(d) Include a map that shows the location of the farm and the planting;*

*(e) Include any other information requested by the department;*

*(f) Be received by the department on or before May 15 of the year the seed stock is planted;*

*and*

*(g) Be accompanied by the certification fees.*

**Sec. 23. 1.** *For each planting, the department will charge and collect a certification fee of \$25 per acre with a minimum charge of \$40 per application.*

*2. Checks must be payable to the “Nevada State Department of Agriculture.”*

*3. An applicant must pay the certification fee set forth in subsection 1:*

*(a) On or before May 15 of the year in which the seed stock is planted; or*

*(b) If the seed stock is planted after May 15, not later than 5 days after the date on which the seed stock is planted.*

*4. The department will refund the certification fees paid for any planting that is withdrawn from certification if the request for a refund is submitted in writing to the department before the first field inspection.*

**Sec. 24.** *Generations of certified seed potatoes are classified as follows:*

<i>Seed Planted</i>	<i>Class Produced</i>
<i>Nuclear</i>	<i>Generation 1</i>
<i>Generation 1</i>	<i>Generation 2</i>
<i>Generation 2</i>	<i>Generation 3</i>
<i>Generation 3</i>	<i>Generation 4</i>
<i>Generation 4</i>	<i>Generation 5</i>

**Sec. 25.** *1. For a planting to be eligible to produce certified seed potatoes:*

*(a) A grower shall plant a variety of seed stock that has been approved by the department;*  
*and*

*(b) All seed stock that is planted must:*

*(1) Be identified by a certification tag or other documentation showing the generation of the seed stock.*

*(2) Be planted at least 20 feet from a planting not entered for certification.*

*(3) If certified by another certification agency, satisfy the same or similar requirements as seed stock produced in this state.*

*2. The department will not certify seed stock that is produced from generation 5 seed stock.*

*3. When two or more varieties or generations of seed stock are planted in the same field, each planting entered for certification must be marked at the boundaries of the planting by steel posts or large wooden stakes that are tall enough to be visible above the planting.*

**Sec. 26.** *1. A planting is not eligible to produce certified seed potatoes if the following diseases have been proven to exist in the field or in potatoes grown in the field:*

*(a) Root-knot nematode.*

*(b) Corky ring spot.*

*(c) Rhizomania.*

*2. A field is not eligible to produce certified seed potatoes if the following potatoes were grown in the field during the previous growing season:*

*(a) Noncertified potatoes.*

*(b) Potatoes proven to be infected with bacterial ring rot.*

*3. For a planting to be eligible to produce certified seed potatoes, if noncertified potatoes or potatoes proven to be infected with bacterial ring rot were grown in the field, the grower must farm the field with a crop other than potatoes immediately following the growing season during which the noncertified or infected potatoes were grown.*

*4. For a planting to be eligible to produce certified seed potatoes, the grower must:*

*(a) Rogue all diseased and off-type plants during the growing season;*

*(b) Remove from the planting and destroy all rogued plants, seed pieces, new tubers and off-type plants; and*

*(c) Not rogue plants infected with bacterial ring rot.*

*Sec. 27. After each application of a pesticide to a planting, the grower shall notify the department and provide the name of the pesticide and the date it was applied.*

*Sec. 28. 1. The department may inspect a planting at any time.*

*2. The department will make at least two field inspections during the growing stage of the planting. The department may make additional inspections, but not for the purpose of allowing a grower to rogue a planting that will not pass inspection.*

*3. The department may disqualify a planting from certification if any condition prevents adequate inspection of the planting. Such conditions include, without limitation:*

*(a) Excessive weed growth.*

*(b) Disease.*

*(c) Weather.*

*(d) Chemical damage.*

*(e) Another environmental condition.*

*4. To be eligible to produce certified seed potatoes, a planting must not exceed the maximum percentage of disease tolerance for each factor for the generation of seed potato produced.*

*5. Disease tolerances are established only for diseased plants showing visible symptoms, but serological tests such as ELISA may be used to confirm the presence of disease on plant samples taken from the planting. Disease tolerances are based on the following symptoms:*

*(a) Visual symptoms at the time of field inspections.*

*(b) For blackleg, the presence of a typical, inky black stem originating from the tuber.*

*(c) For bacterial ring rot, visual symptoms that are confirmed by laboratory diagnosis.*

6. During the first field inspection, a planting must not exceed the following maximum percentages of disease tolerances for the generation of seed potatoes produced:

<i>Factor</i>	<i>Percent For Each Generation</i>					
	<i>Nuclear</i>	<i>Gen 1</i>	<i>Gen 2</i>	<i>Gen 3</i>	<i>Gen 4</i>	<i>Gen 5</i>
<i>Potato leaf roll virus</i>	0.00	0.00	0.03	0.05	0.10	0.20
<i>Well-defined mosaic</i>	0.00	0.00	0.10	0.50	0.80	2.00
<i>Total visible viruses</i>	0.00	0.00	0.10	0.50	1.00	2.00
<i>Spindle tuber viroid</i>	0.00	0.00	0.00	0.00	0.00	0.00
<i>Blackleg</i>	0.00	0.10	0.50	1.00	2.00	3.00
<i>Bacterial ring rot</i>	0.00	0.00	0.00	0.00	0.00	0.00
<i>Root-knot nematode</i>	0.00	0.00	0.00	0.00	0.00	0.00
<i>Other varieties</i>	0.00	0.00	0.02	0.10	0.25	0.50

7. During the second field inspection, a planting must not exceed the following maximum percentages of disease tolerances for the generation of seed potatoes produced:

<i>Factor</i>	<i>Percent For Each Generation</i>					
	<i>Nuclear</i>	<i>Gen 1</i>	<i>Gen 2</i>	<i>Gen 3</i>	<i>Gen 4</i>	<i>Gen 5</i>
<i>Potato leaf roll virus</i>	0.00	0.00	0.01	0.05	0.10	0.20
<i>Well-defined mosaic</i>	0.00	0.00	0.05	0.25	0.50	1.00

<i>Total visible viruses</i>	<i>0.00</i>	<i>0.00</i>	<i>0.05</i>	<i>0.25</i>	<i>0.50</i>	<i>1.00</i>
<i>Spindle tuber viroid</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
<i>Blackleg</i>	<i>0.00</i>	<i>0.10</i>	<i>0.50</i>	<i>1.00</i>	<i>2.00</i>	<i>3.00</i>
<i>Bacterial ring rot</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
<i>Root-knot nematode</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
<i>Other varieties</i>	<i>0.00</i>	<i>0.00</i>	<i>0.01</i>	<i>0.05</i>	<i>0.10</i>	<i>0.20</i>

8. *A finding of 0.00 percent of disease tolerance means that none must be found during normal inspection procedures, but such a finding does not guarantee that all plants in the planting are free from the disease.*

9. *When a planting exceeds the disease tolerances for the generation of seed potatoes produced, the department will classify the seed potatoes as the next higher generation for which the seed potatoes do not exceed the disease tolerances.*

10. *As used in this section:*

(a) *“ELISA” means enzyme linked immunosorbent assay.*

(b) *“Total visible viruses” means the combined percentages of disease tolerances of potato leaf roll virus, well-defined mosaic, calico and all other viral, viroid and mycoplasma-like diseases, including haywire, witches’ broom and aster yellows.*

**Sec. 29. 1.** *When bacterial ring rot is detected in a planting or seed lot, the department:*

(a) *Will disqualify the planting or seed lot from certification; and*

(b) *Will disqualify from certification all plantings and seed lots grown by the seed farm from the same seed source, even if infected and uninfected plantings and seed lots are grown in different fields on the same seed farm or on different seed farms.*

2. *The department may disqualify a planting or seed lot from certification if the department detects any new disease in the planting or seed lot and determines that the disease is detrimental to potatoes in this state.*

**Sec. 30.** 1. *If a planting is treated or contaminated with a chemical that causes seed-borne injury to seed potatoes, the department may:*

- (a) Withhold certification pending the outcome of a postharvest test; or*
- (b) Refuse to certify a planting or portion of a planting.*

2. *If the department determines that a planting may have suffered chemical damage, the department will:*

*(a) Collect a separate sample from the planting that may have suffered chemical damage to conduct a postharvest test; and*

- (b) Withhold certification until the postharvest test is complete.*

3. *If a portion of a planting does not show enough chemical injury to prevent or interfere with an inspection of the planting but is contaminated to a degree that seed-borne chemical injury may occur in the next planting, the contaminated portion of the planting must be harvested and stored separately from the noncontaminated portion of the planting.*

**Sec. 31.** 1. *The department will inspect all seed lots that remain eligible for certification after both field inspections.*

2. *To be eligible for certification, each seed lot must:*

*(a) Be stored in a storage facility that is available for inspection by the department at any time.*

*(b) Be harvested, transported, graded and stored in a manner that will prevent intermixing with other potatoes.*

*(c) Be identified throughout the period of storage.*

*(d) Be stored in a storage facility that is sanitized.*

*(e) Not be stored, graded or handled in a storage facility in which potatoes that were not field inspected are stored or handled.*

*(f) Not be stored, graded or handled in a storage facility in which potatoes that are known to have bacterial ring rot, root-knot nematode or corky ring spot are stored or handled.*

*(g) Not be stored in a storage facility in which sprout-inhibiting materials were used the previous season.*

*(h) Not be washed.*

*3. To prevent the contamination of seed lots and the spread of disease, the grower is responsible for maintaining proper sanitation of all handling equipment and storage areas.*

**Sec. 32. 1.** *The department will conduct a postharvest test on each seed lot that has passed both field inspections.*

*2. For each seed lot, the grower must submit to the department samples for the postharvest test. The samples must:*

*(a) Contain only single drop tubers of not more than 2 ounces;*

*(b) Be randomly selected so as to adequately represent the entire seed lot; and*

*(c) Be submitted in bags weighing not more than 50 pounds each.*

*3. For each seed lot, the grower must submit to the department the following number of samples:*

*Acres*

*Number of Tubers*

<i>1 to 5</i>	<i>220</i>
<i>6 to 10</i>	<i>440</i>
<i>11 to 20</i>	<i>660</i>
<i>21 to 40</i>	<i>880</i>
<i>41 to 80</i>	<i>1100</i>
<i>81 or more</i>	<i>additional 330 tubers for each 30 acres in excess of 80 acres</i>

*4. To be eligible for certification or recertification, a seed lot must not exceed the following maximum percentages of disease tolerances:*

<i>Factor</i>	<i>Certification</i>	<i>Recertification</i>
<i>Potato leaf roll virus</i>	<i>2.00</i>	<i>0.80</i>
<i>Well-defined mosaic</i>	<i>10.00</i>	<i>2.00</i>
<i>Seed-borne chemical injury</i>	<i>5.00</i>	<i>not applicable</i>

**Sec. 33. 1.** *To be eligible for certification, each seed lot must satisfy:*

*(a) Current requirements for the grade of U.S. No. 1 seed potatoes established by the United States Department of Agriculture; or*

*(b) Contract grade requirements, including:*

*(1) All conditions and requirements of grade established by an agreement between a buyer and seller;*

- (2) Not more than 1 percent each of late blight, soft rot or wet breakdown;*
- (3) Not more than 1 percent each of dirt or debris; and*
- (4) No bacterial ring rot or root-knot nematode, based on visible, external symptoms.*

*2. The United States standards for the grades of seed potatoes set forth in 7 C.F.R. §§ 51.3000 to 51.3006, inclusive, as those sections existed on March 6, 1987, are adopted by reference as the standards for the grade of U.S. No. 1 seed potatoes in this state. The standards may be obtained from the department free of charge.*

**Sec. 34.** *1. For each container of certified seed potatoes that meets all the requirements for certification, the department will issue one of the following certification tags:*

*(a) A blue tag for certified seed potatoes which meet the current requirements for the grade of U.S. No. 1 seed potatoes established by the United States Department of Agriculture.*

*(b) A yellow tag for certified seed potatoes which meet the contract grade requirements set forth in paragraph (b) of subsection 1 of section 33 of this regulation.*

*2. The department will attach a certification tag to each vehicle that will transport bulk shipments of certified seed potatoes. The certification tag will contain an official seal and will be attached in such a manner that the unloading mechanism cannot operate without breaking the seal.*

*3. New sacks must be used for all certified seed potatoes that are sacked.*

**Sec. 35.** NAC 587.360, 587.365, 587.370, 587.375, 587.380, 587.385, 587.390, 587.395, 587.400 and 587.405 are hereby repealed.

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**TEXT OF REPEALED SECTIONS**

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**587.360 Seed potatoes: Certification standards, generally.**

1. The general seed certification standards of the department and the specific standards contained in this section constitute the standards for certification of seed potatoes.
2. To be eligible for certification by the department, any foundation or certified class of seed potatoes must conform to the current grade standards of the United States Department of Agriculture for seed potatoes.

**587.365 Seed potatoes: Applications to grow.**

1. An application to grow certified seed and the appropriate fees must be submitted by June 1 on a form supplied by the department.
2. The grower must submit with his application an affidavit showing the amount, grade, quality and locality where the seed was grown.
3. The application must be complete and must be accompanied by a map showing the location of the field where the seed is to be planted.

**587.370 Seed potatoes: Fees and refunds.**

1. The application fee and all field inspection fees must accompany the application. The department will charge and collect the following fees:
  - (a) For submitting an application \$5.00
  - (b) For the first field inspection 2.00 per acre

- (c) For the second field inspection 2.00 per acre
- (d) For the issuance of tags and seals 0.05 per tag and seal

FLUSH The fees for the first and second field inspections include the cost of winter test plots.

- 2. Fees for seed inspection will be charged according to a fee schedule, adopted by the department pursuant to subsection 2 of NRS 587.360.
- 3. Fees collected for the first and second field inspections will be refunded if the application is withdrawn before inspectors arrive in the area for the first field inspection.
- 4. Fees collected for the second field inspection will be refunded if the field is declared ineligible after the first field inspection or if the application is withdrawn before the inspectors arrive in the area for the second field inspection.
- 5. No refund will be made after the second field inspection.

**587.375 Seed potatoes: Foundation seed and certified seed; eligibility and planting.**

- 1. Seed stock for the production of foundation seed must be seed stock produced by or under the supervision of a state agricultural experiment station or seed stock that shows special merit and is approved by the department. Foundation seed stock which has been tested in winter test plots and shows not more than 0.3 percent leaf roll, 1.0 percent mosaic or a combined total of 1.5 percent virus disease is eligible planting stock.
- 2. Fields which are intended for the production of foundation seed stock must be planted in tuber-units. Four plant units should be used whenever possible. When different numbered tuber-units are used, they must be grouped under a uniform system. Single-drop units will not be accepted.
- 3. Seed stock for the production of certified seed potatoes must be the foundation seed class. To be eligible, out-of-state seed stock must be foundation seed stock from the representative

state in which it is grown or seed stock approved by the department. Seed stock showing more than 0.2 percent leaf roll or more than 1.0 percent total virus disease in the field at the time of final inspection or more than 0.4 percent leaf roll or 1.5 percent total virus disease in winter test plots is not eligible as planting stock for certified seed.

**587.380 Seed potatoes: Soil requirements; field isolation.**

1. To be approved by the department as suitable for the production of foundation or certified seed potatoes, the soil must be free of volunteer potato plants and must not have a previous history of bacterial ring rot, Eumartii wilt (*Fusarium* sp.), potato rot nematode or rootknot nematode.

2. A field planted for the production of foundation seed potatoes must be isolated from any other potato field by at least 300 feet.

3. A field planted for the production of certified seed potatoes must be isolated from any other potato field by at least 100 feet but this distance may be reduced if:

(a) The other potato field is planted with seed stock of the same or higher class and of the same variety; and

(b) Adequate protective measures are taken to prevent spread of insect-borne diseases.

4. When two or more seed stocks of the same variety are planted in the same field, they must be separated by one or more empty rows.

**587.385 Seed potatoes: Field inspections; disease tolerances.**

1. The department may inspect a field at any time.

2. The department will make two inspections of each field. The department may make additional inspections, but not for the purpose of allowing the grower to rogue fields which will not pass.

3. The grower shall rogue and remove from the field diseased plants, seed pieces and all tubers of sufficient size to be classed as single-drop seed or larger.

4. Disease tolerances in a field are:

Factor	FOUNDATION		CERTIFIED	
	First	Second	First	Second
	Inspection	Inspection	Inspection	Inspection
Leaf roll	0.5 percent	0.2 percent	0.5 percent	0.2 percent
Mosaic	1.0 percent	0.5 percent	2.0 percent	1.0 percent
Spindle tuber	1.0 percent	0.5 percent	2.0 percent	1.0 percent
Total all virus	1.0 percent	0.5 percent	2.0 percent	1.0 percent
Blackleg	1.0 percent	0.5 percent	2.0 percent	1.0 percent
Wilt	0.5 percent	0.5 percent	1.0 percent	1.0 percent
Eumartii wilt	0.0 percent	0.0 percent	0.0 percent	0.0 percent
Ring rot	0.0 percent	0.0 percent	0.0 percent	0.0 percent
Total other disease	1.0 percent	0.5 percent	2.0 percent	1.0 percent
Varietal mixture	0.25 percent	0.0 percent	1.0 percent	0.5 percent

FLUSH For purposes of this section, wilt disease includes *Verticillium* and species of *Fusarium* other than *F. eumartii*.

5. A condition of weed growth, insect infestation, late blight, rhizoctonia, poor stand, weak plants, drought, wind, hail, frost or other environmental condition or disease which interferes with proper inspection or growth may constitute a cause for rejection of a field.

**587.390 Seed potatoes: Storage.**

1. Eligible seed potatoes must be stored in suitable bins, cellars or warehouses approved by the department. The identity of each lot of seed must be maintained at all times and made known to the department.

2. The grower shall arrange with the department for inspection and approval of storage facilities before their use. The grower shall have a satisfactory plan, approved by the department, for handling each seed lot to maintain its identity from harvest through storage.

3. Eligible seed lots must be stored in separate cellars or subdivisions thereof, apart from commercial potatoes and potatoes not entered for certification and inspected by the department. Potatoes from a field which has been entered for certification and has failed to pass field inspections may be stored in the same cellar with eligible lots if the potatoes are free of bacterial ring rot, nematode or tuberworm and do not exceed the field tolerance for blackleg. Eligible lots must be binned separately with a partition constructed so that potatoes cannot pass through or over the partition.

**587.395 Seed potatoes: Bin inspections.**

1. When a sufficient time has elapsed after harvest for the appearance of storage diseases, the department will conduct a tuber or bin inspection.

2. Disease tolerances for storage diseases are:

Late blight

1 percent by weight

Stem-end discoloration

4 percent by weight

FLUSH For purposes of this section, “stem-end discoloration” means discoloration at the stem end of the potato which extends into the flesh of the potato a distance of more than one-half the length of the potato.

3. Except as provided in subsection 4, the department will not certify any potatoes that show by inspection of vine or tuber the presence of any of the following diseases or pests:

Black wart (*Synchytrium*)

Powdery scab (*Spongospora*)

Violet rhizoctonia (*Rhizoctonia crocosum*)

Bacterial ring rot (*Corynebacterium sepidonicum*)

Nematode, potato rot or root rot

Tuberworm

Eumartii wilt

4. The discovery of any of the diseases in subsection 3 during grading is cause for rejection of the remaining ungraded portion of the seed lot. The portion of the seed lot already graded and meeting all other certification requirements must be deemed certified.

**587.400 Seed potatoes: Winter test plots.**

1. Before eligibility for final certification is determined, the department will winter test, in a greenhouse or field plots, samples of all lots of seed potatoes which have met field standards for the foundation or certified class of seed.

2. The minimum sample size must be 440 single drop tubers for fields up to 40 acres. One additional sample of 220 single drop tubers must be drawn for each 40 acres or portion thereof of field size above the original 40 acres. “Single drop tubers” means tubers 1.5 to 3.0 ounces in weight.

3. Disease tolerances in test plots are:

	FOUNDATION	CERTIFIED
Leaf roll	0.4 percent	0.8 percent
Mosaic	1.0 percent	2.0 percent
Total all virus	1.5 percent	2.0 percent
Total other disease	1.5 percent	3.0 percent
Varietal mixture	0.0 percent	1.0 percent

**587.405 Seed potatoes: Bags, tags and seals; bulk shipments.**

1. Potatoes which have met the field and storage requirements for certification must be packed in new sacks to be eligible for tagging and sealing.

2. Certified seed may be transported in bulk when the containers are approved by the department.

3. Bulk shipments may be made only under a seed-moving permit issued by the department.

4. Bulk lots must be in clean containers which are tagged and sealed in a manner approved by the department.