ARTICLE 74-04
SEED POTATO CERTIFICATION STANDARDS

Chapter
74-04-01 Seed Potato Certification Standards

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74-04-01-01. Definitions.

As used in this chapter:

1. "Basic seed" means seed potatoes produced by means of meristem, stem cutting, or other techniques for increase by certified growers.

2. "Certification" is strictly limited to the act of endorsing that the potatoes have met the standards or requirements specified in this chapter for seed potatoes. Certification does not mean or constitute any warranty or representation that the potatoes are of the variety or selection identified on the label, merchantable, disease free, fit for a particular purpose or anything other than that the potato crop was inspected and that at the time of inspection did meet the standards set forth in this chapter.

3. "Damaged by soil" means that the individual potato has more than fifty percent of its surface affected by light caked soil, or more than fifteen percent of its surface badly caked with soil.

4. "Dry land type", as allowed for long varieties only, means not seriously misshapen.

5. "Except for shape", as allowed for long varieties only, means the potatoes may be seriously misshapen.

6. "Experimental cultivar" means a numbered cultivar or cultivar that has not yet been released from a breeding program or has been produced under experimental conditions.

7. "Field year" means the time which is required for the potato plant to complete the growing cycle from planting in the field until maturity.

8. "Foundation seed" means a primary source of a genetically identified variety from which increases are made.

9. "Grade" refers to the tuber quality, condition, and size factors as specified in this chapter.

10. "Inspection" means visual examination or observation of sample plants or tubers.

11. "Label" means an official tag or bulk certificate used to identify certified seed.

12. "Latent diseases" means diseases not detectable by visual inspection.

13. "Lightly caked with soil" means approximately one-eighth of an inch [3.18 millimeters] in depth.

14. "Micropropagation" means the aseptic production of potato plantlets, tubers, or sprouts utilizing meristem culture.

15. "Off type" means potato plants in a field that deviate in one or more characteristics from that which is usual in the variety being grown, or different from the cultivar, variety, strain, or selection stated on the grower application for certification.

16. "Plant Variety Protection Act" means a federal Act passed in 1970 which gives the owner of a novel variety the exclusive right to produce and market that variety.

17. "Prenuclear seed" means plantlet propagation source resulting from the use of aseptic propagation techniques either in the laboratory or controlled environment.

18. "Seed potatoes" means Irish potato tubers to be used for planting.

19. "Seed warehouse" means a building for seed potato storage that is separate in structure and foundation from a commercial potato storage unit.

20. "Selection" means a subgroup of a variety of potato. Commonly used terms include line selection, clonal selection, or strain selection.

21. "Seriously damaged by soil" means a potato having caked soil on more than one-half of the surface or an equivalent amount of soil in excessively thick chunks on a lesser area.

22. "Tolerance" means a permissible allowance for such factors as disease, grade defects, and varietal mixture.

23. "Variety" means a plant group within a single botanical taxon of the lowest-known rank which, without regard to whether the conditions for plant variety protection are met, can be defined by the expression of the characteristics resulting from a given genotype or combination of genotypes, distinguished from any other plant grouping by the expression of at least one characteristic, and considered as a unit with regard to the suitability of the plant grouping for being propagated unchanged. A variety may be represented by transplants, plants, tubers, tissue culture, plantlets, and other matter.

24. "Virus tested" means tested for latent viruses by methods established by the state seed department.

25. "Zero tolerance" means that no amount is permissible. It does not mean that the seed is absolutely free of a disease or disease-causing agent, grade defect, or varietal mixture, but that none was found during inspection.

History: Amended effective December 1, 1981; December 1, 1987; September 1, 1997; September 1, 2002; January 1, 2005; January 2, 2006; July 1, 2007.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-01

74-04-01-02. General requirements and responsibilities.

1. Participation and responsibility.

a. Participation in this seed potato program is voluntary and may be withdrawn prior to the first inspection.

b. Responsibilities.

(1) Seed department responsibilities. The inspections, approvals, certification, and production of these rules and regulations will be done by the state seed department.

(2) Applicants' responsibilities. The farming, sanitation practices, storing, and packing will be the grower's responsibility. It is the responsibility of the applicant to maintain genetic purity and identity at all stages of certification, including planting, harvesting, storing, and handling. Evidence that any lot of seed has not been protected from contamination that might affect genetic purity or is not properly identified shall be cause for possible rejection of certification.

2. General requirements.

a. Potatoes to be eligible for the program shall have been in a certification program and winter tested for eligibility.

b. Fields will pass two or more inspections given by visual examination of a representative sample of the plants which method and size of sample will be determined by the state seed department.

c. Fields passing inspection will be stored in a seed warehouse and sorted to grade at shipping time.

d. Responsibility for the quality of work done in sorting the potatoes falls upon the grower or a thoroughly qualified agent authorized by the grower.

e. Requirements for certification are not complete on any lot of eligible potatoes until properly labeled as described in this chapter. Official labels will be provided to the grower by the state seed department in hard copy or electronic form. Official seed grade inspections are compulsory for seed shipped out of state. Grade inspection is voluntary for intrastate shipments. For those shipments that are not inspected, or that fail to meet grade standards described in section 74-04-01-11, the label must state "no grade".

f. The responsibility for properly and accurately labeling foundation or certified seed rests with the grower of the seed. The labels will be issued to the purchaser only on order or authorization from the grower, who must provide to the purchaser a proper and accurate label for each container or load of seed at the time of delivery. Labels must not be applied to stock other than that indicated on the tags or bulk certificates. Bulk shipments, by truck or railcar, when thoroughly disinfected, may be considered the container.

g. The seed label must contain the following information:

(1) Year in which the crop was produced.

(2) Grower/labeler's name.

(3) Variety.

(4) Field year.

(5) Class.

(6) Certification or application number of the seed lot.

(7) Total amount in container represented by cwt.

h. Resorting or regrading. If a lot of potatoes fails to meet certified seed grade requirement upon inspection, they are to be reconditioned to meet the requirement or the official labels must be removed.

i. Reconditioning while in transit. In the case of any circumstance making it essential to recondition seed in transit, permission must be obtained from the state seed department.

j. Latent virus testing. Serological testing for latent viruses shall be voluntary and a requirement for only virus-tested seed. Virus-tested seed meeting established tolerances may be indicated on the label.

k. Upon the discretion of the state seed department, potato seed lots originating from out of state may be subjected to a laboratory test, by a seed department-approved laboratory, for the detection of seedborne pathogens. Eligibility for recertification of any seed lot so tested must be based on that laboratory test. Additional documentation, including health certificates or summer or winter, or both, field readings, may be required by the seed department prior to acceptance for recertification in this state.

l. Failure to comply with any of the requirements of this chapter may be cause for rejection or cancellation of the lot or the certification of any seed as seed potatoes.

3. No person may disclaim responsibility of the vendor of the seed for the data or information on the label required by law and any such disclaimer of vendor's express or implied warranty is invalid.

4. Violations. The state law specifically states the use of the term "certified" or the term "registered" or any term or terms conveying a meaning substantially equivalent to the meaning of any said terms, either orally or in writing, printing, marking, or otherwise in reference to or in connection with or in advertising or characterizing or labeling seed potatoes or the containers thereof is prohibited, unless such potatoes shall have been duly inspected and certified pursuant to the provisions of the law.

History: Amended effective December 1, 1981; June 1, 1992; January 2, 2006; July 1, 2007; October 1, 2012; July 1, 2018; July 1, 2020.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-02

74-04-01-03. Exclusion of warranty and limitation of remedy.

Seed potatoes certified in accordance with this chapter have been field and grade inspected as specified in this chapter. The state seed department and the inspection service function and serve only in an official regulatory manner and do not relieve the grower or owner of the grower's or owner's responsibility. Neither the producer, the seller, the North Dakota seed commission, the seed commissioner, or the commissioner's employees make any warranty or representation of any kind, express or implied, as to the quantity or quality of the crop produced from certified seed, including merchantability, fitness for a particular purpose, or absence of disease, or varietal or selection identity. The only representation is that the seed potatoes were produced, graded, packed, and inspected under the seed certification rules and regulations of the North Dakota state seed department.

History: Amended effective December 1, 1981; July 1, 2007.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-12

74-04-01-04. Application fees and restrictions.

1. Application for field inspection must be received in the state seed department, 1313 18th Street North, P.O. Box 5257, Fargo, North Dakota, not later than June fifteenth. There is a five dollar per acre [.40 hectare] cash penalty for later applications.

2. At least one-half the fees and all due accounts must accompany the applications.

3. Applications are subject to cancellation in the case of crop failure or other valid reason and the application fee, minus a cancellation fee will be returned if the request reaches the state seed department before the inspector arrives in the general locality of the field. However, in such a case, the crop must be plowed under or destroyed so as not to create a disease hazard.

4. Separate application forms are required for latent virus testing.

5. Loss by drown outs, if over twenty-five percent of the field, will be allowed after the first inspection only. No adjustments will be made thereafter.

6. Fee schedules for field inspection, grade inspection, latent virus testing, cancellation fees, and late penalties are subject to change and available at the state seed department.

7. Prompt payment of all fees will be required at all times.

8. Additional testing costs such as laboratory tests will be assessed at costs to the grower.

History: Amended effective December 1, 1981; December 1, 1987; June 1, 1992; September 1, 1997; September 1, 2002; July 1, 2018; July 1, 2020; October 1, 2024.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-02

74-04-01-05. Seed potato farm requirements.

1. All potato fields on the farm or in the farming operation must be eligible and entered for certification. A farming operation means any combination of operators in a farm partnership, and all potato fields in the farming operation whether actually grown by the applicant or under growing agreements, with separate equipment and storages being the primary consideration to the seed department in determining the eligibility of applicants as seed farms. Separate legal entities, if determined by the seed commissioner to be associated or affiliated with a commercial potato farming operation, are not eligible for entry into the certification program.

2. All equipment and storages in the potato operation must be used only on the acreage [hectarage] entered for certification.

3. Parts of fields will not be accepted or certified without the prior approval of the commissioner.

4. Boundaries of certified seed potato fields must be clearly defined. Adequate separation from uncertified fields must be maintained and are the responsibility of the certified seed potato grower. The definition of adequate separation is at the discretion of the state seed department or its representative. Field separation of a certified field from an uncertified field must be established prior to the second inspection.

5. Seed potatoes will not be planted on ground that was cropped to potatoes the previous year, unless the ground is fumigated.

6. Strips or markers are required between seed lots and varieties.

7. Equipment and storages must be thoroughly cleaned and disinfected at least once annually.

8. All cull piles in the farming operation must be properly destroyed.

9. The adequacy of seed farms in meeting all criteria for eligibility is determined by onsite inspection by and at the discretion of seed department personnel.

History: Amended effective December 1, 1981; June 1, 1992; September 1, 1997; September 1, 2002; January 2, 2006; October 1, 2024.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-02

74-04-01-06. Seed eligibility.

1. North Dakota seed stocks.

   a. Seed lots of North Dakota origin to be eligible will have been grown under the seed certification program in the previous season passing field inspection and the winter test.

   b. Seed stocks not having a winter test may be accepted on an observational basis but only after they have been laboratory tested and only with prior approval from the state seed department. The cost of laboratory testing will be borne by the applicant. The same field inspection fee structure will apply to this application.

2. Seed stocks from other sources. Seed lots from sources other than North Dakota will be of the foundation or approved classification and have passed a winter grow-out or laboratory test on a sample of the lot that is equal to or greater than the size of the winter test sample as outlined in this bulletin.

3. Purchase proof must accompany the application to provide sufficient evidence as to origin and quantity of seed. An approved combination of shipping point certificates, affidavits, North American certified seed potato health certificates, or sales receipts will be accepted. The variety or selection declared by the grower will be presumed correct if the documentation provided is valid and acceptable for all other purposes.

4. Individual seed lots will be maintained separately at all times. If separation is not maintained and commingling of lots occurs, each seed lot will automatically advance to the generation and health factors of the oldest or lowest, or both, seed health status of the commingled parts.

5. Any variety protected by patent or the Plant Variety Protection Act must have authorization from the owner.

History: Amended effective December 1, 1981; June 1, 1992; September 1, 1997; September 1, 2002; January 2, 2006; July 1, 2007.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-02

74-04-01-07. Seed classification and limited generation.

1. All seed potatoes must be limited to seven years of reproduction in the field. Seed lots may be reproduced beyond this limit with prior approval of the state seed department providing the seed lot has been winter tested and eligible for recertification.

2. Prenuclear seed stocks must originate from tissue-culture derived plantlets, minitubers, microtubers, or pathogen-tested stem cuttings. Experimental breeding selections shall originate from pathogen-tested material. The first year of reproduction of these stocks will be regarded as nuclear seed stock. The certified designation will be granted to lots meeting the minimum standards outlined in section 74-04-01-08 and by approval of the commissioner. Subsequent generations will be regarded as:

a. FY1 (first field year) is the progeny of nuclear seed.

b. FY2 (second field year) is the progeny of FY1.

c. FY3 (third field year) is the progeny of FY2.

d. FY4 (fourth field year) is the progeny of FY3.

e. FY5 (fifth field year) is the progeny of FY4.

f. FY6 (sixth field year) is the progeny of FY5.

g. Certified class (seventh field year) is the progeny of FY6.

3. Prenuclear seed stocks intended to be grown in the greenhouse as minitubers, microtubers, or stem cuttings must be laboratory-tested, be demonstrated to be free of the following pathogens, and meet the following standards:

   a. Clavibacter michiganensis subsp. sepedonicus (ring rot).

   b. Erwinia carotovora (blackleg and soft rot).

   c. Potato virus A.

   d. Potato virus M.

   e. Potato virus X.

   f. Potato virus Y.

   g. Potato leafroll virus.

   h. Potato spindle tuber viroid.

   i. Potato mop top virus.

   j. All micropropagation production must be approved by a certification agency.

   k. Good records must be maintained on all tests and submitted with the application for field inspection.

   l. A minimum of one percent of the plantlets must have been tested for the above pathogens using the most reliable testing techniques.

4. Basic seed must originate from sources described above and developed in seed plots and have met specific field inspection and winter test standards established by the state seed department. Seed stocks will be grown a limited number of field years.

   Experimental cultivars under evaluation by the state seed department in cooperation with universities or industry will meet program requirements of and will be maintained under guidelines and standards established by the state seed department. Seed stocks will be grown a limited number of field years.

5. Foundation class seed must be seed meeting standards for recertification.

   a. Foundation seed will be produced on farms found to be free of bacterial ring rot for three years. All seed stocks must be replaced on a farm in which bacterial ring rot has been found.

b. Excessive blackleg symptoms will be cause for rejection as foundation stock.

6. The certified class must meet the minimum field tolerances described in section 74-04-01-08. The classification serves as a quality standard for commercial planting purposes only and must meet all the requirements and responsibilities of this chapter. The certified class designation may be applied to any field year under the criteria set forth in section 74-04-01-07.8.

7. Field year designations increase with years of field reproduction from the original seed source. Field year five (FY5) will be the final generation of seed eligible for recertification. The certified seed class is not eligible for recertification. If seed availability is low for a specific potato variety, seed lots with more advanced generation numbers may be eligible for recertification providing the seed lot has passed a winter test and prior approval of the state seed department has been obtained.

8. Except for varietal mixtures, seed lots may be downgraded and placed in the certified class and sold by their field year designation as certified seed providing they meet the specifications for that class. Disease tolerances for each field year of seed are outlined in the section on field inspection standards.

History: Effective December 1, 1981; amended effective December 1, 1987; June 1, 1992; September 1, 1997; July 16, 2001; September 1, 2002; January 1, 2005; January 2, 2006; July 1, 2010; July 1, 2020; October 1, 2024.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-02

74-04-01-08. Field inspection standards.

1. Each seed potato field will be visually inspected based on sample inspection. The method of inspection and sample size will be at the discretion of the state seed department but a minimum of one hundred plants per acre [.40 hectare] will be inspected. For varieties that do not express readily visible symptoms of a disease, laboratory testing may be done for the pathogen.

2. The field tolerance established will be based on visible symptoms in the samples inspected. Diseases which cannot be observed visually may be present.

	First Inspection Tolerances (%) Foundation Class Field Year						Certified Class Field Year
	1	2	3	4	5	6	0-6
Varietal mixture	0.1	0.2	0.3	0.5	0.5	0.5	0.5
Spindle tuber viroid	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Severe mosaics (PVY)	0.2	0.3	0.4	0.5	0.5	0.5	2.0
Leaf roll (PLRV)	0.2	0.3	0.4	0.5	0.5	0.5	2.0
Total serious virus	0.2	0.3	0.4	0.5	0.5	0.5	2.0
*Bacterial ring rot	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	Second and All Subsequent Inspections Tolerances (%) Foundation Class Field Year						Certified Class Field Year
	1	2	3	4	5	6	0-6

Varietal mixture	0.1	0.1	0.2	0.3	0.3	0.3	0.3
Spindle tuber viroid	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Severe mosaics (PVY)	0.0	0.1	0.2	0.3	0.3	0.3	2.0
Leaf roll (PLRV)	0.0	0.1	0.2	0.3	0.3	0.3	2.0
Total serious virus	0.0	0.1	0.2	0.3	0.3	0.3	2.0
*Bacterial ring rot	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Late blight found during field inspection must be confirmed by symptoms or laboratory diagnosis before being reported on the inspection report.

* The zero tolerance means that no amount is permissible when inspected. It does not mean that the seed is absolutely free of disease or disease-causing agents, but that none was found during inspection.

Varieties that do not express visible disease symptoms. Potato varieties that do not express visible disease symptoms of a specific pathogen may be subjected to a laboratory test to determine the levels of the pathogen in a seed lot. This testing may occur during the growing season or during the winter test, or both, and may affect eligibility of the seed lot.

Ring rot. Seed fields will be subject to a third (final) field inspection focused primarily on inspection for symptoms related to ring rot. If the field has not received a third inspection, the grower will be required to submit a four hundred tuber sample (minimum) per field for laboratory testing.

Blackleg. Since the blackleg disease may be latent, the inspector will record only the percentage observed during the first and second inspection, and no tolerance will be established. However, any excessive amount can be cause for rejection. Blackleg observations shall be based upon sample plants exhibiting the characteristic black, inky, soft, slimy, decomposed tissue of the stem.

Wilt. Only the percentage noted will be recorded on the first and second inspection, and may include other factors such as maturity, drought, or alkali problems but any excessive amount may be cause for rejection.

There will be zero tolerance for potato wart, corky ring spot, gangrene, golden nematode, root knot nematode, tuber moths, or other such injurious pests that have never been found and confirmed in North Dakota seed potato fields.

Tolerances for potato virus x tested seed. All of the above tolerances will apply, including a requirement that bacterial ring rot must not have been found on the farm during the season. Seed lots with no more than two percent potato virus x infection may be identified as virus x tested on certification labels.

3. Field conditions.

    a. Insect control must be maintained early and until the vines are killed or matured. Fields suffering excessive insect injury may be disqualified for certification. A grower will notify the inspector of the date of spraying and spray material applied.

    b. Vine killing. If a field has not received final inspection, the grower must obtain approval from the inspector before killing the vines. Furthermore, if the inspector deems it appropriate, a laboratory test may be required or strips of unkilled vines must be left in the seed fields to facilitate final inspections, or both. When strips are left for inspection, the first twelve rows (if a six-row planter was used, eight rows if a four-row planter was used) must not be vine-killed. It will be the responsibility of the seed producer to identify where seed planting began. Approximately ten percent of the seed field acreage must be left in strips.

c. Any condition such as excess weeds, hail injury, foreign plants, chemical damage, soil conditions, or insect damage that interferes with proper inspection may disqualify the seed for certification.

d. Roguing is permitted and recommended in many cases but must be done before the inspector arrives in the field.

e. Presence of disease or conditions not mentioned heretofore which may impair seed quality shall constitute cause for rejection or additional testing before final certification. Stocks which show an excessive percentage of total serious virus in official postharvest tests shall be considered ineligible for certification.

4. Appeal. Inspection of rejected fields will be considered, provided application is made within three days after rejection, the field is in good condition for inspection, and no additional roguing is done prior to reinspection.

5. Bacterial ring rot control.

a. All seed produced by a farming operation in which bacterial ring rot has been found will be ineligible for recertification the following year.

b. If the farming operation is found to be infected, all equipment and storages must be cleaned and disinfected.

c. A farming operation found to be infected on three consecutive years shall be required to purchase all new seed, clean, and disinfect the operation under the supervision of the state seed department before entering any seed for certification.

6. The variety name stated on the application will be the standard for inspection when entering the field. Absent compelling visual evidence to the contrary, the variety or selection declared by the grower will be presumed correct if the documentation provided is valid and the variety description characteristics meet the requirements of the chapter.

7. Inspections, tests, certifications, and other acts are not intended to induce reliance on the seed department's inspections, certifications, or any other action or inaction for any purpose relating to quantity or quality of the seed or crop produced, fitness for purpose, merchantability, absence of disease, or variety or selection identification. Certification means only that the potatoes were randomly inspected, and at the time of the inspection the field or seed lot met the rules of the department.

History: Effective December 1, 1981; amended effective June 1, 1992; September 1, 1997; July 16, 2001; September 1, 2002; January 2, 2006; July 1, 2007; July 1, 2010; October 1, 2012; July 1, 2020; October 1, 2024.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-02

74-04-01-09. Postharvest testing program.

1. All foundation and basic seed potato fields must be randomly sampled and tested if the grower intends to plant the same seed lot or sell to growers who intend to enter the lot for certification the following year. Only seed lots with three-tenths of one percent total serious virus or less during field inspections are eligible for postharvest testing.

2. The results must be based on visual inspection of the plants for virus or viruslike symptoms from the sample the grower submitted. However, laboratory testing may be used on varieties that have slight or latent symptoms.

3. Other factors such as vigor, other diseases, and any factor that might impair seed quality will be considered in the postharvest testing program.

4. Information concerning sample size and time to submit samples will be available from the state seed department.

5. Lots failing the postharvest test may be ineligible for planting in the certification program.

6. In the event of frost or other serious malfunctions of the postharvest grow-out test, eligibility of a seed lot will be based on the current field readings or a laboratory test at the discretion of the state seed department.

7. Seed lots showing excessive amounts of virus in the postharvest test may be disqualified for final certification. The level at which to disqualify the lot will be established by the seed commissioner.

History: Effective December 1, 1981; amended effective December 1, 1987; June 1, 1992; September 1, 1997; January 2, 2006; October 1, 2012; October 1, 2024.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-02

74-04-01-10. Storage and packaging requirements.

1. A storage to be eligible must have been cleaned and disinfected prior to harvest. Storages not previously used for certified seed must be inspected by the state seed department.

2. Seed potatoes to be eligible for final certification must be stored in a warehouse containing only seed potatoes which have been field-inspected. Such warehouses may contain field-inspected stocks rejected for seed certification for causes other than such diseases as ring rot.

3. Equipment for handling, sorting, or grading can be used only on certified stock, but also must be cleaned and disinfected.

4. Containers.

   a. Graded stocks must be placed in new sacks, clean crates, totes, or bulk containers which are labeled in an approved manner to indicate the lot contains certified seed potatoes.

   b. Brands or markings must feature "North Dakota" as the production area.

   c. No used bags may be brought into the farming operation.

   d. It is highly recommended that all containers be disinfected for the grower's own protection.

5. Out-of-state storage. Growers, upon special application, may be permitted final certification on eligible stocks in approved nearby storages outside the state.

6. Bin inspection. Certified storages may be checked by an authorized inspector during the storage season.

7. Yield and storage reports. A report will be given to the state seed department stating yield of each field entered for certification and the location of the storages.

8. Transfers of seed potatoes to other parties. A lot of seed potatoes eligible for final certification may be transferred to another party along with labels provided authorization is given by the state seed department and the grower.

9. Each bin containing certified seed potatoes must be plainly labeled for certification with the grower's name and address, hundredweight [45.36 kilograms] or bushels [35.24 liters], variety, and field identification.

10. All basic and foundation seed lots and other seed lots intended for recertification must be stored in identifiable, clearly separated bins. Bins containing two or more seed lots of a variety without a divider or some other method of separation will be downgraded to the appropriate generation or disease tolerance level.

History: Effective December 1, 1981; amended effective December 1, 1987; June 1, 1992; September 1, 1997; October 1, 2012; October 1, 2024.
General Authority: NDCC 28-32
Law Implemented: NDCC 4.1-55-02

74-04-01-11. Official North Dakota seed potato grades.

Final grade determination shall be made based on physical defects, size, shape, and cleanliness. The potatoes will be packed in new sacks, totes, or clean, disinfected containers identified by labels as to variety, crop year, and grower and accompanied by an official state or federal grade certificate. United States department of agriculture revised standards, effective March 2012, for seed potatoes shall be the official guide for applying and interpreting all definitions and terms used in North Dakota seed potato grades. Grade inspection will be made on a sample basis.

1. First grade blue tag seed potatoes shall consist of unwashed potatoes of one variety which must meet the following requirements:

    a. Shape. Fairly well-shaped except for long varieties.

        (1) Dryland type (see definitions section 74-04-01-01).

        (2) Except for shape (see definitions section 74-04-01-01).

    b. Free from:

        (1) Freezing injury.

        (2) Blackheart.

        (3) Soft rot and wet breakdown.

        (4) Late blight tuber rot.

        (5) Bacterial ring rot.

        (6) Nematode or tuber moth injury.

        (7) Fresh cuts or fresh broken-off second growth.

    c. Free from serious damage caused by:

        (1) Hollow heart.

        (2) Vascular ring discoloration.

        (3) Wireworm.

        (4) Growth cracks.

d. Free from damage by soil and other causes (see definitions section 74-04-01-01 and classification of defects, section 6, tables I and II of section 74-04-01-11).

e. Size:

(1) Minimum size, unless otherwise specified, must be one and one-half inches [38.1 millimeters] in diameter.

(2) Maximum size may not exceed twelve ounces [340.2 grams] for round-shaped or intermediate-shaped varieties and fourteen ounces [396.9 grams] for long varieties.

(3) For all varieties, size B must be from one and one-half inches [38.1 millimeters] to not more than two and one-quarter inches [57.1 millimeters] in diameter.

f. 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:

(1) For defects:

(a) Ten percent for potatoes in any lot which are seriously damaged by hollow heart.

(b) Ten percent for potatoes in any lot which are damaged by soil. (see definitions section 74-04-01-01).

(c) Five percent for potatoes in any lot which are seriously damaged by vascular ring discoloration.

(d) Potatoes affected by silver scurf are not grade factors.

(e) Not more than ten percent of the potatoes seriously damaged by wireworm.

(f) Eleven percent for potatoes which fail to meet the remaining requirements of grade, including therein not more than six percent for external defects and not more than five 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
Late blight tuber rot	1.00
Damage by dry-type or moist-type fusarium tuber rot	2.00
Nematode or tuber moth injury	0.00
Frozen, soft rot, or wet breakdown	0.50
Varietal mixture	0.50

(2) For off-size:

(a) Undersize. Five percent for potatoes in any lot which fail to meet the required or specified minimum size.

(b) Oversize. Ten percent for potatoes in any lot which fail to meet the required or specified maximum size.

2. Second grade yellow tag potatoes shall consist of unwashed potatoes that meet the requirements for blue tag grade except for defects caused by hollow heart, wireworm, internal discoloration, firmness, sprouts, and sunken, flattened, or depressed areas with or without underlying flesh discolored, and are not seriously damaged by soil and for increase in maximum size, and for increased tolerance for defects listed below:

   Tolerances.

   a. For defects:

      (1) Twenty percent for potatoes seriously damaged by hollow heart.

      (2) Firmness, sprouts, wireworm, internal discoloration, sunken, flattened, or depressed areas with or without underlying flesh discolored and growth cracks are not grade factors.

      (3) Twenty percent for potatoes which fail to meet the remaining requirements of the grade; provided, that included in this amount not more than six percent shall be seriously damaged and included therein not more than one-half of one percent shall be allowed for potatoes which are frozen or affected by soft rot or wet breakdown.

   b. Size. Maximum size, unless otherwise specified may not exceed fourteen ounces [396.90 grams] for round-shaped or intermediate-shaped varieties and sixteen ounces [453.60 grams] for long varieties.

3. White tag. The white tag North Dakota-certified seed potato grade shall consist of certified seed potatoes of one variety that are graded according to agreement between the seller and the purchaser as to size and defects, except that not more than one-half percent of soft rot, fozen, or wet breakdown and two percent dry rot, of which not more than one percent late blight tuber rot is allowed. Import requirements may be considered an agreement. The official label must be used and marked as white tag.

4. The blue tag, yellow tag, or white tag grade designation may not be used on the official label unless the seed has been grade inspected. Noninspected seed must be labeled "no grade".

5. Application of tolerances. Individual samples may 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.

6. Samples for grade and size determination. Individual samples shall consist of at least twenty pounds [9.06 kilograms]. The number of such individual samples drawn for grade and size determination will vary with the size of the lot.

7. 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 may not be scored against the grade.

   b. Table I - External defects.

	DAMAGE		
Defect	When materially	OR	When removal causes a loss of

	detracting from the appearance of the potato	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 millimeters] 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 [19.1 millimeters] long or when the aggregate length of all holes is more than 1 1/4 inches [31.8 millimeters][1].	
Dry-type or moist-type fusarium rot		x
Rhizoctonia	x	
Scab, pitted	x	x
Scab, russet	When affecting more than 1/3 of the surface.	
Scab, all surface	When affecting more than 5 percent of the surface.	
Growth cracks	When seriously detracting from the appearance.	
Pressure bruises and sunken		When removal causes a loss of

areas with underlying flesh discolored	more than 10 percent of the total weight.

[1]Definitions of damage and serious damage are based on potatoes that are two and one-half inches [63.5 millimeters] in diameter or six ounces [170.10 grams] in weight. Correspondingly lesser or greater areas are permitted on smaller or larger potatoes.

c. Table II - Internal defects.

DAMAGE			
Defect	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 millimeters] in diameter[1].		
All other internal discoloration, excluding dis- coloration confined to the vascular ring.			x
SERIOUS DAMAGE			
Defect	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 [19.1 millimeters] in diameter[1].		

[1]Definitions of damage and serious damage are based on potatoes that are two and one-half inches [63.5 millimeters] in diameter or six ounces [170.10 grams] in weight. Correspondingly lesser or greater areas are permitted on smaller or larger potatoes.

8. Classification and serologically tested stocks.

a. Foundation seed classification may be indicated on the lab provided the lot meets foundation standards.

b. Serologically tested stocks for potato virus x, potato virus s, potato virus y, potato virus a, or potato virus m may be so indicated on the label if within the specified tolerance during the current growing season.

9. Grade inspections are not intended to induce growers' or producers' reliance regarding the presence or absence of disease, the identity of the variety or selection, quantity, or quality of the seed or crop produced or the fitness of the seed.

Blue tag, yellow tag, and white tag shipments must be inspected and meet respective grade requirements.

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