



United States
Department of
Agriculture

Potatoes

Agricultural
Marketing
Service

Shipping Point and Market Inspection Instructions

Fruit and
Vegetable
Programs

Fresh Products
Division

April 2012



Shipping Point and Market Inspection Instructions for Potatoes

These inspection instructions are specifically developed and designed by the Fresh Products Division to assist officially licensed inspectors in the interpretation and application of the U.S. Standards for Grades of Potatoes, Section 51.1540, and U.S. Standards for Grades of Seed Potatoes, Section 51.3000.

These instructions do not establish any substantial rule not legally authorized by the official grade standards. This publication supersedes any previously issued inspection instructions.

Refer to General Inspection Instructions for additional information pertaining to date, inspection point, carrier, condition of carrier, lading, etc. not covered in these instructions. (Reference to "General Inspection Instructions" in all Fresh Product Division publications refers to any of or all of the following - General Shipping Point Inspection Instructions, General Market Inspection Instructions, or Fresh Fruit and Vegetable Certificate Writing Handbooks.)

Any portion of these instructions beginning with a section number such as §51.--- and followed with **bold** print is material copied directly from the U.S. standards. The U.S. Standards for Grades of Potatoes and U.S. Standards for Grades of Seed Potatoes are printed in the appendix of this instruction. All of the U.S. standards are available on the Internet under the USDA homepage.

April 2012

Factors noted with (Q) are considered **quality** only. Factors noted with (C) are considered **condition** at market. Factors with (Q or C) may be considered as **quality** or **condition** depending on the circumstances.

TABLE OF CONTENTS

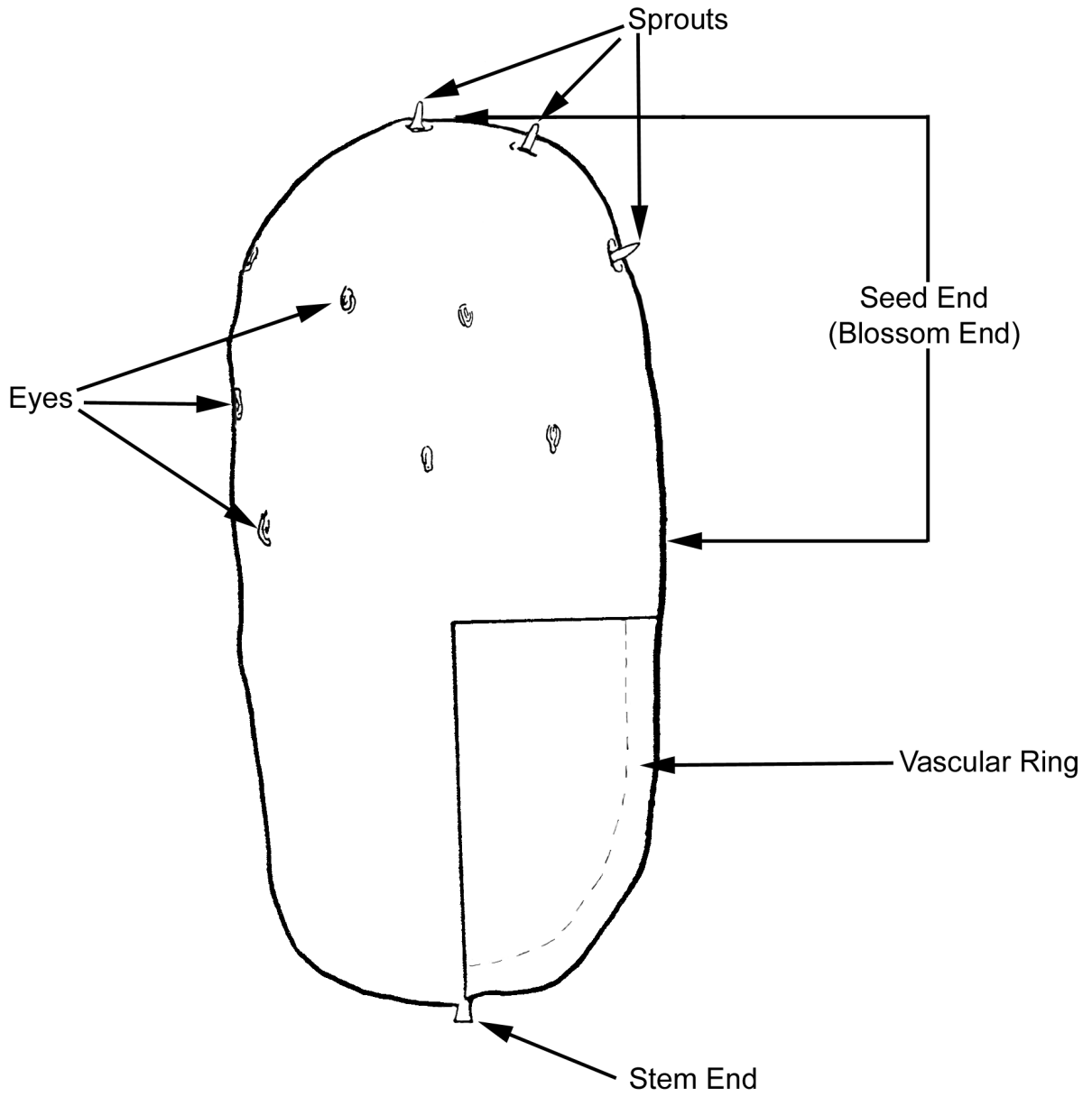
| | |
|---|-----------|
| PART 1: SHIPPING POINT AND MARKET INSPECTION INSTRUCTIONS FOR FRESH POTATOES | 2 |
| GENERAL..... | 2 |
| REPRESENTATIVE SAMPLING | 2 |
| SIZE OF SAMPLES | 2 |
| NUMBER OF SAMPLES | 3 |
| SHIPPING POINT | 3 |
| MARKET..... | 3 |
| INSPECTION OF BULK LOADS OR BULK BINS | 4 |
| TOLERANCES..... | 4 |
| SUMMARY OF TOLERANCES..... | 6 |
| APPLICATION OF TOLERANCES..... | 7 |
| SUMMARY OF APPLICATION OF TOLERANCES | 8 |
| NOTESHEET AND CERTIFICATE | 9 |
| PRODUCT | 9 |
| NUMBER/TYPE OF CONTAINERS | 9 |
| BRANDS/MARKINGS..... | 10 |
| ORIGIN | 10 |
| CONDITION OF PACK..... | 10 |
| TEMPERATURE OF PRODUCT | 11 |
| SIZE | 11 |
| REPORTING SIZE..... | 12 |
| SIZE A..... | 13 |
| REPORTING PERCENTAGES OF A SPECIFIED SIZE AND LARGER | 14 |
| CERTIFYING MINIMUM SIZE | 14 |
| CERTIFYING MAXIMUM SIZE | 15 |
| REPORTING OVERWEIGHT | 15 |
| CONTAINERS MARKED TO SIZE OR COUNT | 15 |
| CERTIFYING SIZE WITHOUT REFERENCE TO GRADE | 16 |
| USE OF UNDERSIZE AND OVERSIZE WITHIN TOLERANCE | 16 |
| WHEN UNDERSIZED OR OVERSIZED SPECIMENS ARE ALSO DEFECTIVE | 16 |

| | |
|--|-----------|
| MATURITY AND SKINNING..... | 17 |
| MATURITY/SKINNING CLASSIFICATION TO BE USED UPON REQUEST..... | 18 |
| COMBINATION OF INTERNAL AND EXTERNAL DEFECTS | 19 |
| DEFECTS (QUALITY AND CONDITION)..... | 20 |
| EXTERNAL DEFECTS | 20 |
| AIR CRACKS (C) | 20 |
| BRUISES (Q & C) | 21 |
| CLEANNESS (Q)..... | 22 |
| ADHERING DIRT AND STAINING | 23 |
| LOOSE DIRT, CLOUDS OF DIRT, ROCKS OR OTHER FOREIGN MATTER..... | 23 |
| CUTS/CLIPPED ENDS (Q)..... | 24 |
| FIGURES 1, 2, AND 3..... | 25 |
| CORKY RING SPOT (C)..... | 29 |
| DRIES STEMS | 29 |
| ELEPHANT HIDE (Q) | 29 |
| ENLARGED LENTICELS (Q & C) | 30 |
| EXTERNAL SURFACE DISCOLORATION (C)..... | 30 |
| FIRMNESS (C)..... | 31 |
| FOLDED ENDS (Q)..... | 31 |
| FLATTENED OR DEPRESSED AREAS (C) | 32 |
| FLEA BEETLE (Q)..... | 33 |
| FREEZING/FREEZING INJURY (Q & C) | 33 |
| GRASS DAMAGE (Q)..... | 34 |
| GREENING (C) | 35 |
| GROWTH CRACKS (Q)..... | 35 |
| GRUB DAMAGE (Q) | 36 |
| MECHANICAL DAMAGE (Q)..... | 36 |
| NEMATODE (ROOT KNOT) (Q) | 37 |
| PINK EYE (C)..... | 37 |
| RHIZOCTONIA (BLACK SCURF) (Q)..... | 38 |
| RODENT AND BIRD DAMAGE (Q)..... | 38 |
| ROUGH RAISED NETTING (Q)..... | 38 |
| RUSSETING (Q)..... | 39 |
| SCAB (Q) | 39 |
| PITTED SCAB (Q) | 39 |
| RUSSET SCAB (Q) | 40 |
| SURFACE SCAB (Q)..... | 40 |
| POWDERY SCAB (Q)..... | 40 |
| SECOND GROWTH (Q)..... | 41 |
| SHAPE (Q) | 41 |
| SILVER SCURF (C) | 42 |
| SIMILAR VARIETAL CHARACTERISTICS (Q)..... | 42 |
| SKIN CHECKS (C)..... | 43 |

| | |
|--|-----------|
| SPROUTS (EXTERNAL) (C) | 43 |
| INDIVIDUAL SAMPLING AND REPORTING REQUIREMENTS FOR SPROUTS | 44 |
| U.S. No. 1 QUALITY FOR SPROUTS..... | 45 |
| NEW POTATO GROWTH ATTACHED BY FLESHY STEMS (Q) | 45 |
| SUNBURN (Q) | 45 |
| SUNKEN DISCOLORED AREAS (C)..... | 46 |
| SUNKEN DISCOLORED AREAS WITH UNDERLYING FLESH DISCOLORED (C) | 46 |
| SUNKEN DISCOLORED STICKY AREAS (C) | 47 |
| SURFACE CRACKS (Q) | 47 |
| TUBER MOTH DAMAGE (C)..... | 48 |
| WIREWORM (Q) | 48 |
| INTERNAL DEFECTS | 49 |
| SAMPLING TO DETERMINE THE PRESENCE OF INTERNAL DEFECTS | 50 |
| METHODS OF CUTTING TO DETERMINE INTERNAL DEFECTS | 51 |
| METHOD OF CUTTING TO DETERMINE EXTERNAL OR INTERNAL WASTE..... | 53 |
| BLACKHEART (C) | 53 |
| HEAT OR DROUGHT NECROSIS (Q)..... | 53 |
| HOLLOW HEART OR HOLLOW HEART WITH DISCOLORATION (Q) | 54 |
| INGROWN SPROUTS (C)..... | 55 |
| INTERNAL BLACK SPOT (C) | 55 |
| INTERNAL BROWN SPOT (Q) | 55 |
| INTERNAL MAHOGANY BROWNING (C)..... | 56 |
| INTERNAL PINK TO PURPLE DISCOLORATION (C)..... | 56 |
| INTERNAL POTATO NECROSIS (C)..... | 57 |
| LIGHT BROWN DISCOLORATION (BROWN CENTER) (Q) | 58 |
| NET NECROSIS (C)..... | 58 |
| STEM END BROWNING (C)..... | 59 |
| VASCULAR DISCOLORATION (C) | 59 |
| GUIDE FOR MAXIMUM AREA ALLOWED OF HOLLOW HEART, HOLLOW HEART WITH DISCOLORATION, OR LIGHT BROWN DISCOLORATION (BROWN CENTER)..... | 60 |
| DRY ROT, SOFT ROT AND WET BREAKDOWN..... | 61 |
| CLASSIFYING AND CERTIFYING ROTS | 61 |
| ALTERNARIA TUBER ROT (EARLY BLIGHT) (C) | 62 |
| BACTERIAL RING ROT (C) | 62 |
| BLACKLEG TUBER ROT (C) | 63 |
| BROWN ROT (SOUTHERN BACTERIAL WILT) (C) | 63 |
| FUSARIUM TUBER ROT (C)..... | 64 |
| JELLY END ROT (GLASSY END ROT) (C) | 65 |
| LATE BLIGHT TUBER ROT (C)..... | 65 |
| LEAK (C) | 66 |
| PINK ROT (C) | 66 |
| SCLEROTIUM ROT (C)..... | 66 |
| SLIMY SOFT ROT (C)..... | 67 |
| WET BREAKDOWN (C)..... | 67 |

| | |
|---|-----------|
| FINGERLING POTATOES | 68 |
| FRENCH FINGERLING | 68 |
| PART 2: INSPECTION INSTRUCTIONS FOR SEED POTATOES..... | 69 |
| GENERAL..... | 69 |
| TOLERANCES..... | 70 |
| APPLICATION OF TOLERANCES..... | 70 |
| SIZE | 70 |
| REPORTING BACTERIAL RING ROT | 71 |
| APPENDIX I: U.S. GRADE STANDARDS..... | 73 |
| UNITED STATES STANDARDS FOR GRADES OF POTATOES | 73 |
| UNITED STATES STANDARDS FOR GRADES OF SEED POTATOES | 86 |
| APPENDIX II: PERCENTAGE CHART..... | 91 |
| APPENDIX III: CERTIFICATE EXAMPLES..... | 92 |
| EXAMPLE 1: FV-184 NOTESHEET | 92 |
| EXAMPLE 1: FV-184 CERTIFICATE..... | 93 |
| EXAMPLE 2: FV-300 NOTESHEET (FRONT)..... | 94 |
| EXAMPLE 2: FV-300 NOTESHEET (BACK)..... | 95 |
| EXAMPLE 2: FV-300 CERTIFICATE..... | 96 |
| EXAMPLE 3: FV-300 NOTESHEET (FRONT)..... | 97 |
| EXAMPLE 3: FV-300 NOTESHEET (BACK)..... | 98 |
| EXAMPLE 3: FV-300 CERTIFICATE..... | 99 |
| EXAMPLE 4: FV-300 NOTESHEET (FRONT)..... | 100 |
| EXAMPLE 4: FV-300 NOTESHEET (BACK)..... | 101 |
| EXAMPLE 4: FV-300 CERTIFICATE..... | 102 |
| EXAMPLE 5: FV-300 FEIRS CERTIFICATE | 103 |
| EXAMPLE 6: FV-300 FEIRS CERTIFICATE | 104 |

POTATO



PART 1: SHIPPING POINT AND MARKET INSPECTION INSTRUCTIONS FOR FRESH POTATOES

GENERAL

Fresh potatoes constitute one of the major products certified by the USDA Fresh Fruit and Vegetable Inspection Service. Shipments and inspections are made every month of the year from one or more producing areas, either as being freshly harvested or from storage.

Each inspector should study these instructions and become thoroughly familiar with the procedures as outlined herein. A complete knowledge of the requirements of the U.S. Standards for Grades of Potatoes is absolutely essential in making inspections.

The inspector should have a copy of the U.S. Standards for Grades of Potatoes (see Appendix I), "Official Visual Aids for Potatoes" (USDA Visual Aid Pot.-L-1 May 1998), and color comparators POT-CC 1 and POT-CC 2 available at all times for ready reference.

Additional local instructions and instructions applying to state grades may be furnished by your supervisor.

REPRESENTATIVE SAMPLING

The importance of obtaining representative samples cannot be over emphasized. Accurate certification is possible only if the samples examined are truly representative of the entire lot or accessible portion. All portions of a lot or load should receive the same attention in sampling regardless of the difficulty involved in reaching all layers or parts of a lot or load. Anytime the entire lot requested is not accessible for sampling, the inspection and certificate must be restricted to the accessible portion.

Size of Samples

§51.1548 Samples for grade and size determination. Individual samples shall consist of at least 20 pounds. When individual packages contain at least 20 pounds, each individual sample is drawn from one package; when packages contain less than 20 pounds, a sufficient number of adjoining packages are opened to provide at least a 20-pound sample. The number of such individual samples drawn for grade and size determination will vary with the size of the lot.

Although the sample size must be at least 20 pounds, larger size samples, such as the entire container, may be examined when instructed to do so by the supervisor or at applicant's request. Also, count may be used as the method of determining percentages when potatoes are packed for size B or smaller. However, the sample size must still be at least 20 pounds.

Whenever defects exceed the sample or lot tolerance in one or more samples, examine the entire contents, when practical, of at least one of these samples. Never double the sample size to 40 pounds. For example, when the sample or lot tolerance is exceeded in a sample packed in a 50 pound carton, run the entire 50 pounds. When the sample or lot tolerance is exceeded in a sample from a 2000 pound tote, it is not practical to run the entire container; therefore, the sample size remains at 20 pounds.

For potatoes packed in consumer units, a sufficient number of adjoining units are opened to provide at least a 20 pound sample. It is not necessary to double the sample size of consumer units when the sample or lot tolerance is exceeded.

For sample size and sampling procedure to determine the presence of internal defects, please see the **Internal Defects Section**.

Number of Samples

It is the inspector's responsibility to examine enough samples to ensure an accurate picture of the lot.

Shipping Point

At shipping point, the supervisor may issue instructions as to the minimum number of samples required for each size lot. The inspector may determine the number of samples drawn for each combination of sizes, containers (master or individual) and brands, according to the following guidelines:

| NUMBER OF CONTAINERS | MINIMUM NUMBER OF SAMPLES |
|-----------------------------|--|
| 1 – 49 | 2 (1 for on-line) |
| 50 – 99 | 2 |
| 100 – 199 | 3 |
| 200 – 299 | 4 |
| 300 – 499 | 5 |
| 500 – over | add 1 sample for each additional 100 containers or portions thereof. |

NOTE: All consumer packages not packed in master containers should be sampled on a hundredweight basis equivalent to the above chart.

Market

As a general rule, a minimum of 1% of the lot must be examined at the market. For lots of less than 300 packages, a minimum of 3 samples must be examined. For

individual lots over 2000 packages, sample at the rate of 2/3 of 1% for each lot. To ensure an accurate description of the lot, it is the inspector's responsibility to examine additional representative samples when the quality, condition, or size in samples is decidedly different. For example, more samples should be taken when encountering irregular amounts of soft rot to ensure that the high sample tolerance allowed for soft rot (3 to 6% out of every 10 samples, depending on grade) is not overlooked.

Inspection of Bulk Loads or Bulk Bins

In the case of bulk loads, the entire load will be considered the sample unit. When the load is divided into sections and a material difference in quality, condition or size exists between the potatoes in the different sections, each section may be treated as a separate lot.

The sample unit consists of representative sub-samples, which are randomly taken throughout the lot. The sub-samples are individually recorded, as taken, on the notesheet. The "Application of Tolerances" does not apply to the individual sub-sample. Also, do not range the sub-samples on the certificate; average them together and state as a percentage. For example, "7% undersize, 4% old cuts, 6% soft rot."

Potatoes in bulk bins or totes are treated the same as potatoes in sacks, cartons and other types of containers and are subject to the "Application of Tolerances." Generally, the load is restricted since only the upper 18 inches or 2 feet are accessible.

At shipping point, potatoes are often held in bulk holding bins. The bins may hold 100,000 pounds or more of product. Inspectors should not obtain official samples of product from these bins when inspecting under marketing orders, military orders, USDA purchases or certification for Canadian destinations. It is acceptable to do a voluntary quality control inspection on these large bins at applicant's request. The "Application of Tolerances" does not apply to individual sub-samples from bulk holding bins.

TOLERANCES

§51.1546 Tolerances. To allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances by weight or equivalent basis, are provided as specified.

(a) For defects.

(1) U.S. No. 1

(i) At Shipping Point. A total of 8 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(A) 5 percent for external defects;

(B) 5 percent for internal defects; and

(C) Not more than a total of 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547

(ii) En route or at Destination. A total of 10 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That included in this tolerance not more than a total of 8 percent shall be allowed for permanent defects: *And provided further*, the following percentages shall be allowed for the defects listed:

(A) 7 percent for external defects, including therein not more than 5 percent for permanent defects;

(B) 7 percent for internal defects, including therein not more than 5 percent for permanent defects; and

(C) Not more than a total of 2 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(2) U.S. Commercial.

A total of 20 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(i) 10 percent for potatoes which fail to meet the requirements for U.S. No. 2 grade, including therein not more than:

(ii) 6 percent for external defects;

(iii) 6 percent for internal defects; and

(iv) Not more than a total of 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(3) U.S. No. 2.

(i) At Shipping Point. A total of 10 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(A) 6 percent for external defects;

(B) 6 percent for internal defects; and

(C) Not more than a total of 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(ii) En route or at Destination. A total of 12 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided*, That included in this tolerance not more than a total of 10 percent shall be allowed for permanent defects: *And provided further*, the following percentages shall be allowed for the defects listed:

(A) 8 percent for external defects, including therein not more than 6 percent for permanent defects;

(B) 8 percent for internal defects, including therein not more than 6 percent for permanent defects; and

(C) Not more than a total of 2 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(b) For off-size.

(1) Not more than 3 percent of the potatoes in any lot may be smaller than the required or specified minimum size except that a tolerance of 5 percent shall be allowed for potatoes packed to meet a minimum size of 2-1/4 inches or larger in diameter or 5 ounces or more in weight. In addition, not more than 10 percent may be larger than any required or specified maximum size. See §51.1547.

Summary of Tolerances

| U.S. No. 1 – Shipping Point | U.S. No. 1 – En Route or At Destination |
|---|---|
| Total defects: 8%, including 5% external defects, 5% internal defects, and Included in external or internal defects: 1% frozen, soft rot or wet breakdown | Total defects: 10%, including 8% permanent defects, Included in total defects: 7% external defects, including 5% permanent defects, Included in total defects: 7% internal defects, including 5% permanent defects, and Included in external or internal defects: 2% frozen, soft rot or wet breakdown |

Summary of Tolerances Continued

| U.S. Commercial – Shipping Point / En Route or At Destination | |
|---|---|
| <p>Total defects: 20%, including 10% serious damage, Included in serious damage: 6% external defects, 6% internal defects, and Included in external or internal defects: 1% frozen, soft rot or wet breakdown</p> | |
| U.S. No. 2 – Shipping Point | U.S. No. 2 – En Route or At Destination |
| <p>Total defects: 10%, including 6% external defects, 6% internal defects, and Included in external or internal defects: 1% frozen, soft rot or wet breakdown</p> | <p>Total defects: 12%, including 10% permanent defects, Included in total defects: 8% external defects, including 6% permanent defects, Included in total defects: 8% internal defects, including 6% permanent defects, and Included in external or internal defects: 2% frozen, soft rot or wet breakdown</p> |
| Off-Size (All Grades) | |
| <p>Undersize: 3%, except 5% undersize for 2-1/4 inch or 5 ounce minimum. Oversize: 10%</p> | |

APPLICATION OF TOLERANCES

§51.1547 Application of tolerances. Individual samples shall have not 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.

Summary of Application of Tolerances

| U.S. No. 1 – Shipping Point | U.S. No. 1 – En Route or At Destination |
|---|--|
| <p>Total Defects: 16%, including 10% external defects, 10% internal defects, and Included in external or internal defects: 2% frozen, soft rot or wet breakdown</p> | <p>Total defects: 20%, including 16% permanent defects, Included in total defects: 14% external defects, including 10% permanent defects, Included in total defects: 14% internal defects, including 10% permanent defects, and Included in external or internal defects: 4% frozen, soft rot or wet breakdown (6% permitted in 1/10 of samples)</p> |
| U.S. Commercial – Shipping Point / En Route or At Destination | |
| <p>Total defects: 40%, including 20% serious damage, Included in serious damage: 12% external defects, 12% internal defects, and Included in external or internal defects: 2% frozen, soft rot or wet breakdown – 3% permitted in 1/10 of samples en route or at destination</p> | |
| U.S. No. 2 – Shipping Point | U.S. No. 2 – En Route or At Destination |
| <p>Total defects: 20%, including 12% external defects, 12% internal defects, and Included in external or internal defects: 2% frozen, soft rot or wet breakdown</p> | <p>Total defects: 24% including 20% permanent defects, Included in total defects: 16% external defects, including 12% permanent defects, Included in total defects: 16% internal defects, including 12% permanent defects, and Included in external or internal defects: 4% frozen, soft rot or wet breakdown (6% permitted in 1/10 of samples)</p> |
| Off-Size (All Grades) | |
| <p>Undersize: 6%, except 10% undersize for 2-1/4 inch or 5 ounce minimum Oversize: 20%</p> | |
| <p><i>At least one defective and one off-size potato may be permitted in any sample. And provided further, That the averages for the entire lot are within the tolerances specified for the grade.</i></p> | |

NOTESHEET AND CERTIFICATE

Entries on the notesheet and certificate must be kept in a legible and accurate manner. It is mandatory that all information appearing on the certificate be supported by information on the notesheet. It is the responsibility of the inspector to ensure that all information is properly recorded. Notations will be recorded so that anyone familiar with inspection procedures can interpret them and write a certificate. Also, notesheets and certificates are prima facie evidence and must withstand legal scrutiny.

Detailed instructions pertaining to date, inspection point, place of inspection, type of carrier, lading, etc., which are not covered by these instructions may be found in the General Inspection Instructions. Additional information and instructions may be given by your supervisor.

Product

The common name "Potatoes" will be used to describe this commodity in the product heading. Color and/or type shall be used in conjunction with "Potatoes" such as "Long White," "Round Red," "Round White," "Russet," "Other," or "Mixed."

The term "Other" is applied to potatoes that have skin and/or flesh colors that differ from white flesh potatoes that have white, red, or russet skin. For example, potatoes having yellow flesh, or having bi-colored skin, or having purple skin and flesh, etc., would be described as "Potatoes, Other." When needed, the potatoes can be further described in the "OTHER" or "REMARKS" section, such as "Yellow flesh potatoes," "Bi-color red and yellow potatoes," or "Purple skin and flesh potatoes."

The term "Mixed" is applied to lots having different types and/or colors of potatoes packed in the same container or master container. For Example, consumer units with round red, white, and purple potatoes would be described as "Potatoes, Mixed." Again, additional description can be reported in the "OTHER" or "REMARKS" section, such as "Round red, white, & purple potatoes mixed in bags."

Number/Type of Containers

The number of containers will always be reported. In the market and at shipping point locations for stationary lot certification, the inspector shall always verify the container count provided by the applicant for each lot and report it as the "inspector's count." If the number of containers available for inspection does not match the application, it is the inspector's responsibility to confirm that the amount presented for inspection constitutes the lot. If an accurate count cannot be determined, the inspector may report the count at someone else's authority. However, the reason for doing so must be reported on the notesheet (e.g., numerous pallets with mixed product).

At shipping point locations for "days-run" certification, the applicant generally provides a manifest for count and it is acceptable to use this for the number of containers.

Potatoes are packed in many types of containers. They are commonly packed in volume filled fiberboard cartons or paper bags holding 50 pounds. Film or mesh consumer bags containing 3 to 10 pounds, which are placed in master containers netting up to 50 pounds, are popular packs. Potatoes are also packed in burlap sacks holding 100 pounds and totes or bins accommodating 1000 to 2000 pounds. Creamers and fingerlings may be packed in 3/4, 1, 1.5, 2, 3, 4, or 5 pound clamshells shipped in master containers of 6, 8, 10, or 12 packs. Russet baking potatoes may be individually wrapped in clear film or foil and packed in cartons holding 15 to 25 pounds. These are the major packs and containers currently available, but this is not an exhaustive list, since the marketing of potatoes continually evolves.

Brands/Markings

The brand, variety, size, count, grade, weight, point of origin and other important information appearing on the container should be reported on the notesheet in the "Brands/Markings" section. Only the brand name and other key markings necessary to properly identify the lot for certification should appear in this section on the certificate.

Origin

The inspector should not make a positive statement on their own authority, but when container markings list the state or country of origin, it should be quoted in the appropriate space on the notesheet and the certificate. If origin is not marked, it is the inspector's responsibility to make an effort to obtain this information from the applicant. This policy is necessary because some firms may use one mark on the same product packed in several states. The inspector can certify only to the marks and has no means of verifying in which state or country the potatoes were grown.

CONDITION OF PACK

Potatoes do not have any packing requirements. However, when potatoes are packed in containers such as cartons or bins, report the fill on the back of market notesheets in the Pack Section using the following terms:

Well filled means the contents are level with top edge of the container.

Fairly well filled means the contents are not in contact with the lid or cover, but not more than 1-1/2 inches below the lid or cover.

Slack means the contents are more than 1-1/2 inches below the lid or cover. Report the amount of slackness in inches or fractions of inches below the lid.

When potatoes are packed in bags or sacks, do not report pack.

TEMPERATURE OF PRODUCT

Inspectors would not normally determine or report temperatures at shipping point. However, due to the importance of the pulp temperature of fresh fruits and vegetables when in transit or at destination, it is essential that the inspector accurately determine and report the temperature or range in temperatures on each lot. Pulp temperature should be reported regardless of the location of the product, whether in the carrier, warehouse, or stacked on the platform. Pre-cool the thermometer in order to obtain true readings and report all temperatures to the nearest whole degree.

A minimum of three temperatures for each lot must be taken and recorded on the notesheet. More temperatures must be taken if the lot is abnormally cold, heated, or there is a specific request for temperature. The location in the lot and/or load must be specified in greater detail when additional temperatures are taken.

SIZE

Size is part of grade and the U.S. grades for potatoes have the following size requirements:

U.S. No. 1 – 1-7/8 inches in diameter minimum unless otherwise specified.

U.S. No. 2 – 1-1/2 inches in diameter minimum unless otherwise specified.

§51.1545 Size. The minimum size, or minimum and maximum sizes may be specified in connection with the grade in terms of diameter or weight of the individual potato, or in accordance with one of the size designations in Table I or Table II: *Provided*, That sizes so specified shall not be in conflict with the basic size requirements for the grade.

(b) When size is designated as shown in Table II, the corresponding weight ranges shall apply. These size designations may be applied to potatoes packed in any size container: *Provided*, that the weight ranges are within the limits specified.

TABLE I

| Size designation | Minimum diameter ¹ or weight | | Maximum diameter or weight | |
|---------------------------|---|------------------|----------------------------|------------------|
| | Inches | Ounces | Inches | Ounces |
| Creamer..... | 3/4 | (³) | 1-5/8 | (³) |
| Chef..... | 2-3/4 | 8 | 4-1/2 | 28 |
| Size A ² | 1-7/8 | (³) | (³) | (³) |
| Size B..... | 1-1/2 | (³) | 2-1/4 | (³) |
| Small..... | 1-3/4 | (³) | 2-1/2 | 6 |
| Medium..... | 2-1/4 | 5 | 3-1/4 | 10 |
| Large..... | 3 | 10 | 4-1/2 | 28 |

¹ Diameter means the greatest dimension at right angles to the longitudinal axis, without regard to the position of the stem end.

² In addition to the minimum size specified, a lot of potatoes designated as Size A shall contain at least 40 percent of potatoes which are 2-1/2 inches in diameter or larger or 6 ounces in weight or larger.

³ No requirement.

TABLE II
[Ounces]

| Size designation | Minimum weight | Maximum weight |
|------------------|----------------|----------------|
| Under 50..... | 15 | |
| 50..... | 12 | 19 |
| 60..... | 10 | 16 |
| 70..... | 9 | 15 |
| 80..... | 8 | 13 |
| 90..... | 7 | 12 |
| 100..... | 6 | 10 |
| 110..... | 5 | 9 |
| 120..... | 4 | 8 |
| 130..... | 4 | 8 |
| 140..... | 4 | 8 |
| over 140..... | 4 | 8 |

Reporting Size

The diameter of a potato is measured by passing the potato through a sizer. USDA sizers for potatoes consist of rings with round openings that come in many different diameters. For the use of other sizers, such as the square sizers recognized in international trade (UNECE Standards), please see the **Size Section** under **Part II: Inspection Instructions for Seed Potatoes**.

When measuring the diameter, drop the potato through the opening so that its longitudinal axis is at right angles to the sizer, without regard to the position of the stem end.

Minimum and/or maximum sizes may be specified in terms of weight or diameter. However, long type potatoes should generally be reported in ounces and round type by diameter. Typically when a range of more than 1 inch or 4 ounces is encountered a "mostly" statement in addition to minimum and maximum size should be reported. However, when reporting size for a size designation in Table I or II, it may not be necessary to report a "mostly" statement (see sections **Size A** and **Containers Marked to Size or Count**).

When describing size by weight, the range and "mostly" statement should be shown in ounces, with the exception that "1-7/8 inches in diameter or 4 ounces," "2 inches in diameter or 4 ounces," etc., may be used to indicate the lower end of the size range when these terms are appropriate.

Shipping Point Inspections:

When reporting range of size, use general terms if needed. For example, the lot is sized for 2 inch minimum. On the notesheet, the range is 1-3/4 to 2-3/4 inches in diameter with an average of 2% less than 2 inches. The size statement on the certificate would be "Generally 2 to 2-3/4 inches in diameter, average 2% undersize."

En Route or Destination Inspections:

When reporting range of size, do not begin the size statement with a general term, such as "generally" or "mostly." Report the entire range. For example, the lot is sized for 2 inch minimum. On the notesheet, the range is 1-3/4 to 2-3/4 with an average of 2% less than 2 inches. The size statement on the certificate would be "1-3/4 to 2-3/4 inches in diameter. Undersize within tolerance." The 2% undersize would not be reported on the certificate, unless requested by the applicant, since the lot still meets the size requirements. If the undersize is 7% instead of 2%, the lot would fail, and the size statement would be "1-3/4 to 2-3/4 inches in diameter." The 7% undersize would be reported in the "AVERAGE DEFECTS" section.

Size A

Specifications for Size A were inserted in the grades to provide a greater range in size, versus those potatoes which are only slightly over the minimum size for U.S. No. 1 grade. Determination of percentages, by weight, for size A will be made when requested by the applicant, when the containers are so marked or when it is a general practice to certify on this basis in the area of production.

When certifying on the basis of Size A, it is necessary to clearly indicate whether or not 40% by weight are 2-1/2 inches in diameter or larger, or are 6 ounces or larger. If the individual potato meets either the minimum diameter or minimum weight, it meets the requirements for Size A. In addition, a minimum size larger than 1-7/8 inches may be certified, but no lot may be certified as Size A if the minimum size is less than 1-7/8 inches.

The inspector should examine each sample to ensure the lot meets Size A; however, not all weights and/or diameters need to be recorded, since an exact lot percentage for Size A is not required. After recording a sufficient number of weights and/or diameters, the inspector only needs to check off the remaining samples to show that they have been examined to meet Size A. For an example of how to report Size A, see back of notesheet to **Example 3 in Appendix III.**

As mentioned, when the stock meets the specifications of Size A, an exact lot percentage of 2-1/2 inches or larger, or 6 ounces or larger, as the case may be, need not be given unless specifically requested by the applicant. It will be satisfactory to report the overall range followed by "40% or more 2-1/2 inches in diameter or larger" or "40% or more 6 ounces or larger." When a lot inspected for Size A fails to meet the specification, the inspector must report "Fails to meet Size A" except when the applicant only requested Size A for informational purposes. If Size A was only requested for informational purposes and it failed to make the size, do not report "Fails to meet Size A." Instead, report a "mostly" range within the overall range, such as "mostly 5 to 7 ounces."

Reporting Percentages of a Specified Size and Larger

§ 51.1546 (b) (2) When a percentage of the potatoes is specified to be of a certain size and larger, individual samples shall have not less than one-half of the percentage specified: *Provided*, That the averages for the entire lot is not less than the percentage specified.

The percentage of a certain size and larger, such as 10 ounces or larger, may be determined upon request of the applicant. The U.S. Standards for Grades of Potatoes require that when a percentage of a certain size and larger is specified, individual samples must contain at least one-half the specified percentage.

In connection with Size A, and in other instances where a percentage of a certain size and larger is specified, the specified percentage is a definite requirement. However, individual samples may contain as little as 1/2 of the percentage specified, provided the average for the lot as a whole is within the percentage specified. For example, to meet Size A requirements, individual samples must contain at least 20% 2-1/2 inches or 6 ounces or larger and the average of all samples cannot be less than 40% 2-1/2 inches or 6 ounces or larger.

Certifying Minimum Size

The size designations "Chef," "Medium," and "Large" require that individual potatoes be of a certain minimum diameter or weight. If the potato meets either the minimum diameter or the minimum weight, it meets the minimum size requirements. In determining the percentage of potatoes which are under a minimum diameter, it is generally best to first size the potatoes by ring measurement. All of the potatoes under the required minimum diameter should be weighed. Only potatoes which weigh less

than the required weight are considered undersize. Some marketing agreements provide for a minimum diameter or weight.

When the minimum size is specified in the grade, such as 1-7/8 inch for U.S. No. 1, it need not be reported in the grade statement. It will only be necessary to state the size in connection with the grade when it is "otherwise specified." For example, "U.S. No. 1, 2 inch or 4 ounce minimum" or "U.S. No. 1, 2 inch minimum diameter" or "U.S. No. 1, 100 Size" or "U.S. No. 1, Medium."

Certifying Maximum Size

In Table I when determining maximum size, individual potatoes cannot exceed the maximum diameter or weight requirements. For example, under "Medium," a potato larger than 3-1/4 inches in diameter or weighing more than 10.49 ounces is considered oversize (see following section).

Reporting Overweight

Potatoes which exceed the specified maximum weight by less than one-half ounce will be disregarded. Potatoes, which are one-half ounce or more above the maximum weight, will be scored as oversize. **This policy applies only to oversize.**

Table II provides minimum and maximum weights, in ounces, for the various count size designations based on the standard 50-lb. carton. These weight ranges apply to potatoes packed in any size container.

Containers Marked to Size or Count

When packages are marked:

"80, "90", "100", etc., or
"80 size," "90 size," "100 size," etc., or
"approx. 80," "approx. 90," "approx. 100," etc.

Report conformity or non-conformity to marked size.

When packages are marked to count or approximate count:

Report range in weight only. Establish minimum and maximum sizes. Whenever the word "count" is used on the container do not use the size designations in Table II. In either case, count shall be reported only at specific request of the applicant. When so requested, report the range in number of potatoes per container and the average for the lot.

Do not report conformity or non-conformity with marked count under the grade or size headings. Lots which fail to conform to marked size or exceed PACA allowances for off-count shall be reported to the PACA Division.

Note: When the request for an inspection is made, the applicant should be informed that count will not be reported unless specifically requested.

When the lot is marked to denote one of the size designations in Table II, it is not necessary to show a range in size unless the lot fails to meet the minimum and/or maximum weight requirements for that particular size designation.

For the purpose of determining size, each "size," "approx. size," "count" or "approx. count" will be treated separately if more than one is noted. For additional instructions on reporting the "count" or "approx. count" refer to the section titled "PACA Ruling on Grade and Size and Markings" in General Inspection Instructions.

Certifying Size without Reference to Grade

Upon request, size may be certified without reference to quality and condition factors. Size should be reported as usual. The certificate should show the proper restriction under "REMARKS," such as, "Inspection and certificate restricted to size only at applicant's request."

Use of Undersize and Oversize within Tolerance

When no sample exceeds the size tolerance, it will be satisfactory to state "Undersize (or oversize) within tolerance" or "Meets size as marked." When no sample exceeds double the size tolerance and averages within tolerance, the statement "Undersize (or oversize) average within tolerance" should be used. The term "off-size" may be used when both undersize and oversize are involved.

When the lot fails to grade either because of the average or because individual samples exceed double the size tolerance, report the range, regardless of how narrow it may be, and the average in actual figures.

Actual percentages of undersize (or oversize) must be reported in the following cases:

- At request of the applicant.
- When determining the percentage of U.S. No. 1 quality.
- When undersize (or oversize) exceeds the tolerance.

When Undersized or Oversized Specimens are Also Defective

Undersize and oversize specimens which are also defective should be scored twice; first as off-size, second as a grade defect. This is necessary because the grades have separate tolerances for off-size and grade defects.

Generally the percentage of off-size specimens that are also defective will be negligible, and will make no material difference in the grade certification. When the percentage of off-size specimens, that are also defective, amounts to 1% or more, the percentage of defective specimens which are also offsize must be reported.

Report this information in the "OTHER" section on market certificates and in the "DESCRIPTION OF PRODUCT" section on shipping point certificates. For example:

“2% undersize also included in the 4% quality defects.” Oversize should be treated the same way.

MATURITY AND SKINNING

The U.S. Standards for Grades of Potatoes do not have any maturity or skinning requirements. However, if the applicant requests maturity, apply the following maturity definitions:

§51.1554 Mature. “Mature” means that the skins of the potatoes are generally firmly set and not more than 5 percent of the potatoes in the lot have more than one-tenth of the skin missing or “feathered.”

§51.1555 Fairly well matured. “Fairly well matured” means that the skins of the potatoes are generally fairly set and not more than 10 percent of the potatoes in the lot have more than one-fourth of the skin missing or “feathered.”

The term “Mature” should be used to describe potatoes which have reached full development, are firm, and have a tough and tight skin. The term “Fairly Well Matured” has the same definition as “Slightly Skinned” (see below).

Also, if the applicant requests the degree of skinning, apply the following skinning definitions:

§51.1549 Skinning. (a) The following definitions provide a basis for describing lots of potatoes as to the degree of skinning whenever description may be appropriate:

(1) "Practically no skinning" means that not more than 5 percent of the potatoes in the lot have more than one-tenth of the skin missing or "feathered;"

(2) "Slightly skinned" means that not more than 10 percent of the potatoes in the lot have more than one-fourth of the skin missing or "feathered;"

(3) "Moderately skinned" means that not more than 10 percent of the potatoes in the lot have more than one-half of the skin missing or "feathered;" and

(4) "Badly skinned" means that more than 10 percent of the potatoes in the lot have more than one-half of the skin missing or "feathered."

The degree of skinning on individual potatoes refers to the amount of skin missing or "feathered." Usually the more immature the potatoes, the greater the degree of skinning.

The degree of skinning may be reported in general terms unless specifically requested to report actual percentages. The term "new potatoes" should not be used.

EXAMPLES:

- Slightly to badly, most moderately skinned.
- Generally moderately, few badly skinned.
- Mostly slightly, some moderately skinned.

Such statements should be based upon a record of skinning for each sample on the notesheet as:

| SLIGHTLY SKINNED | MODERATELY SKINNED | BADLY SKINNED |
|-----------------------------|-------------------------------|--------------------------|
| 20% | 70% | 10% |
| 00% | 92% | 08% |
| 75% | 25% | 00% |

Visual Aids Refer to photos 23 - 26.

Maturity/Skinning Classification to be Used upon Request

In case such a classification is requested, the details should be reported on the certificate. Request for classification for maturity or skinning at times may be made by buyers who contract to purchase lots of potatoes with a provision that they do not exceed a certain degree of skinning. In addition, marketing orders may have maturity (skinning) requirements for importing and exporting potatoes in and out of the U.S.

For example, if a buyer contracted to purchase a U.S. No. 1 lot to be not more than "moderately skinned" and requested inspection on this basis, and the inspector found an average of 15% badly skinned potatoes in the lot, it would fail to meet contract specifications. Such a classification should be included as part of the grade statement, thus: U.S. No. 1, but fails to meet 'moderately skinned' classification due to percentage of badly skinned potatoes. It will be necessary to report in the "Remarks" section of the notesheet and certificate "Percentage of skinning determined and reported at applicant's request."

Inspectors should remember that the percentages shown in the various definitions of maturity and skinning classifications are not tolerances in the sense that they are subject to the application of tolerances to individual samples. For example, in a lot classified as fairly well matured, 10% may be moderately skinned but there is no limitation on the percentage of moderately potatoes in individual samples so long as the average does not exceed 10%.

COMBINATION OF INTERNAL AND EXTERNAL DEFECTS

Occasionally individual potatoes are encountered that exhibit a combination of internal and external defects. The following guidelines should be followed in accordance with the circumstances as outlined below:

When cutting for internal defects (20 pounds or entire sample), a potato with an external defect is found to have an internal defect, and **either** defect would be scorable by itself, the following will apply:

(1) The potato will be scored against the tolerance most affected. When it cannot be determined which tolerance is most affected at the time of running the sample, follow the procedures below for:

- A. Paper notesheet and certificate: Entries will be made for both defects on the notesheet and cross-referenced. Once the inspection is completed, the inspector will go back to determine which tolerance, if any has been affected the most (if no tolerance has been affected more than another, see items 2 and 3 below). Once determined, a line will be drawn through the entry that is not being applied and percentages will be determined based on the final figures.
- B. FEIRS: Entries will be made for both defects on the sample page and cross-referenced in the "Sample Remarks" block. For example, since one-half pound may be scored both for SDA or IBS, record one-half pound to the SDA column and one-half pound to the IBS column. At the bottom of the sample page in the "Sample Remarks" block record "1/2 pound scored both for SDA and IBS. At completion of inspection, amount will be removed from the tolerance least affected." Once the inspection is completed, the inspector will go back to determine which tolerance, if any has been affected the most (if no tolerance has been affected more than another, see items 2 and 3 below). Once determined which defect is most affected, go back and remove the amount (i.e. "1/2 pound") recorded earlier to the tolerance least affected. In the "Explanation" box that pops up after changing the amount, write "See Sample Remarks." Or,

(2) If item 1 above does not apply and one defect is more severe than the other, the more severe defect will be scored (soft rot will always be considered as the more severe defect). Or,

(3) If item 1 above does not apply and **neither** defect is more severe, it is at the inspector's discretion as to which defect to score. When a potato is affected by both internal and external defects and neither defect on its own is scorable (i.e. 4% waste from a bruise, 4% waste from net necrosis) yet in combination the potato is scorable (8% total waste), the inspector should divide the percentage in combination as equally as possible between the defects. For example, a sample has 2 pounds (4%) damage by bruising and 1 pound (2%) damage by net necrosis with 1 pound (2%) damage by a combination of the two. The 2%

combination should be divided, adding one-half pound (1%) to bruising and one-half pound (1%) to net necrosis.

DEFECTS (QUALITY AND CONDITION)

Statements pertaining to freshness, maturity, shape, color, the amount and type of defects, and the amount of decay are shown under the appropriate headings. Factors noted with **(Q)** are considered as **QUALITY** only. **Quality** (also referred to as “**permanent**” defects) are defects which do not change during storage or shipment (shape, scars, etc.). Factors noted with **(C)** will be reported as **CONDITION** on market certificates. Condition defects are factors that are subject to change during shipment or storage, such as sunken discolored areas, internal black spots, and soft rot. Those factors noted with **(Q or C)** may be considered as **QUALITY or CONDITION**, depending on the circumstances.

The grades specify certain factors that are basic to describing the quality and condition of a lot such as "cleanness," "firmness" and "shape." These may be described in general terms unless they fall below the requirements of the grade.

All photo visual aids referred to are found in USDA "Official Visual Aids for Potatoes" POT-L-1 May 1998. The contents of this booklet should be familiar to all graders licensed to inspect potatoes.

EXTERNAL DEFECTS

§51.1564 External defects. “External defects” are defects which can be detected externally. However, cutting may be required to determine the extent of the injury.

When inspecting potatoes, they cannot be held to the same standard of perfection that is required of fruits and many vegetables. It is almost impossible to remove all defects by the ordinary process of commercial grading; furthermore, slight blemishes do not affect the value of the potatoes as they do in the case of many other products. In judging whether a potato is scored or not, consider the appearance factor first. If the appearance is not affected, then consider the waste for external defects (see §51.1564 External defects, Tables III, IV, V, and VI in the standard).

Air Cracks (C)

This defect is characterized by longitudinal cracks, often fresh and without apparent connection with mechanical injury. They usually occur during the harvesting and packing process, although some may occur after packing in very tight packs or if the package is handled roughly.

Scoring Guide

Damage:

When removal causes a loss exceeding 5% of the total weight of the potato, or
When affecting more than 1/3 the length or diameter (whichever is greater) in the aggregate.

Serious damage:

When removal causes a loss exceeding 10% of the total weight of the potato, or
When affecting more than 3/4 the length or diameter (whichever is greater) in the aggregate.

Visual Aids Refer to photos 94 - 96.

Bruises (Q & C)

Bruises are one of the most common defects found in potatoes. Bruises generally show discoloration which may vary as to color but will usually be of a brown, gray or black shade. The skin and flesh of the potato may be broken or torn or may simply show discoloration. The size and shape of a bruise may vary considerably.

At shipping point all bruises are considered quality defects. En route or at destination inspectors must make the distinction as to whether the bruise is "old" or "fresh." Old bruises are considered quality defects. Fresh bruises are considered condition defects.

When the age of the bruise is not obvious at first, upon cutting into the flesh the following characteristics should help in making a determination:

Fresh bruises are typically a shade of pink or a bright shiny gray to jet black in color and show no sign of dry or dry starchy flesh.

Old bruises are typically dull gray or light brown and other colors which show a dry or starchy appearance in the flesh. Also, old bruises may show a separation or some corkiness of the flesh.

A deposit of powdery, discolored starch will frequently be noticed in bruises or cuts. Inspectors should be careful not to confuse this starch deposit with Fusarium Rot. The difference can be readily noted upon cutting the potato. If the flesh next to the deposit is affected, the condition has been caused by some decay. If the flesh is sound, it should be considered only as a bruise.

Scoring Guide

Damage:

When removal causes a loss of more than 5% of the total weight of the potato,
or

When affecting more than 5% of the surface area in the aggregate (i.e. 3/4 inch on a 2-1/2 inch or 6 ounce potato).

Serious damage:

When removal causes a loss of more than 10% of the total weight of the potato,
or

When affecting more than 10% of the surface area in the aggregate (i.e. 1-1/4
inches on a 2-1/2 inch or 6 ounce potato).

Visual Aids Refer to photos 97 - 99.

Cleaness (Q)

Few lots that have not been properly washed or brushed will deserve the terms "clean" and "bright" but the fact that they have been washed or brushed does not necessarily mean they merit such a description. Inspectors must learn the relative degrees of cleanness in order to properly describe various lots and should frequently check their judgment with their supervisors.

At the request of the applicant it will be permissible to report the percentage of U.S. No. 1 quality waiving cleanness requirements on unwashed lots of potatoes. Extremely dirty potatoes may mask defects; therefore, if the potatoes fail to meet the minimum cleanness requirement of the grade, samples must be washed and reported as such under remarks. The percentage of U.S. No. 1 Quality will be reported under REMARKS, not under Grade, with the following statement – "At applicant's request inspection based on contract specifications which waive cleanness requirements. Lot approximately 80% U.S. No. 1 Quality other than dirt (samples were washed)."

The U.S. Grades for potatoes have the following requirements for cleanness:

U.S. No. 1: Fairly clean.

U.S. Commercial & U.S. No. 2: Free from serious damage caused by dirt or other foreign matter.

Definitions:

§51.1552 Clean. "Clean" means that at least 90 percent of the potatoes in any lot are practically free from dirt or staining and practically no loose dirt or other foreign matter is present in the container.

§51.1553 Fairly clean. "Fairly clean" means that at least 90 percent of the potatoes in any lot are reasonably free from dirt or staining and not more than a slight amount of loose dirt or foreign matter is present in the container.

Visual Aids Refer to photos 3 - 10.

Adhering Dirt and Staining

Adhering dirt, staining from soft rot or other foreign matter must be considered in determining whether or not the potatoes meet the cleanness requirements of the specified grade.

Scoring Guide

For the U.S. No. 1 grade, if 90% of the potatoes are fairly clean, the remaining 10% can be slightly dirty. Individual potatoes which are more than slightly dirty (i.e. damage or serious damage by dirt) will be scored against the tolerance for grade defects and also included in the 10% allowed for slightly dirty. For example, if 3% of the potatoes were damaged by dirt, you could have 7% slightly dirty (total of 10%) and still meet the requirements for fairly clean. When determining the percentage of U.S. No. 1 quality, deduct only that amount which is damaged by dirt or which is in excess of the 10% that is allowed for potatoes that are slightly dirty or stained.

In U.S. Commercial and U.S. No. 2 grades any potato which is badly caked with dirt or badly stained is a grade defect and must be scored against the tolerance for defects. A badly caked potato is one having caked dirt on more than 1/2 of the surface or an equivalent amount of dirt in excessively thick chunks on a lesser area.

Loose Dirt, Clods of Dirt, Rocks or Other Foreign Matter

When loose dirt or clods of dirt, etc., is a factor in closed containers (bags, cartons, etc.) the entire contents must be used as the sample. As a guide, if more than 1/10 of the containers in a lot have more than the following amounts of loose dirt, clods, etc., the lot cannot be considered as meeting the requirements of fairly clean.

- 100 lb. container - 8 oz.
- 50 lb. container - 4 oz.
- 20 or 25 lb. container - 2 oz.
- Less than 20 lb. container - 1 oz.

When inspecting **bulk loads** of potatoes loose dirt or clods of dirt, etc., is considered a tare and not a grade factor. If it appears that clods or loose dirt will be a tare factor, a minimum sub-sample of 25 lbs. should be drawn to ensure that there is at least 20 lbs. of potatoes for grade and size determination. The weight of loose dirt, clods, etc., will be recorded and subtracted from the total 25 lbs. The percentages for defects and size should then be figured based on the total lbs. of potatoes.

FOR EXAMPLE:

| Sample | Loose Dirt, Clods | (Potatoes) Sample | Defects |
|----------------|--------------------------|--------------------------|----------------------|
| 25 lbs. | 1 lb. (4%) | 24 lbs. | 1.5 lbs. (6%) |

When one percent (1%) or less loose dirt or clods, etc., is found, it should only be recorded on the notesheet. However, when more than one percent (1%) is found, it should be reported on the certificate. The statement should show the cleanness of the potatoes, (adhering dirt), followed by the percentage of loose dirt, clods, etc., in parenthesis. For example: "Generally all potatoes are fairly clean, (3% clods of dirt). Grade defects within tolerance."

Cuts/Clipped Ends (Q)

Cuts are areas where some flesh of the potato has been exposed. They either occur during harvest or when knobs or ends are clipped by grading personnel. Knobs removed are usually distinguished by smooth cuts exposing circular or nearly circular areas on the sides of potatoes. Cuts are injurious in that they open the way for decay.

First a determination must be made as to whether the cut is a clipped end, knob removed or regular cut. If the inspector is not sure do not consider the cut a knob removed. Clipped ends should be obvious.

Scoring Guide

Cuts:

Damage:

When one smooth cut affects more than 5% of the surface area.

Serious damage:

When affecting more than 10% of the surface area in the aggregate or, when a single side cut extends beyond 1/2 the length of the potato.

Clipped Ends:

Damage:

When one smooth cut affects more than 5% of the surface area.

Serious damage:

When potatoes are clipped on both ends, or are clipped on one end and the length of the remaining portion is less than 1-1/2 times the greatest diameter of the cut, or irregular cuts which seriously affect the appearance of the potato.

The U.S. No. 1 and U.S. Commercial grades permit one smooth cut affecting 5% or less of the surface.

In the U.S. No. 2 grade, a long type potato having one clipped end which is fairly smooth, must weigh a minimum of 6 ounces and its length must be at least 1-1/2 times the largest diameter of the clipped end. Such a clipped potato may have no other defect or combination of defects. However, a long type potato with one fairly smooth clipped end, weighing more than 6 ounces and having a length more than 1-1/2 times the diameter of the clipped area, may be affected by other defects or combination of

defects which do not detract from the appearance to a greater extent than is permitted on a U.S. No. 2 potato.

For small long type varieties such as fingerlings, a clipped end will be permitted in the U.S. No. 2 grade if the clipped area does not affect more than 10% of the surface when fairly smooth, or does not affect more than 5% of the surface when rough.

Knobs Removed:

Damage:

When more than one knob is removed, or
When affecting more than 5% of the surface area, or
When the affected area is rough or jagged.

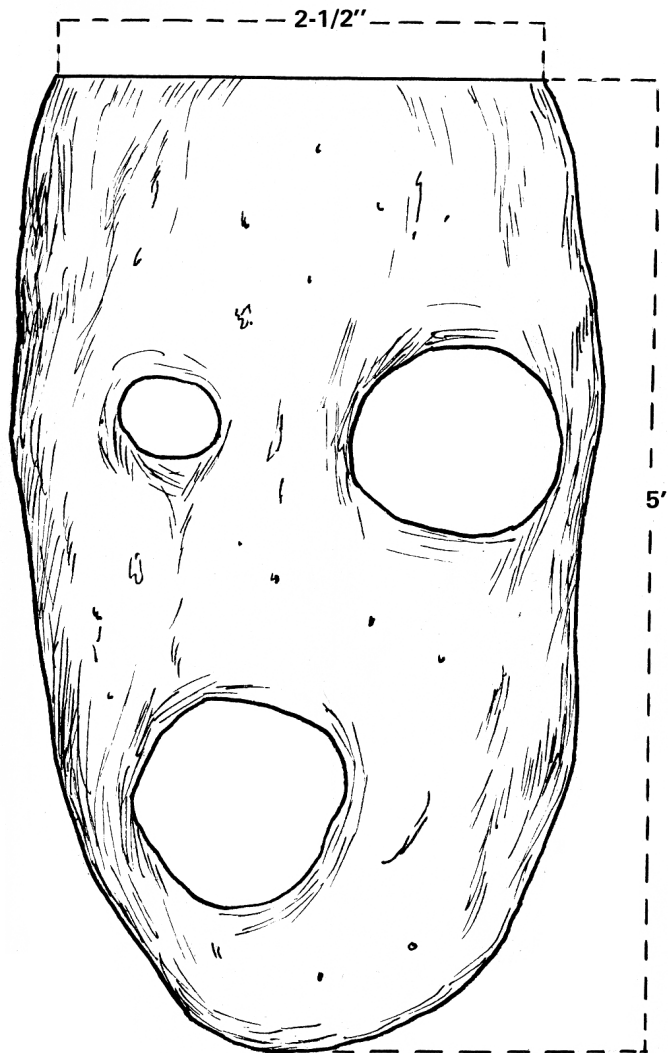
Serious damage:

When affecting more than 10% of the surface area in the aggregate, or
When an area that is rough or jagged affects more than 5% of the surface area in the aggregate.

Figures 1, 2, and 3

Figures 1, 2 and 3 on the following pages show to what extent a long type potato with one clipped end, and with a remaining length twice the largest diameter of the cut surface, may be affected by knobs, clipped knobs or growth cracks.

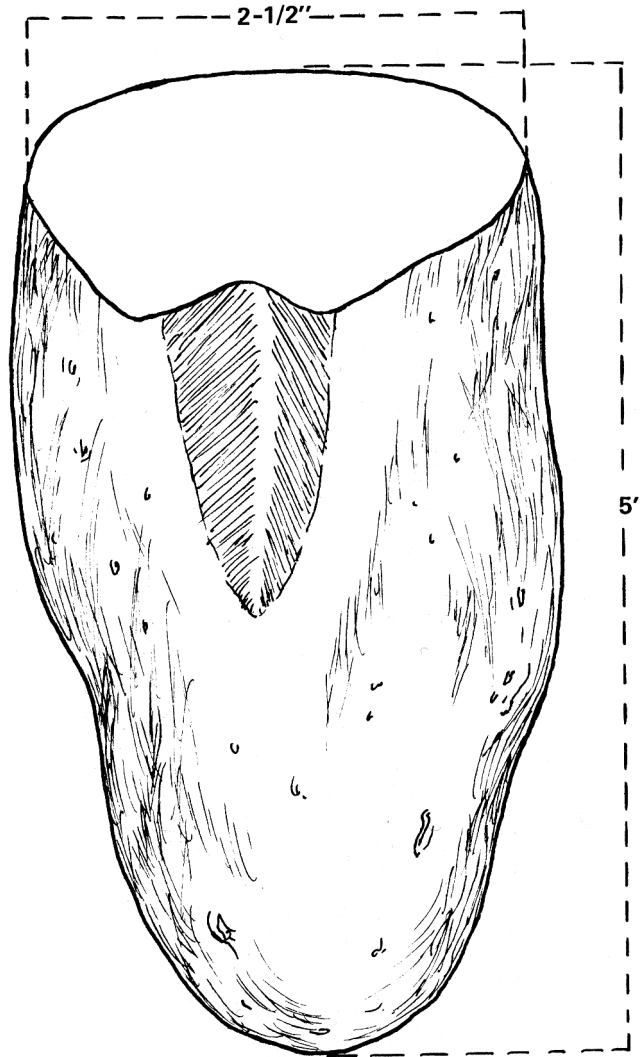
Visual Aids Refer to photos 100 - 101 and Figures 1 - 3.



U.S. No. 2 – maximum allowed

Figure 1 showing the extent a long type potato with one clipped end may be affected by clipped knobs.

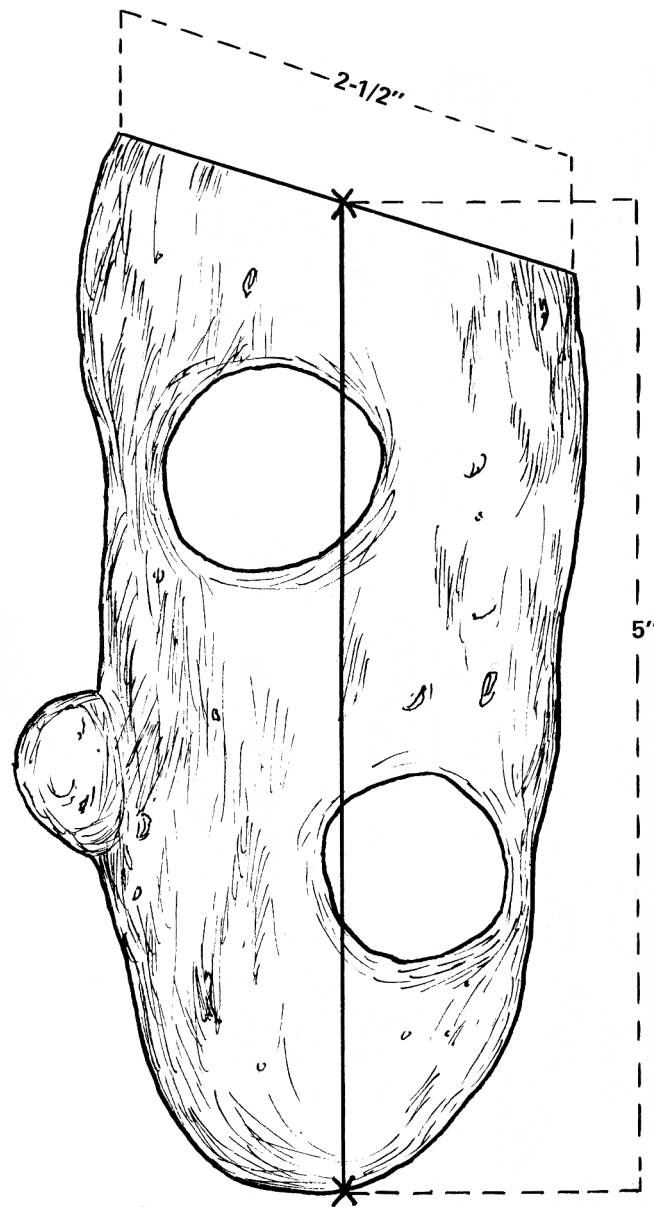
(Approximate weight 16 ounces)



U.S. No. 2 – maximum allowed

Figure 2 showing the extent a long type potato with one clipped end may be affected by growth cracks.

(Approximate weight 10 ounces.
Consider this a straight cut)



U.S. No. 2 – maximum allowed
Figure 3 showing “average length” on a tuber with a diagonal cut.

(Approximate weight 14 ounces.
When the cut is diagonal, measure the average length of the tuber)

Corky Ring Spot (C)

Corky ring spot is caused by tobacco rattle virus which is transmitted by soilborne nematodes. Affected potatoes show brown rings, semicircles, loops and spots on the surface and similar brown rings, loops and spots in the interior tissues. The skin often cracks over some of the brown slightly sunken rings. The surface markings can usually be traced to similar markings within the tuber, but many internal brown spots and semicircles appear to be independent of the surface lesions. The affected tissues are moderately firm and corky. The characteristic ring-like external and internal markings of tubers affected with this disease distinguish it from internal brown spot and tuber necrosis caused by alfalfa mosaic. Tubers from crops infected with corky ring spot may appear healthy when harvested but develop the disease in storage. **NOTE:** Corky ring spot is listed in FEIRS; however, if not absolutely sure of the defect, describe it as it appears.

Scoring Guide

Damage:

When removal causes a loss of more than 5% of the total weight of the potato, or

When materially affecting the appearance of the potato.

Serious damage:

When removal causes a loss exceeding 10% of the total weight of the potato, or

When seriously affecting the appearance of the potato.

Visual Aids Refer to photos 46 - 47a.

Dries Stems

The presence of dried stems is rather unusual and occurs during seasons of extreme drought when enlarged, tough stems do not readily separate from the tubers. **Dried stems are not to be scored as a defect.** However, at applicant's request, they may be described in the "OTHER" section on market certificates and in the "DESCRIPTION OF PRODUCTS" or "REMARKS" section on shipping point certificates.

Elephant Hide (Q)

This defect, caused by environmental and physiological means, manifests itself as a severe roughened scaling of the skin unlike typical scab infections. The skin often appears darker and thicker than normal with deep checking, cracking or scaling.

Scoring Guide

Damage:

When affecting more than 10% of the surface area of the potato.

Serious damage:

When affecting more than 25% of the surface area.

Enlarged Lenticels (Q & C)

This injury occurs in some potato growing areas, especially where there are heavy soils and when soaking rains occur during or just preceding harvest. The injury may be found in either of two forms:

- 1) Numerous small blister-like areas around some of the enlarged lenticels with watery appearing spots slightly affecting the flesh immediately beneath the skin.
- 2) Numerous small, slightly sunken or pitted areas occurring around the lenticels which may or may not be enlarged.

It is believed that both conditions are due to excessively wet weather immediately before digging. Pitting may be due to the loss of surplus water located under the enlarged lenticels. The pitted condition can develop, or at least change, in transit, and progress even after arriving at the market.

When lenticels become infected, raised, coalesced, discolored, or have any other characteristic, describe accurately on the certificate. At en route or at destination inspections when lenticels are abnormally large but are not sunken, raised, or discolored, etc., report as a quality factor (see visual aid 105).

Scoring Guide**Damage:**

When materially detracting from the appearance of the potato.

Serious damage:

When seriously detracting from the appearance of the potato.

Visual Aids Refer to photos 48 - 49 and 105 - 107.

External Surface Discoloration (C)

Discoloration can be caused by numerous reasons. It can be caused by a rapid loss of moisture and oxidation, most apparent on skinned potatoes. This type of discoloration usually affects only the surface of the tuber.

Discoloration may also be caused by staining and diseases such as Black Dot. Black Dot describes a fungus that produces numerous dot-like, black microsclerotia that appear on tubers in conjunction with brown to gray surface discoloration. Even though it mostly affects the surface, it may penetrate the underlying flesh up to a depth of 1/16 inch. Black Dot is frequently associated with Silver Scurf. When encountering staining or diseases like Black Dot, describe the defect and report as discoloration.

Scoring Guide

The following scoring guide applies to skinned and/or unskinned surfaces and should be used in conjunction with the official visual aids:

Areas that are light tan or lighter in color and blend with the general appearance of the potato should be ignored.

Damage:

When affecting more than 30% of the surface by light tan or light brown colors which do not blend, or

When affecting more than 15% of the surface by darker than light tan or light brown colors.

Serious damage:

When affecting more than 60% of the surface by light tan or light brown colors which do not blend, or

When affecting more than 30% of the surface by darker than light tan or light brown colors.

Visual Aids Refer to photos 108 - 113.

Firmness (C)

In the U.S. Commercial and higher grades, potatoes are required to be firm. In the latter part of the storage season, sprouting may contribute to shriveling and flabbiness.

§51.1551 Firm. "Firm" means that the potato is not shriveled or flabby.

Scoring Guide

Damage:

When the potato is more than slightly shriveled or flabby.

Serious damage:

When the potato is excessively shriveled, spongy or flabby.

Visual Aids Refer to photos 1 & 2.

Folded Ends (Q)

Folded end is the term used to describe areas that fold inward on potatoes. These areas develop during the growing process and generally occur on the end of the potato.

Scoring Guide

Damage:

When materially detracting from the appearance of the potato.

Serious damage:

When seriously detracting from the appearance of the potato.

Visual Aids Refer to photos 114 - 117.

Flattened or Depressed Areas (C)

These flattened or depressed areas are usually not found until after the potatoes have been in storage for several months. This defect is most often the result of pressure at points of contact with adjacent potatoes or floor.

These areas will exhibit a rubbery feel and a slight wrinkling or a soft elasticity of the skin over the flattened area. If these qualities are not present on the flattened or depressed areas the potato is more likely to be affected by a shape problem.

Scoring Guide

Flattened or depressed areas may have developed grayish to black discoloration of the underlying flesh. If discoloration of the underlying flesh is present and the areas affected does not exceed the area allowed then score on a waste basis only that tissue affected by discoloration (see section on Bruises).

Score as **damage** or **serious damage** when the flattened or depressed area(s) covers more surface area than allowed as outlined in the following chart or when discoloration of the underlying flesh causes more waste than is permitted by the grade (5% or 10%).

MAXIMUM AREA ALLOWED FOR FLATTENED OR DEPRESSED AREAS

| Diameter | Weight | No. 1 (aggregate area) | No. 2 (aggregate area) |
|--------------------------|------------------------|-----------------------------------|-----------------------------------|
| Potato is: | Potato is: | Not more than: | Not more than: |
| Less than 2 in. | Less than 4 oz. | 1/2 in. | 1 in. |
| 2 to 2-1/2 in. | 4 to 6 oz. | 1 in. | 1-1/2 in. |
| More than 2-1/2 to 3 in. | More than 6 to 8 oz. | 1-1/4 in. | 1-3/4 in. |
| More than 3 to 3-1/2 in. | More than 8 to 14 oz. | 1-1/2 in. | 1-7/8 in. |
| More than 3-1/2 to 4 in. | More than 14 to 20 oz. | 1-3/4 in. | 2 in. |
| More than 4 to 4-1/2 in. | More than 20 to 28 oz. | 2 in. | 2-1/4 in. |
| More than 4-1/2 to 5 in. | More than 28 to 36 oz. | 2-1/4 in. | 2-3/4 in. |
| More than 5 in. | More than 36 oz. | 2-1/2 in. | 3-1/4 in. |

Visual Aids Refer to photo 137.

Flea Beetle (Q)

This injury is caused by a small insect that feeds on or near the surface, which usually forms brown splinter-like pegs extending 1/8 to 1/4 inch into the potato.

Scoring Guide

Damage:

When materially detracting from the appearance of the potato, or

When removal causes a loss exceeding 5% of the total weight of the potato, or

When affecting more than 5% of the surface area in the aggregate.

Serious damage:

When seriously detracting from the appearance of the potato, or

When removal causes a loss exceeding 10% of the total weight of the potato, or

When affecting more than 10% of the surface area in the aggregate.

Visual Aids Refer to photo 50.

Freezing/Freezing Injury (Q & C)

§51.1562 Freezing. “Freezing” means that the potato is frozen or shows evidence of having been frozen.

Freezing may occur when temperatures drop below 30.9°F. Inspectors must always clearly distinguish between potatoes in a frozen condition and those affected by freezing injury. The term “**frozen**” should only be used when ice crystals are present. Use the term “**freezing injury**” when it is evident that the potatoes are not in a frozen condition at the time of inspection.

Symptoms vary greatly. Tissue at the stem end of the tuber is more sensitive to freezing than those at the bud end. Cells around the vascular ring are more susceptible to freezing than other cells in the potato. Potatoes injured by freezing may be firm but show internal discoloration near the stem end. Potatoes that were frozen will become soft and watery upon thawing (wet breakdown), or, in dry air, become dry, leathery, and granular with chalky white masses of starch. Often there is a clear line of demarcation between affected flesh and healthy flesh. Field freezing will generally manifest first on areas that are sunburned (exposed to the elements) and develop bluish-gray blotches beneath the skin along with soft, flabby, watery areas.

To provide a clear picture of the freezing in the lot, it is necessary to search for clues as to when and where freezing occurred. For example, freezing scattered throughout the load may indicate that it occurred in the field or during storage, whereas freezing found only along the floor and sidewall of the railcar or trailer may indicate that it occurred in transit.

When the location of injury indicates when or where the freezing occurred, report the facts. For example: "Freezing injury so located as to indicate it occurred after packing, but not in present location" or "Freezing occurred on above mentioned trailer."

When a freezing pattern is determined within a lot, it is important to provide the following information:

- Record pulp temperatures taken at various locations.
- Determine and record extent of injury in load and containers.
- Determine and record degree to which individual specimens are affected.
- Describe the **pattern** of freezing or freezing injury in clear, concise terms.
- Describe using general terms rather than percentages.

When a freezing pattern is found, the inspector will write a freezing statement rather than reporting percentages. When a pattern is not present, the individual tuber will be scored using the guide below:

Scoring Guide

Potatoes that are frozen are scored as **serious damage** against the restricted frozen/wet breakdown/soft rot tolerance.

Potatoes showing freezing injury that are soft, wet, and leaking will be reported as "**Wet breakdown following freezing injury**" and scored as **serious damage** against the restricted frozen/wet breakdown/soft rot tolerance.

When identified, potatoes showing dry type freezing injury, found scattered throughout the container and load, will be considered a quality factor and scored as **serious damage** against the tolerance for external defects or, when not visible, internal defects.

Visual Aids Refer to photos 29 - 31.

Grass Damage (Q)

There are several grasses that cause damage to potatoes such as quack, nut and wire grass. The damage is caused by the grass roots growing into and even through the potatoes. The term "**grass damage**" should be used in reporting all types of this damage.

Scoring Guide

Damage:

When affecting the flesh of the potato and removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

When affecting the flesh of the potato and removal causes loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photo 54.

Greening (C)

Potatoes exposed to light either before or after harvest gradually turn green at the surface due to the development of chlorophyll. Greening that occurs before harvest is called sunburn (see **Sunburn** section). The degree of greening varies according to the type (incandescent, fluorescent, sun) and brightness of light, time period, and thickness of potato epidermis. Usually immature potatoes green more readily than mature ones. Greening caused by artificial light rarely affects the flesh and generally does not produce solanine, an alkaloid that is poisonous if taken in sufficient amounts.

Scoring Guide

Damage:

When removal causes a loss exceeding 5% of the total weight of the potato, or
When green color affects more than 25% of the surface area in the aggregate.

Serious damage:

When removal causes a loss exceeding 10% of the total weight of the potato or,
When green color affects more than 50% of the surface area in the aggregate.

Visual aids Refer to photo 55.

Growth Cracks (Q)

Growth cracks may be caused by very rapid growth, as when a rainy period follows a long dry spell. Growth cracking usually follows the long axis of the potato and results from internal pressure exceeding the tensile strength of surface tissues during tuber enlargement.

Scoring Guide

Damage:

When affecting more than 1/2 the length in the aggregate on round varieties, or
When affecting more than 1/3 the length in the aggregate on long varieties, or
When the depth is greater than outlined in the chart below.

Serious damage:

When affecting more than 3/4 the length of the potato in the aggregate, or
When the depth is greater than outlined in the chart below.

DEPTH ALLOWED FOR GROWTH CRACKS

| Diameter | Weight | No. 1 (Depth) | No. 2 (Depth) |
|--------------------------|--------------------------|----------------|----------------|
| Potato is: | Potato is: | Not more than: | Not more than: |
| Less than 2 in. | Less than 4 oz. | 1/8 in. | 1/4 in. |
| 2 to 2-1/2 in. | 4 oz. to 6 oz. | 1/4 in. | 3/8 in. |
| More than 2-1/2 to 3 in. | More than 6 oz. to 8 oz. | 3/8 in. | 1/2 in. |
| More than 3 in. | More than 8 oz. | 1/2 in. | 5/8 in. |

Visual Aids Refer to photos 118 - 120.

Grub Damage (Q)

This is a very common insect injury affecting potatoes. Grubs eat away at the skin and flesh of the potatoes leaving holes, usually of considerable size.

Scoring Guide

Damage:

When removal causes a loss of more than 5% of the total weight of the potato,
or
When affecting more than 5% of the surface area (i.e. more than 3/4 inch on a 2-1/2 inch or 6 ounce potato)

Serious damage:

When removal causes a loss of more than 10% of the total weight of the potato,
or
When affecting more than 10% of the surface area (i.e. more than 1-1/4 on 2-1/2 inch or 6 ounce potato)

Visual Aids Refer to photos 56 & 57.

Mechanical Damage (Q)

“Mechanical Damage” is not a fully descriptive term for potatoes and should not be used on the certificate. Instead, describe the damage caused by harvesting and handling in terms of bruises or cuts (see **Bruises** and **Cuts/Clipped Ends** sections).

Nematode (Root Knot) (Q)

This injury is found in varying amounts in most commercial potato areas in the United States. Potatoes with advanced infestation usually have a roughened, irregular, bumpy or warty appearance due to the presence of galls on the outer surface. When such potatoes are cut, the egg masses are seen in abundance scattered throughout the outer tissues with most of them approximately 1/8 to 1/4 inch beneath the skin. To the naked eye they appear to be somewhat discolored, slightly water-soaked spots. Deposits of eggs in the flesh may hatch out after harvest causing a re-infestation of feeding nematodes, which generally are not visible to the unaided eye.

Infestation may sometimes show no external symptoms. When internal injury conditions are found without external symptoms, use the same sampling procedure for determining percentages as you would for hollow heart and internal discoloration.

Scoring Guide

Damage:

When removal causes a loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes a loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photo 69.

Pink Eye (C)

Pink eye is characterized by pinkish blotches near the eyes and mostly around the blossom end of the tubers due to the pink underlying tissue. The internal tissue is firm to corky with pink to reddish-brown color. Black areas and cavities may also occur. The discolored tissues around the eyes may turn light brown, become wrinkled and cracked. Pink eye may be confused with late blight, but it does not have the brick-red granular tissue that is characteristic of blight.

This defect, although rare, is sometimes seen in the markets. If during inspection of potatoes this defect is found and is clearly identified as pink eye based on photos 72 and 73 of the USDA Official Visual Aids for Potatoes, the potato should be reported as pink eye. If the defect cannot be clearly identified as "pink eye" the defect should be described.

Scoring Guide

Damage:

When materially detracting from the appearance of the potato, or

When removal causes a loss of more than 5% of the total weight of the potato.

Serious damage:

When seriously detracting from the appearance of the potato, or

When removal causes a loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photos 72 - 74.

Rhizoctonia (Black Scurf) (Q)

Rhizoctonia, commonly called black scurf, is present in all potato-growing areas. Black or dark brown sclerotia develop on surfaces of mature tubers, which may be flat and superficial or large irregular lumps resembling soil that will not wash off. However, Rhizoctonia has no relation to cleanliness. Rhizoctonia does not penetrate the tuber skin and may be scratched or flicked off with a fingernail.

Scoring Guide

Damage:

When affecting more than 15% of the surface in the aggregate.

Serious damage:

When affecting more than 50% of the surface in the aggregate.

Visual Aids Refer to photos 125 & 126.

Rodent and Bird Damage (Q)

Frequently rodents, such as field mice, gophers and rabbits gnaw into potatoes and cause cavities. Generally the cavities made by rodents bear the marks of the teeth of the animal in the form of corrugations or ridges. Bird damage, such as is caused by chickens or other birds, is easily identified by the pit-like markings lining the cavity.

Scoring Guide

Damage:

When removal causes a loss exceeding 5% of the total weight of the potato, or

When affecting more than 5% of the surface area (i.e. more than 3/4 inch on a 2-1/2 inch or 6 ounce potato).

Serious damage:

When removal causes a loss exceeding 10% of the total weight of the potato, or

When affecting more than 10% of the surface area (i.e. more than 1-1/4 inch on a 2-1/2 inch or 6 ounce potato).

Visual Aids Refer to photo 77.

Rough Raised Netting (Q)

Netting affects the skin of potatoes; it may be fine, raised and/or rough. However, netting is only scorable when it is rough and raised.

Scoring Guide

Score as **damage** when netting is rough and raised and more than 50% of the surface. Rough raised netting is not scored as serious damage.

Visual Aids Refer to POT-L-1(Official Visual Aids for Potatoes), page 32.

Russeting (Q)

Russeting which occurs naturally on russet varieties, or on some red and white varieties, is not scorable. Only score russeting when not characteristic for the variety.

Scoring Guide

Score non-characteristic russeting as **damage** when affecting more than 50% of the surface area in the aggregate. Do not score as serious damage.

Visual Aids Refer to photos 127 & 128.

Scab (Q)

Common scab, of which there are three types – pitted, russet, and surface, and powdery scab are both soil inhabiting micro-organisms that have been known to mankind since the nineteenth century. Both pathogens are universally distributed over the potato growing regions of the world and are often described as fungi. However, common scab is more closely related to bacteria and powdery scab is related to the slime molds. These diseases invade the surfaces of tubers and the plant responds by developing corky scabs. Severe attacks of common scab can occur if the soil is dry during early tuber development. Powdery scab is more prevalent under wet conditions. Common and powdery scabs do not greatly affect the edible quality, but they are commercially important since cosmetic damage lowers the value of the crop.

Different types of scabs may be difficult to distinguish from one another. When no definite determination can be made as to the type of scab, or a combination of scabs are present, the inspector will identify the defect as “scab” and score it as damage when materially detracting from the appearance and serious damage when seriously detracting from the appearance. When the type of scab can be identified, please see the following scoring guides for each type of scab.

Pitted Scab (Q)

Pitted scab is the result of early infections, the uninjured tissues growing up around the affected areas causing the pitted depressions. Such pits may be only very slight depressions or they may extend into the potato 1/4 inch or more.

Scoring Guide (based on a potato 2-1/2 inches in diameter or 6 ounces in weight)

Damage:

When removal causes a loss exceeding 5% of the total weight of the potato, or

When affecting an aggregate area of more than 1/2 inch (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Serious damage:

When removal causes a loss exceeding 10% of the total weight of the potato, or

When affecting an aggregate area of more than 1 inch (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Visual Aids Refer to photos 129 & 130.

Russet Scab (Q)

Russet scab is a roughening, scurfing, or cracking of the tuber skin, sometimes occurring in localized areas or sometimes over most of the tuber surface. The affected tissues vary from light tan to brown in color, and may consist of a superficial cork-like layer or have a cushion-like appearance.

Scoring Guide

Damage:

Smooth and affecting more than 1/3 of the surface area, or

Rough and affecting more than 10% of the surface area.

Serious damage:

Rough and affecting more than 25% of the surface area.

Visual Aids Refer to photos 77a - 77b and 143.

Surface Scab (Q)

Affected areas usually appear as individual circular spots from 1/4 to 3/4 inch in diameter which are slightly raised or sunken, rough or corky, and usually darker than the normal skin color.

Scoring Guide

Damage:

When affecting more than 5% of the surface area in the aggregate.

Serious damage:

When affecting more than 25% of the surface area in the aggregate.

Visual Aids Refer to photos 78 & 78a.

Powdery Scab (Q)

This disease is characterized by jellylike areas under the skin which evolve into spore balls. When mature, these spore balls turn yellow, and then brown to black, and

the epidermis (skin) splits and peels back to expose the dusty spore mass formed beneath. Sometimes these pustules enlarge to form cankers in the tuber.

Scoring Guide

Damage:

When affecting more than 5% of the surface area in the aggregate.

Serious damage:

When affecting more than 25% of the surface area in the aggregate.

Second Growth (Q)

Second growths are commonly attributed to high field temperatures and drought. It may, however, result from regeneration following any condition causing irregular rates of tuber development such as uneven availability of nutrients or moisture, extremes in temperature, or vine defoliation from hail or frost. When growing conditions improve, resumption of tuber growth becomes evident as second growth.

Scoring Guide

Damage:

When materially detracting from the appearance of the potato.

Serious damage:

When seriously detracting from the appearance of the potato.

Visual Aids Refer to photos 131 - 133.

Shape (Q)

The U.S. Grades for potatoes have the following requirements for shape:

U.S. No. 1 & U.S. Commercial: Fairly well shaped.

U.S. No. 2: Not seriously misshapen.

Definitions:

§51.1556 Well shaped. "Well shaped" means that the potato has the normal shape for the variety.

§51.1557 Fairly well shaped. "Fairly well shaped" means that the potato is not materially pointed, dumbbell-shaped or otherwise materially deformed.

§51.1558 Seriously misshapen. "Seriously misshapen" means that the potato is seriously pointed, dumbbell shaped or otherwise badly deformed.

Scoring Guide

Potatoes which are slightly curved, slightly pointed, or slightly dumbbell-shaped are considered fairly well shaped and should not be scored. Score as **damage** when failing to meet the requirements of fairly well shaped and report as "**not fairly well shaped.**"

When shape seriously detracts from the appearance or materially deforms the potato, score as **serious damage** and report as "**seriously misshapen.**" Potatoes that are seriously misshapen because of growth cracks or second growth should be scored for those defects.

Visual Aids Refer to photos 14 - 17 and 18 - 22c

Silver Scurf (C)

This is a fungal disease that primarily affects the skin and therefore affects the appearance of the potato. Although potatoes from any growing area may be affected it is most often found on potatoes grown in the northern half of the continent and more frequently on potatoes that have been in storage. The occurrences of superficial brownish spots more or less circular in outline, constitutes the first symptoms. As the disease progresses the affected areas becomes silvery brown and may coalesce to cover most of the tuber surface. The affected areas may not be as conspicuous on dry potatoes, but when the potatoes are wet, the silvery appearance may sometimes be more readily seen. In severe cases the entire surface of the tuber may be affected with little or no contrast with the natural skin color. In advanced stages of the disease affected areas begin to shrivel or wrinkle.

Scoring Guide (Apply to any shade or color of the defect)

Damage:

When affecting more than 50% of the surface area of the potato.

Serious damage:

When wrinkling of the skin affects more than 50% of the surface area.

Visual Aids Refer to photos 81 - 82g.

Similar Varietal Characteristics (Q)

§51.1550 Similar varietal characteristics. "Similar varietal characteristics" means that the potatoes in any lot have the same general shape, color and character of skin, and color of flesh.

All grades require potatoes to be of similar varietal characteristics, except when designated as a mixed or specialty pack. When so designated, the similar varietal characteristic requirement does not apply. All packages in a lot so designated must have more than one type of potato in the package. If an inspector encounters packages in a mixed lot that do not contain mixed types, those packages constitute a separate lot.

Scoring Guide

When not designated as a mixed or specialty pack, potatoes that are not of similar varietal characteristics are reported as “**Dissimilar varietal characteristics**” and scored against the external defect tolerance for the grade being applied.

Skin Checks (C)

Potatoes harvested during low temperature periods, or stored to minimal temperatures, or when tender, are subject to small superficial bruises resembling "fingernail cuts." These checks occur during the handling, storage or grading operations. They are almost invisible on washed potatoes and appear as small dampened spots on dry packed potatoes.

Scoring Guide

Damage:

When materially affecting the appearance of the potato.

Serious damage:

When seriously affecting the appearance of the potato.

Visual Aids Refer to photos 134 & 135.

Sprouts (External) (C)

Sprouts are the result of eyes on the potato that begin to grow. They sometimes occur singularly or in clusters. Their length varies according to what stage of growth they are in and progress rapidly at non-refrigerated temperatures. Growth generally begins opposite the stem end of the potato. Whether scorable or not, the presence of sprouts shall always be described and reported on the certificate.

Decayed or slimy sprouts should not be scored unless they exceed the length or appearance requirements, but they may be reported at the request of the applicant and reported as "not affecting grade."

Scoring Guide

Shipping Point:

Damage:

When more than 5% of the potatoes in any lot have any sprout more than 1/4 inch in length, or

When numerous individual and/or clusters of sprouts materially detract from the appearance of the potato.

Serious damage (only score serious damage by sprouts for U.S. Commercial and U.S. No. 2 grades):

When more than 10 percent of the potatoes in any lot have any sprout more than 1/2 inch in length, or

When numerous individual and/or clusters of sprouts seriously detract from the appearance of the potato.

En Route or At Destination:

Damage:

When more than 5% of the potatoes in any lot have any sprout more than 1/2 inch in length, or

When numerous individual and/or clusters of sprouts materially detract from the appearance of the potato.

Serious damage (only score serious damage by sprouts for U.S. Commercial and U.S. No. 2 grades):

When more than 5% of the potatoes in any lot have any sprout more than 1 inch in length, or

When numerous individual and/or clusters of sprouts seriously detract from the appearance of the potato.

Visual Aids Refer to photo 136.

Individual Sampling and Reporting Requirements for Sprouts

There is no limitation on the percentage of sprouts in individual samples, providing the average does not exceed the allowance for their respective grades. When a lot shows sprouts exceeding the requirement for that specific grade, the total percentage of scorable sprouts will be reported on the certificate to indicate whether or not the lot is damaged or seriously damaged by sprouts. For example, if 8% sprouts are scored in a U.S. No. 1 lot, record the percentage in the average defects column. However, if 5% sprouts are scored in a U.S. No. 1 lot, the percentage of scorable sprouts will not be reported on the certificate unless requested by the applicant. When the percentage is requested by the applicant, report the facts in the "OTHER" or

“REMARKS” section. Example: “Scorable sprouts range 2 to 9, average 5%, not affecting grade and reported at applicant’s request.”

When the lot fails to grade only account of sprouts, report the fact in the grade statement. For example, “Fails to grade U.S. No. 1 account condition (sprouts).”

The presence of sprouts, when not exceeding the length or appearance requirements, are always reported on the certificate in the “OTHER” or “REMARKS” section using general terms. For example: “Most samples show some to many potatoes having barely visible sprouts, some samples show none.”

When sprouts are partly broken, flabby, partially shriveled or dried, but still attached to the potato, they will be scored if the sprout exceeds the requirement for the specific grade.

U.S. No. 1 Quality for Sprouts

At shipping point it is permissible to determine and certify percentage of U.S. No. 1 Quality in potatoes that are out of grade on account of sprouts. Inspectors should allow 5% sprouts, deducting only that amount in excess of 5% in determining the percentage of U.S. No. 1 Quality. For example, in a lot having 10% defects, 15% sprouts and no undersize, the percentage of U.S. No. 1 Quality is 80%.

New Potato Growth Attached by Fleshy Stems (Q)

Any new potato development will be scored on the basis of second growth even though the new potato is attached by a fleshy stem having the appearance of a sprout. Sprout development with no potato development is to be scored the same as sprouts.

Sunburn (Q)

Sunburn is caused by tubers being exposed directly to sunlight when insufficiently covered with soil. Often the stem end is affected since it is usually the portion of the tuber that is exposed to sunlight. Altitude, intensity of sunlight, and length of exposure directly affects the amount of chlorophyll (green) in the skin, but more importantly affects the development of yellow to green discoloration in the flesh. Artificial light rarely discolors the flesh. However, sunlight may cause chlorophyll production to penetrate deeply into the tuber causing the affected area to taste bitter. In addition, sunlight causes solenoid production, an alkaloid that is poisonous if taken in sufficient dosages.

Inspectors should always cut potatoes to determine the amount of waste. Any green color or marked yellowing of the flesh is considered objectionable. When in doubt as to whether the flesh is green or yellow, compare it with a slice from an unaffected potato of the same lot.

Scoring Guide

Damage:

When removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photos 86 & 87.

Sunken Discolored Areas (C)

These areas vary in size and are sunken in comparison with the adjacent surface. They are darker than the skin color of the potato and vary in their degree of darkness from light brown to dark brown to black.

Scoring Guide

The amount scorable for sunken discolored areas corresponds directly with the size of the potato. Refer to the following chart for the maximum area allowed:

MAXIMUM AREA ALLOWED FOR SUNKEN DISCOLORED AREAS

| Diameter | Weight | No. 1 (aggregate) | No. 2 (aggregate) |
|--------------------------|------------------------|--------------------------|--------------------------|
| Potato is: | Potato is: | Not more than: | Not more than: |
| Less than 2 in. | Less than 4 oz. | 3/8 in. | 3/4 in. |
| 2 to 2-1/2 in. | 4 to 6 oz. | 3/4 in. | 1 in. |
| More than 2-1/2 to 3 in. | More than 6 to 8 oz. | 1 in. | 1-1/4 in. |
| More than 3 to 3-1/2 in. | More than 8 to 14 oz. | 1-1/4 in. | 1-1/2 in. |
| More than 3-1/2 to 4 in. | More than 14 to 20 oz. | 1-1/2 in. | 1-3/4 in. |
| More than 4 to 4-1/2 in. | More than 20 to 28 oz. | 1-3/4 in. | 2 in. |
| More than 4-1/2 to 5 in. | More than 28 to 36 oz. | 2 in. | 2-1/4 in. |
| More than 5 in. | More than 36 oz. | 2-1/4 in. | 2-1/2 in. |

Visual Aids Refer to photo 138.

Sunken Discolored Areas with Underlying Flesh Discolored (C)

This defect is most noticeable on storage potatoes and appears to be related to bruising and rough handling at time of harvesting or while in storage. In some cases, sunken areas alone will not affect the appearance sufficiently to cause damage or serious damage and it will be necessary for the inspector to cut to determine if there is discoloration of the underlying flesh.

Scoring Guide

Damage:

When removal causes a loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes a loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photo 138 for ID only. Cut to determine underlying discoloration.

Sunken Discolored Sticky Areas (C)

Discoloration of this kind is more serious than the previous types as soft rot may often develop in transit. This condition most frequently occurs on skinned areas of potatoes which are harvested during extremely hot weather with no protection from the sun or wind. Cutting may be done to determine sticky areas.

Scoring Guide

The amount scorable for sunken discolored sticky areas corresponds directly with the size of the potato. Refer to the following chart for the maximum area allowed:

MAXIMUM AREA ALLOWED FOR SUNKEN DISCOLORED STICKY AREAS

| Diameter | Weight | No. 1 (aggregate) | No. 2 (aggregate) |
|--------------------------|------------------------|--------------------------|--------------------------|
| Potato is: | Potato is: | Not more than: | Not more than: |
| Less than 2 in. | Less than 4 oz. | 1/4 in. | 1/2 in. |
| 2 to 2-1/2 in. | 4 to 6 oz. | 1/2 in. | 3/4 in. |
| More than 2-1/2 to 3 in. | More than 6 to 8 oz. | 3/4 in. | 1 in. |
| More than 3 to 3-1/2 in. | More than 8 to 14 oz. | 1 in. | 1-1/4 in. |
| More than 3-1/2 to 4 in. | More than 14 to 20 oz. | 1-1/4 in. | 1-1/2 in. |
| More than 4 to 4-1/2 in. | More than 20 to 28 oz. | 1-1/2 in. | 1-3/4 in. |
| More than 4-1/2 to 5 in. | More than 28 to 36 oz. | 1-3/4 in. | 2 in. |
| More than 5 in. | More than 36 oz. | 2 in. | 2-1/4 in. |

Visual Aids Refer to photo 138 for ID only.

Surface Cracks (Q)

Surface cracks are the superficial cracking of the skin of some varieties of potatoes and should not be confused with russeting. The cracks are generally wider and more pronounced than russeting.

These guides are to be used in conjunction with the official visual aids:

Scoring Guide

Areas affected by fine net-like cracking should be ignored.

Damage:

When smooth shallow cracking affects more than 1/3 of the surface, or

When rough deep cracking affects more than 5% of the surface area.

Serious damage:

When rough deep cracking affects more than 10% of the surface.

Visual Aids Refer to photos 139 - 142.

Tuber Moth Damage (C)

Most tuber moth damage occurs from larvae which hatch out either just prior to digging or after the potatoes are harvested. Eggs are deposited by the insect, usually at or near the eyes, and are most likely to be found on sunburned areas. The larvae hatch out and enter the potato, usually through the eye. They make tunnels at first close to the surface, and finally riddle the potatoes with deeply penetrating channels, making them unmarketable. Since this defect usually gets drastically worse in transit, the marketing quality is materially affected when any evidence is found at shipping point.

It is entirely possible that there may be no damage visible upon casual observation at shipping point in a lot of potatoes which may show a considerable percentage of tuber moth damage upon arrival in receiving markets. At market the appearance or waste factors should be used in determining damage.

Scoring Guide

Damage:

When materially detracting from the appearance of the potato, or

When removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

Whenever live larvae are present, or

When seriously detracting from the appearance of the potato, or

When removal causes loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photos 88 & 89.

Wireworm (Q)

There are several types of wireworm holes that cause damage to potatoes. The type of hole will depend to a certain extent on the state of development of the potato at the time of the injury. When the injury is fairly fresh, it may appear as a small dirty hole.

If it occurred in the early stage of development of the potato, the hole may be lined with new skin growth. All types of worm holes should be reported using the terms "**worm damage.**"

Scoring Guide

Damage:

When affecting the flesh of the potato and removal causes loss of more than 5% of total weight of potato.

Serious damage:

When affecting the flesh of the potato and removal causes loss of more than 10% of total weight of potato.

Visual Aids Refer to photos 92 & 93.

INTERNAL DEFECTS

§51.1565 Internal defects. "Internal defects" are defects which cannot be detected without cutting the potato.

Internal Defects are defects which *generally* cannot be detected without cutting the potato. However, a few factors which affect the vascular bundles or interior portion of the potato may be detectable without cutting due to the discolored tissue which is apparent through the skin. These defects shall also be considered internal defects.

Both the U.S. and Canada score internal discoloration on the same basis (i.e. 5-10% or 3-6 spots). The U.S. generally uses the following specific defect name: net necrosis, stem end browning, vascular discoloration, internal brown spot, heat or drought necrosis, internal black spot, internal mahogany browning and internal pink to purple discoloration. Canadian inspectors however, use the term "Internal Discoloration" when reporting these defects.

Any defect shall be considered as an internal defect when the interior flesh of the potato is affected but there is no apparent damage to the surface area of the potato.

When inspecting potatoes, internal defects are as important as external defects, but much less apparent; therefore, potatoes must be cut to determine the amount of damage and serious damage. All types of internal defects should be judged immediately after cutting as the appearance of the flesh of the cut potato may be affected by reddish-brown discoloration caused by oxidation.

Color comparator POT-CC-1 is ONLY to be used when scoring light brown discoloration associated with hollow heart or brown center as noted in the scoring guide for these defects. Use color comparator Pot-CC-2 only for internal black spot.

Sampling to Determine the Presence of Internal Defects

Sampling to accurately determine the percentage of internal defects is difficult and requires the inspector to use good judgment in all circumstances. While inspecting each sample the inspector will cut a minimum of five potatoes selected totally at random from that sample. An inspector may, at their discretion and judgment, make additional cuts on potatoes in the sample to determine if internal defects are present. If no scorable defects are found in this sample the inspector will continue to cut a minimum of five potatoes per sample.

When any scorable internal defects are found in this preliminary examination, a twenty pound sample, which includes potatoes cut in the preliminary examination, will be drawn from the sample and cut to determine the percentage of all internal defects in that sample. If the original sample is 20 pounds the whole sample is cut. If the original sample is larger, only 20 pounds shall be cut for internal defects.

Each sample stands on its own. When a scorable defect is found, the inspector must cut 20 pounds; otherwise, the inspector cuts a minimum of five potatoes.

In-Line only: When the internal defects in a 20 pound cut sample cause the lot to cease meeting grade (the application of tolerances is exceeded, etc.), the inspector must cut 20 pounds of the next sample to ensure that the issue has been corrected and that the potatoes being run now meet grade. If the lot meets grade again, the inspector can resume cutting a minimum of five potatoes until a scorable defect is found.

All cut samples must be recorded on the notesheet. When no scorable internal defects are found, the number of potatoes cut for each sample (i.e. "5") must be recorded in the sample size column on the notesheet. This number indicates that "5" or more potatoes were cut, not five or more pounds. It is not necessary to place a "0" next to the number of potatoes cut to show that there were no scorable internal defects (if the sample size is not 20 pounds, there were no scorable internal defects).

Percentages of scorable internal defects in a sample will be based upon twenty pounds.

When specifically requested by an applicant, the entire contents of the container may be cut for internal defects. This is only done when any scorable defects are found in the initial cut sample. Report in the "REMARKS" section on the certificate and notesheet that the "Entire contents cut at applicant's request." If requested to cut the entire contents, percentages of internal defects are based on the entire container. If a lot includes cut samples of varying sizes, separate determination of percentages in each sample must be made to accurately determine the average percentage of internal defects or if the sample has exceeded the application of tolerances.

This same cutting policy, except for the in-line instructions, will be applied to the sub-sample units for bulk loads.

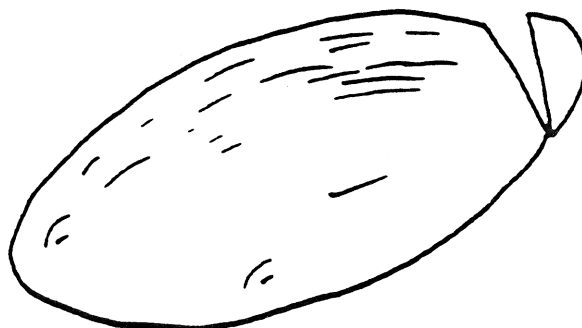
Methods of Cutting to Determine Internal Defects

Internal defects, such as internal black spot, vascular browning, fusarium wilt, net necrosis, other necrosis, stem end browning, and other types of internal discoloration, affecting the vascular ring or occurring between the vascular ring and the skin of the potato are scored on a waste basis. Internal defects, such as hollow heart or hollow heart with discoloration, light brown discoloration (brown center), internal brown spot and similar discoloration (heat necrosis) occurring entirely within the vascular ring are considered on the basis of the diameter of the affected area, and in the case of internal brown spot and similar discoloration, also considered are the number of spots (see illustrations on methods of cutting to determine internal defects).

A thin slice exploratory cut will be made at the stem end of the tuber. If the exploratory cut reveals a defect follow the appropriate method of cutting for the type of defect found. Also, make a lengthwise cut on the same specimen to ensure that all internal defects have been accounted for.

Once preliminary cutting reveals the type of internal defects, one of the following methods should be used to determine percentages:

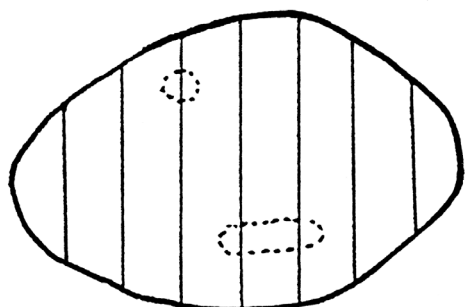
Net Necrosis, Stem End Browning and Other Similar Discoloration:



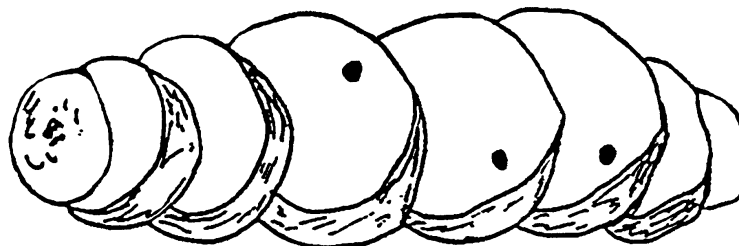
Clip stem end of tuber.

In cutting to remove waste from net necrosis and other similar discoloration at the stem end, inspectors should use a straight cut if the discoloration extends more than 1/2 of the circumference around the potato. If the discoloration affects 1/2 or less of the circumference around the potato, the cut should be made on that particular side, using a curved cut so that an excessive amount of uninjured flesh will not be removed.

Internal Brown Spot and Similar Discoloration Occurring Entirely within Vascular Ring:



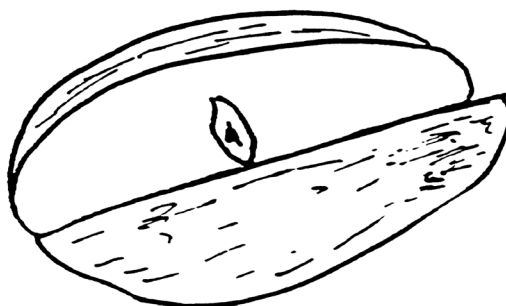
*A - Potato cut in half-inch slices.
Dotted lines indicate location of
internal discolored areas.*



*B - Slices laid down for examination.
Consider only spots on upper side.*

As illustrated above, potatoes should be sliced crosswise at intervals of 1/2 inch in order to detect any discoloration that is present. Lay all the slices down in one direction, only the spots visible on the upper side as shown in the above illustration would be considered in determining whether the potato should be scored. Allow the equivalent of 3 spots 1/8 inch in diameter in a potato 2-1/2 inches in diameter or 6 ounces in weight, or corresponding numbers of spots in different size potatoes. Double the number of such spots is permitted before scoring as serious damage.

Hollow Heart or Hollow Heart with Discoloration and Light Brown Discoloration (Brown Center):



Cut tuber lengthwise and parallel to the flat side.

Cavities and light brown discoloration are scored according to the **Guide for Maximum Area Allowed** on various potato sizes (see previous section.) After determining the size of the potato use a clear diameter gauge to determine if the potato is damaged or seriously damaged. This is done by laying the appropriate circle of the area gauge (from chart) over the hollow or brown area of the potato.

The best effort should be made to position the gauge so that the majority of the defect falls within the circle.

When every bit of the defect falls within the circle, the potato is not scored.

When any amount of **hollow heart** falls outside the circle, the potato is scored.

When any **light brown discoloration**, whether present with hollow heart or alone (brown center), falls outside the area and is as dark as or darker than the color comparator POT-CC-1, the potato is scored.

Visual Aids Refer to photos 122a - 122e.

Method of Cutting to Determine External or Internal Waste

Only a normal amount of uninjured tissue, such as in the ordinary process of preparing for use, should be removed when examining an external or internal defect.

When removing shatter bruises or other defects on the side of the potato, as a general policy, use a round or curved cut. The degree of curve used will depend to a certain extent on the shape of the potato and whether the defect is on the flat or round side.

Use a straight cut on stem end defects if the discoloration extends more than 1/2 of the circumference around the potato. When the discoloration affects 1/2 or less of the circumference around the potato, the cut should be made on that particular side, using a curved cut so that an excessive amount of uninjured flesh will not be removed.

Blackheart (C)

The presence of blackheart generally occurs when the potatoes are exposed to high temperatures with an insufficient air supply. The internal symptoms are a dark gray to purplish discoloration which later becomes jet black. The discolored areas are usually sharply set off from the healthy tissues. Generally the discoloration is restricted to the heart of the potato, but frequently radiates to the exterior as well.

Scoring Guide

Serious damage:

Potatoes in all grades must be free from any amount of blackheart.

Visual Aids Refer to photos 27 & 28.

Heat or Drought Necrosis (Q)

Heat or drought necrosis causes slate-gray to golden-yellow or brown discoloration of the water vessels of the affected tubers. It is most pronounced in the vascular system and may occur at either the stem end or the bud end. It also is in the tissues between the vascular ring and the tuber surface. Discolored tissue near the surface makes the skin appear dark, but generally there are no external symptoms.

Scoring Guide

When occurring outside of the vascular ring:

Damage:

When removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of the total weight of the potato.

When occurring entirely within the vascular ring (based on a potato 2-1/2 inches in diameter or 6 ounces in weight):

Damage:

When more than the equivalent of 3 scattered spots 1/8 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Serious damage:

When more than the equivalent of 6 scattered spots 1/8 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Hollow Heart or Hollow Heart with Discoloration (Q)

Hollow heart is a condition brought about by too rapid or irregular growth. It often occurs during wet seasons in potatoes grown in very fertile or heavily irrigated soils. Hollow heart consists of more or less irregular cavities of varying size and is usually lined with light brown to brown dead tissues. This defect is usually found, but not always, in large, rough, misshapen potatoes.

The area affected is measured with a diameter gauge. The potato is considered damaged or seriously damaged when the affected area (with the plastic diameter gauge laid on it) extends beyond the confines of the appropriate measured circle.

When hollow heart with discoloration is found and no hollow heart falls outside of the circle but some discoloration does, the color must be checked against the color comparator **POT-CC-1**. If any color outside of the circle is as dark as or darker than the color comparator, the potato is scored. See **Guide for Maximum Area Allowed**.

Scoring Guide (based on a potato 2-1/2 inches in diameter or 6 ounces in weight)

Damage:

When the area affected is more than that of a circle 1/2 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Serious damage:

When the area affected is more than that of a circle 3/4 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Visual Aids Refer to photos 121 - 122e, Color comparator POT-CC-1.

Ingrown Sprouts (C)

Ingrown sprouts are sprouts that have actually grown back into the flesh of the potato. There is usually obvious indication of some abnormal sprout growth on the outside of the tuber which will reveal internal growth upon taking an exploratory cut. This defect should be scored against the tolerance for internal defects.

Scoring Guide

Damage:

When removal causes loss of more than 5% of total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of total weight of the potato.

Visual Aids Refer to photos 60 & 61.

Internal Black Spot (C)

The affected areas are usually at or near the surface and more often found at the shoulders of the stem end, although they occur on all parts of the potato. In the first stages, the areas are light tan or light pink in color, later turning gray and finally dark brown or black. At these stages they are internal defects.

As they dry out, they sink and become leathery, at which time they often become external defects scorable as sunken discolored areas (SDA) or SDA with underlying flesh discoloration (see section describing this defect.) In some cases, the skin over them will have a dull dark appearance.

Scoring Guide

Insignificant light shades or minor spots of discoloration should be disregarded.

Damage:

When the spot(s) are darker than the official color chip (POT-CC-2) after removing 5 % of the total weight of the potato.

Serious damage:

When the spot(s) are darker than the official color chip (POT-CC-2) after removing 10 % of the total weight of the potato.

Visual Aids POT-CC-2.

Internal Brown Spot (Q)

The discolored and necrotic tissues, light yellowish-brown to dark rusty-brown in color, are firm, granular or corky in texture and are irregularly shaped and indefinite in outline. The spots usually range from 1/4 to 1/2 inch in diameter. The spots are

scattered irregularly in the central tissue inside of the vascular ring but are often found in the region of the vascular ring and occasionally in the tissue between the vascular ring and the surface of the potato. Most of the lesions are found near the bud (eye) end of the potato and they seldom occur much beyond the middle. Affected tissues have not been found at the stem end.

Scoring Guide (based on a potato 2-1/2 inches in diameter or 6 ounces in weight)

See section on Methods of Cutting to Determine Internal Defects.

Damage:

When more than the equivalent of 3 scattered spots 1/8 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Serious damage:

When more than the equivalent of 6 scattered spots 1/8 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Visual Aids Refer to photos 63 & 64.

Internal Mahogany Browning (C)

This form of low temperature injury is caused by long storage below 38°F, but above the freezing point of potatoes. The color of affected tissues may be brown, mahogany and various shades of gray. The affected flesh is usually tough, brittle or leathery. In northern shipping areas it is usually found in late March through April, especially in bins near cold walls where it may extend in as much as two feet.

Scoring Guide

Damage:

When removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photos 67 & 68.

Internal Pink to Purple Discoloration (C)

This discoloration generally affects the vascular ring area and often radiates in toward the center of the potato. The color of the affected tissue ranges from pink to various shades of purple and may be found throughout the length of the potato. The exact cause of this discoloration is unknown. It has been speculated that it is a form of reversion (back to a parentage). Another suggested cause is field events such as extremes in temperatures or in moisture.

Scoring Guide

When occurring outside of the vascular ring:

Damage:

When removal causes a loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of the total weight of the potato.

When occurring entirely within the vascular ring (based on a potato 2-1/2 inches in diameter or 6 ounces in weight):

Damage:

When more than the equivalent of 3 scattered spots 1/8 inch in diameter (*corresponding lesser or greater areas in smaller or larger potatoes*).

Serious damage:

When more than the equivalent of 6 scattered spots 1/8 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Visual Aids Refer to photo 64a.

Internal Potato Necrosis (C)

Since the cause of this disease is an alfalfa mosaic virus that is transmitted by aphids, this defect occurs when potatoes are grown near alfalfa. The first sign of internal potato necrosis appears near the stem end. The tissue under the skin becomes a rusty-brown color in patches that suggest late blight infections. Later the discolored areas enlarge and may extend throughout the potato.

Potato necrosis is present when the potatoes are harvested, but the discolorations enlarge and become darker after harvest. Potatoes apparently clean at harvest may show discoloration after six weeks storage. Evidently the internal damage caused by the virus does not immediately result in visible discoloration, but gradually develops the brown color in the field, in storage, or in transit.

There is no definite pattern of internal discoloration; sometimes it is in the form of dry, brown blotches in pockets and sometimes in loops and half circles. In suspected lots of potatoes, a true estimate of potato necrosis damage can be obtained only by cutting.

Scoring Guide

Damage:

When removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of the total weight of the potato.

Light Brown Discoloration (Brown Center) (Q)

This is a condition that may develop while tubers are very small. The center of the potato shows areas of dead, brown cells. During the growing season these cells can split apart and form cavities (hollow heart).

The area affected is measured with a diameter gauge. The potato is considered damaged or seriously damaged when the affected area (with the plastic diameter gauge laid on it) extends beyond the confines of the appropriate measured circle. See **Guide for Maximum Area Allowed**.

Scoring Guide (based on a potato 2-1/2 inches in diameter or 6 ounces in weight)

Shades of color that are as dark as or darker than the official color comparator "POT-CC-1" only will be considered in determining affected area.

Damage:

When the area affects more than that of a circle 1/2 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Serious damage:

When the area affects more than that of a circle over 3/4 inch in diameter (*correspondingly lesser or greater areas in smaller or larger potatoes*).

Visual Aids Refer to photos 123 & 124, Color comparator POT-CC-1.

Net Necrosis (C)

The outstanding characteristic of net necrosis is the presence of a network of necrotic strands, brown to brownish-black in color and sometimes extending throughout the flesh of the potato.

Net necrosis is usually found developing from the stem end, but it may be found on the side or other parts of the potato. Where such is the case, cuts should be made on the sides as well as from the ends. In mild cases, the netting may be limited to a small portion of the potato, usually at the stem end. In typical cases, it is never confined to the vascular ring.

Scoring Guide

Damage:

When removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photos 70 & 71.

Stem End Browning (C)

The characteristics of stem end browning are the presence of dark brown to black streaks or areas which can be detected by clipping only the stem end. Consequently, the value of the potato is not totally destroyed. The discoloration generally does not extend to any appreciable depth into the potato, but is rather uniform near the surface.

In severe cases, it is impossible to identify it from the early stages of net necrosis. However, in most cases, the discoloration caused by stem end browning will appear more nearly as a solid area while net necrosis appears more often as separate discolored or dead strands.

Scoring Guide

Damage:

When removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photo 85.

Vascular Discoloration (C)

The vascular bundle is typically slightly darker than the natural flesh of the potato. However, when the vascular bundle is discolored to a degree that it is distinctly darker than the natural flesh of the potato the term vascular discoloration is used. It is usually most severe at the stem end. Sudden killing of vines is one of several causes, others being verticillium wilt and fusarium wilt.

Inspectors should not attempt to diagnose either of these wilt diseases, nor use these terms on the certificate, but should apply the term "**damage by vascular discoloration.**"

Scoring Guide

Damage:

When removal causes loss of more than 5% of the total weight of the potato.

Serious damage:

When removal causes loss of more than 10% of the total weight of the potato.

Visual Aids Refer to photos 90 & 91.

Guide for Maximum Area Allowed of Hollow Heart, Hollow Heart with Discoloration, or Light Brown Discoloration (Brown Center)

| Diameter | Weight | U.S. No. 1 | U.S. No. 2 |
|-----------------|---------------|-------------------|-------------------|
| Potato is: | Potato is: | Maximum Diameter | Maximum Diameter |
| 2 in. | 4 oz. | 3/8 in. | 5/8 in. |
| 2-1/2 in. | 6 oz. | 1/2 in. | 3/4 in. |
| 2-3/4 in. | 7 oz. | 5/8 in. | 7/8 in. |
| 3 in. | 8 oz. | 3/4 in. | 1 in. |
| 3-1/4 in. | 10 oz. | 7/8 in. | 1-1/4 in. |
| 3-1/2 in. | 14 oz. | 1 in. | 1-1/2 in. |
| 3-3/4 in. | 16 oz. | 1-1/8 in. | 1-5/8 in. |
| 4 in. | 20 oz. | 1-1/4 in. | 1-7/8 in. |
| 4-1/4 in. | 24 oz. | 1-3/8 in. | 2 in. |
| 4-1/2 in. | 28 oz. | 1-1/2 in. | 2-1/8 in. |

- 1 Note: Correspondingly lesser or greater areas in smaller or larger potatoes.
- 2 Note: These dimensions are based on **area affected not aggregate area**.
- 3 Note: For Light Brown Discoloration (Brown Center) use the shade of color depicted on POT-CC-1. Shades of color lighter than this shall not be considered in determining affected area.
- 4 Note: When determining maximum area allowed use the size column which allows the greatest area affected (i.e. In the U.S. No. 1 grade a potato 3 inches in diameter, which weighs 10 ounces is allowed 7/8 inch in diameter area affected.)

DRY ROT, SOFT ROT AND WET BREAKDOWN

To make it more convenient, both dry rots and soft rots are discussed under this heading. Decays are progressive in nature, and may seriously affect the marketing quality of potatoes. All decays should be tabulated separately on the note sheet.

Classifying and Certifying Rots

All rots, regardless of the name or type, should be considered as soft rot when the rot is soft, mushy or in a leaky condition. Dry rots, other than late blight, should be scored on appearance or waste basis. Do not name decays but classify them as "**dry rot**" or "**soft rot**." However, proper identification is necessary in order to score **blackheart**, **late blight**, **southern bacterial wilt** and **ring rot**, since these defects are listed in the grade sections of the standards.

The application of tolerances states:

§51.1547...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.

The inspector should take additional samples, regardless of the lot size, when encountering large amounts of frozen, soft rot or wet breakdown to ensure that the high sample allowance stated in the application of tolerances has not been overlooked.

Soft rot is applied to either external or internal tolerances depending if it is an external or internal defect. Generally, it is external; however, there are occasions when it is internal, such as finding soft rot following blackheart or bacterial ring rot. When soft rot is internal, it must be designated as such on the notesheet and certificate and applied against the restricted tolerance for internal defects. When soft rot is reported as just "soft rot," it is assumed to be external.

Scenario 1: Based on U.S. No 1 at shipping point.

2% damage by scab (external defect).

3% damage by brown surface discoloration (external defect).

1% soft rot (external defect).

6% checksum.

The lot fails to grade, since the soft rot causes the external defects to exceed the restricted tolerance of 5% (5% external + 1% soft rot = 6%).

Scenario 2: Based on U.S. No 1 at destination.

2% damage by scab (external defect).

6% damage by internal black spots (internal defect).

2% internal soft rot (internal defect).

10% checksum.

The lot fails to grade, since the internal soft rot causes the internal defects to exceed the restricted tolerance of 7% (6% internal + 2% internal soft rot = 8%).

Scenario 3: Based on U.S. No 1 at destination.

1% old cuts (external).

6% damage by net necrosis (internal defect).

2% soft rot (external defect).

9% checksum.

The lot meets the grade since the soft rot does not cause the external defects to exceed the 7% tolerance (1% external defect + 2% soft rot = 3%). If the soft rot was internal, then the internal defects tolerance would be exceeded and the lot would fail to grade (6% internal defects + 2% internal soft rot = 8%).

Alternaria Tuber Rot (Early Blight) (C)

The lesions on the tuber are of irregular size and shape and vary from 1/4 to 1 inch in diameter. They are brown to purplish-brown, slightly sunken with irregular borders and appear somewhat similar to those produced by late blight but are shallower.

Alternaria tuber rot is a serious storage and market disease that occurs in potatoes harvested during cool, humid weather. The infection opens the way for secondary infections by species of fusarium and other organisms. Alternaria tuber rot is a form of dry rot.

Scoring Guide

Damage:

When the appearance is materially affected or more than 5% waste.

Serious damage:

When the appearance is seriously affected or more than 10% waste.

Visual Aids Refer to photos 40 & 41.

Bacterial Ring Rot (C)

Potatoes may appear to be healthy or have dark discolorations under the skin at the stem end or under the eyes. In some cases, they show a very characteristic

cracking extending only as far as the vascular system. Upon cutting the potato near the stem end, in typical cases the vascular ring shows a yellowish-white or light brown discoloration. This may involve the entire ring or only isolated portions of it. The infected tissue is often crumbly in consistency and may ooze from the freshly cut surface if the potato is squeezed. Infected potatoes may be apparently healthy at digging time and develop characteristic symptoms in storage.

Bacterial ring rot potatoes are very susceptible to secondary infection, especially by soft rot organisms, and potatoes from diseased plants show various stages of decay up to complete disintegration. With secondary infection, there is often a distinctive separation between the portions of the potato inside and outside of the vascular region; the outer layer can be broken off like a shell.

Scoring Guide

Serious damage:

All U.S. grades require potatoes to be free from bacterial ring rot. When present in any degree, score against the restrictive soft rot tolerance.

Visual Aids Refer to photos 35 & 36.

Blackleg Tuber Rot (C)

This type of decay always enters through the stem end. A mild infection may result only in the discoloration of the vascular ring at the stem end. Decayed potatoes may be white or only slightly colored and cheesy or buttery in consistency but gradually turn black and slimy as the decomposition progresses. In storage it is typical for blackleg to be confined to the center of the potato, which becomes hollowed and black with a layer of slimy lining. Decomposing parts have a disagreeable odor.

Scoring Guide

Blackleg which has advanced to soft rot should be scored on the basis of soft rot. If the discolored tissue is firm and shows no soft rot, score as:

Damage:

When removal causes loss of more than 5% of total weight of the potato.

Serious damage:

When removal causes loss more than 10% of total weight of the potato.

Visual Aids Refer to photos 42 & 43.

Brown Rot (Southern Bacterial Wilt) (C)

The disease occurs in southern districts of the United States. In the earlier stages, the potatoes, when cut, show the vascular ring moist and brown with a slight exudation from the discolored ring. In many cases, pockets develop, starting in the vascular regions and often with droplets of bacterial ooze. The disease is sometimes indicated by sunken spots at the stem, or by gray colored spots on the surface.

Frequently there are no external indications, and the presence of the defect may be determined only by cutting the potatoes. In the more advanced stages, this disease is termed brown rot. In this stage, it is frequently followed by slimy soft rot.

Scoring Guide

Serious damage:

All U.S. grades require potatoes to be free from brown rot. When present in any degree, score against the restrictive soft rot tolerance.

Visual Aids Refer to photos 37 & 38.

Fusarium Tuber Rot (C)

This type of decay usually enters through injuries such as cuts and bruises, and may occur any place on the potato. The decaying tissues soon become sunken and the skin will have a wrinkled appearance. The color of the affected tissues varies from light to dark brown or even black. A distinct open cavity and/or masses of whitish mold are the two conclusive indicators of fusarium infection.

Do not confuse infections of multi-colored starchy molds with fusarium tuber rot. These starchy molds, commonly misidentified as fusarium, often appear either alone or in conjunction with fusarium as they also enter the potato through injuries, cuts and bruises. The rot may be dry and brittle, wet and jelly-like or even mushy and leaky.

Fusarium tuber rot is usually dry at low temperatures and wet at high temperatures. It is never slimy even when wet and never has a bad odor unless accompanied by other fungi or bacteria.

Sometimes the center of the decayed area is dry with margins being moist, but not moist enough to spot a container or wet adjacent potatoes, in which case it should be classed as moist type. If the entire decayed area is so dry that no moisture appears when squeezed, or is only moist as described above it should be reported as "dry rot."

Scoring Guide

Wet Type:

Serious damage:

Score against the soft rot tolerance in all grades regardless of the affected area when the affected area is wet and mushy. Report as "**soft rot.**"

Moist and Dry Types:

Damage:

When more than 5% waste. Report as "**dry rot.**"

Serious damage:

When more than 10% waste. Report as "**dry rot.**"

Visual Aids Refer to photos 51 - 52b.

Jelly End Rot (Glassy End Rot) (C)

Jelly end rot is identified by its jelly like, watery consistency occurring at the stem end of the potato, second growth knobs or pointed ends. This disorder is caused by conditions that interfere with the deposition of starch in the growing tissues. There is some evidence that fluctuations in moisture supply during the growing season may be responsible. Jelly end rot often dries leaving a shriveled flaky area.

Scoring Guide

Dry or Moist Stage:

Any yellowish flesh discoloration or translucence due to jelly end rot will be included in the waste cut.

Damage:

When materially affecting the appearance of the potato, or

When removal causes loss of more than 5% of the total weight of the potato.

Serious Damage:

When seriously affecting the appearance of the potato, or

When removal causes loss of more than 10% of the total weight of the potato.

Mushy or Leaky Stage:

Serious damage:

Score any amount as soft rot.

Visual Aids Refer to photo 53.

Late Blight Tuber Rot (C)

When not complicated by secondary organisms, the decay is reddish-brown or purplish-brown in color and spreads irregularly from the surface through the flesh, like the diffusion of a brown stain.

Under storage conditions, the disease is typically a dry rot, forming irregular sunken patches which, under conditions favorable to their development, such as high humidity and temperature, may involve the entire potato. These patches are usually quite firm, unless secondarily affected by other parasites. Frequently, they have a metallic tinge, especially on the border of healthy tissue. This defect can be detected by making thin cuts on the exterior of the potatoes.

Scoring Guide

Serious damage:

All U.S. grades require potatoes to be free from late blight tuber rot. When present in any degree, score against the restrictive soft rot tolerance.

Visual Aids Refer to photos 32 - 34.

Leak (C)

Infection usually takes place through cuts or bruises. The skin may show a brownish, somewhat water-soaked discoloration. The enlarging lesions are frequently sharply defined by a dark brown boundary line. The most characteristic symptom is the extremely watery nature of the affected tissue. The water is held by the tissues until pressure is applied, causing the skin to break and release a yellowish or brownish liquid.

Scoring Guide

Serious damage:

When present in any degree, score against the restrictive soft rot tolerance.

Visual Aids Refer to photos 65 & 66.

Pink Rot (C)

Pink rot occurs chiefly in cool, wet, poorly drained soils. External symptoms occur usually at the stem end, however at times the eyes and lenticels are infected. In white-skin potatoes the infected area turns dark brown, whereas in red-skin potatoes the first symptom is fading red. Blotchy purplish or black discoloration develops around the eyes and lenticels. Rotted tubers feel spongy or rubbery and the skin is easily sloughed off. When squeezed, droplets of liquid come from eyes and lenticels.

Scoring Guide

Serious damage:

When present in any degree, score against the restrictive soft rot tolerance

Visual Aids Refer to photos 75 & 76.

Sclerotium Rot (C)

This rot is usually found in the early southern crop of potatoes. It seems to be associated with dirty potatoes, which, in all probability, were wet when dug and packed. This disease is marked by a watery, soft, mushy, odorless, and often colorless condition of the affected tissue. The lesions at times are yellowish to light brown and may appear as small, slightly sunken spots with brown margins. The consistency is granular-wet to watery, rather than slimy, and the soft, decaying tissue can easily be separated from the healthy tissue. As the disease develops, a rather fine, silky, white mycelium grows radially from a given point and forms fans closely appressed over the surface of the lesions and adjacent healthy tissues.

Scoring Guide

Serious damage:

When present in any degree, score against the restrictive soft rot tolerance.

There are instances when Sclerotium Rot causes dry pitted areas, which are judged on the same basis as pitted Scab (appearance/waste).

Visual Aids Refer to photos 79 & 80.

Slimy Soft Rot (C)

Slimy soft rots of potatoes are quite common and may be either of primary or secondary nature. The decaying parts turn into a stringy slime with a repulsive odor. As a secondary infection, it may follow other diseases or injuries, especially late blight tuber rot and scald or freezing injury.

Scoring Guide

Serious damage:

When present in any degree, score against the restrictive soft rot tolerance.

Visual Aids Refer to photo 39.

Wet Breakdown (C)

Potatoes that are frozen will exhibit ice crystal formation within the tissues (see section on **Freezing/Freezing Injury**). Upon thawing, potatoes will exhibit a wet leaking condition known as wet breakdown.

Scoring Guide

Serious damage:

All potatoes with any amount of wet breakdown are scored against the restrictive tolerance for freezing, soft rot and wet breakdown.

Visual Aids Refer to photo 31.

Fingerling Potatoes

Fingerlings are small thin-skinned potatoes. There are several varieties of fingerling potatoes including French, Russian, Austrian, and American. These varieties can be red-skinned, tan-skinned, or purple-skinned.

The U.S. Standards for Grades of Potatoes can be applied to fingerling varieties when performing the inspection. However, in the U.S. No.1 grade the minimum size is 1-7/8 inches unless otherwise specified. Generally fingerlings will not meet the size requirement for the grade; therefore the applicant may specify the size. For example, the applicant may specify "U.S. No. 1, 1 inch minimum diameter. If the applicant does not specify size, the lot can still be certified using the standard but may or may not meet grade due to size.

Visual Aids Refer to POT.-L-1 (Official Visual Aids for Potatoes), page 31.

French Fingerling

French Fingerling is a variety of fingerling potatoes that are small finger shaped tubers. These potatoes have shallow eyes, red smooth skin and a red-yellow swirl colored flesh. When cut across, the potatoes show an internal ring of pink, which is characteristic for the variety and is not scorable as a defect.

PART 2: INSPECTION INSTRUCTIONS FOR SEED POTATOES

GENERAL

The standards apply to potatoes ***positively identified as certified seed of one variety by the State of origin.*** They do not supplement any State seed grade or regulation. ***Potatoes sold for seed purposes that are not positively identified by tags, seals, container markings or some other suitable means of identification cannot be certified as meeting the requirements of the U.S. No. 1 Seed grade.***

In order to properly handle requests for certification on the basis of State grades or regulations, each office should have copies of State grades and regulations. If there is a question as to the seed grade requirements, the inspection should be based on the U.S. Standards for Grades of Seed Potatoes. Statements or tags or other means of identification of the lot should be reported.

Sampling and inspection procedures are the same as for the "fresh standards." However, scoring guides and tolerances must be followed in accordance with the U.S. Standards for Grades of Seed Potatoes.

Whenever possible the inspection should be made with non-infected equipment. The applicant should be advised that inspectors are not equipped to clean and sterilize their equipment and that clean equipment or cleaning facilities should be furnished by the applicant.

TOLERANCES

FOR DEFECTS:

| | |
|---------------------------|---|
| 10% Serious Damage | Hollow Heart |
| 10% Damage | Soil |
| 5% Serious Damage | Vascular Ring Discoloration |
| 11% | Remaining Requirements of the Grade, <i>Including</i> |
| 6% | External Defects |
| 5% | Internal Defects, <i>Including</i> |
| 0% | Bacterial Ring Rot |
| 2% Serious Damage | Fusarium (Dry/Moist) |
| 1% | Late Blight |
| 0% | Nematode or Tuber Moth Injury |
| .25% | Variety Mixture |
| .50% (SPI) | Frozen, Soft Rot, Wet Breakdown |
| 1% (MKT) | Frozen, Soft Rot, Wet Breakdown |

FOR OFF-SIZE:

| | |
|------------|-----------|
| 5% | UNDERSIZE |
| 10% | OVERSIZE |

APPLICATION OF TOLERANCES

Individual samples cannot exceed double the tolerance specified, except that at least one defective and one off-size potato may be permitted in any sample, provided the lot averages within tolerance.

En route/at destination: 10 percent 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.

SIZE

When measuring diameter on seed potatoes, the inspector must confirm that the seed potatoes meet the minimum/maximum diameters for the U.S. grades using round sizers. During this process the industry may request that the potatoes also be sized

using internationally recognized (UNECE Standards) square sizers. Square sizers are usually applied to determine the percent of potatoes less than 28 mm.

On the notesheet, keep columns for all sizes being determined by round and square sizers. Write the U.S. grade statement, determined from the round sizers, in the "GRADE" section. Report the size determined by the square sizers in the "OTHER" or "REMARKS" section. For example: GRADE: "U.S. No., 1-3/4 inch minimum diameter." OTHER or REMARKS: "Applicant specified 1-3/4 inch minimum diameter. Also meets contract specifications of 28 mm minimum diameter, determined with square sizers and reported at applicant's request."

When measuring the diameter, drop the potato through the round or square opening so that its longitudinal axis is at right angles to the sizer, without regard to the position of the stem end.

The U.S. Standards for Grades of Seed Potatoes have the following size requirements:

MINIMUM SIZE: Unless otherwise specified, the minimum diameter will not be less than 1-1/2 inches.

MAXIMUM SIZE: Unless otherwise specified, the maximum size will not exceed 3-1/4 inches in diameter or 12 ounces in weight.

When determining maximum size, individual potatoes cannot exceed the maximum diameter or weight requirements. Therefore, a potato larger than 3-1/4 inches in diameter or weighing more than 12.49 ounces is considered oversize unless a larger diameter or weight is specified in connection with the grade. When State certified seed tags are printed "U.S. No. 1 Seed Potatoes" only, the total of maximum diameter and maximum weight will be added together to compute oversize. For example, a lot showing 8% of potatoes over 3-1/4 inches in diameter and 5% over 12.49 ounces (the two added together exceeds the 10% tolerance for oversize) will be certified as "Failing to grade U.S. No. 1 Seed Potatoes account oversize."

REPORTING BACTERIAL RING ROT

Bacterial ring rot is a very serious disease in seed potatoes. Many growers refuse to plant a lot of seed in which even a single specimen of ring rot is found. Therefore, it is very important that the diagnosis of this disease in seed potatoes be correct. An inspection certificate which shows bacterial ring rot when the cause of the disease is common slimy soft rot, wilt or early stages of blackleg may cause a serious and unwarranted loss to the shipper. Whenever a soft rot is found in a lot of seed potatoes, it should be reported only as soft rot even though the inspector believes it may be bacterial ring rot, unless representative samples have been diagnosed as such by a Federal or State pathologist.

An applicant may request that seed potato inspections show factors such as scab, net necrosis, stem end browning and Rhizoctonia which are not severe enough to

score against the U.S. No. 1 grade. This can be reported followed with the statement "not affecting grade, reported at applicant's request."

Since freedom from inheritable diseases is one of the most important factors in determining quality of seed potatoes, no statement should be made as to the quality or fitness of the stock for seed purposes.

**FOR DEFECT SCORING GUIDELINES AND DEFINITIONS, REFER TO THE U.S
STANDARDS FOR GRADES OF SEED POTATOES IN APPENDIX I.**

APPENDIX I: U.S. Grade Standards

United States Standards for Grades of Potatoes¹

Effective June 3, 2011

Grades

51.1540 [Reserved].

51.1541 U.S. No. 1.

51.1542 U.S. Commercial.

51.1543 U.S. No. 2.

51.1544 [Reserved].

Size

51.1545 Size.

Tolerances

51.1546 Tolerances.

Application of Tolerances

51.1547 Application of tolerances.

Samples for Grade and Size Determination

51.1548 Samples for grade and size determination.

Skinning

51.1549 Skinning.

Definitions

51.1550 Similar varietal characteristics.

51.1551 Firm.

51.1552 Clean.

51.1553 Fairly clean.

51.1554 Mature.

51.1555 Fairly well matured.

51.1556 Well shaped.

51.1557 Fairly well shaped.

51.1558 Seriously misshapen.

51.1559 [Removed and Reserved].

51.1560 Damage.

51.1561 Serious damage.

51.1562 Freezing.

51.1563 Soft rot or wet breakdown.

51.1564 External defects.

51.1565 Internal defects.

Metric Conversion Table

51.1566 Metric conversion table.

Grades

§51.1540 [Reserved].

§51.1541 U.S. No. 1.

"U.S. No. 1" consists of potatoes which meet the following requirements:

(a) Similar varietal characteristics, except when designated as a mixed or specialty pack;

¹ Packing of the product in conformity with requirements of these standards shall not excuse failure to comply with the provisions of the Federal Food and Drug Cosmetic Act or with applicable State laws and regulations.

- (b) Firm;
- (c) Fairly clean;²
- (d) Fairly well shaped;
- (e) Free from:
 - (1) Freezing;
 - (2) Blackheart;
 - (3) Late blight, southern bacterial wilt and ring rot; and,
 - (4) Soft rot and wet breakdown.
- (f) Free from damage by any other cause. See §§51.1564 and 51.1565.
- (g) Size. Not less than 1-7/8 inches in diameter, unless otherwise specified in connection with the grade.
- (h) For tolerances see §51.1546.

§51.1542 U.S. Commercial.

"U.S. Commercial" consists of potatoes which meet the requirements of U.S. No. 1 grade except for the following:

- (a) Free from serious damage caused by:
 - (1) Dirt or other foreign matter;
 - (2) Russet scab; and,
 - (3) Rhizoctonia.
- (b) Increased tolerances for defects specified in §51.1546.

§51.1543 U.S. No. 2.

"U.S. No. 2" consists of potatoes which meet the following requirements:

- (a) Similar varietal characteristics, except when designated as a mixed or specialty pack;
- (b) Not seriously misshapen;
- (c) Free from:
 - (1) Freezing;
 - (2) Blackheart;
 - (3) Late blight, southern bacterial wilt and ring rot; and,
 - (4) Soft rot and wet breakdown.
- (d) Free from serious damage by any other cause. See §§51.1564 and 51.1565.
- (e) Size. Not less than 1-1/2 inches in diameter, unless otherwise specified in connection with the grade.
- (f) For tolerances see §51.1546.

§51.1544 [Reserved].

Size

§51.1545 Size.

- (a) The minimum size, or minimum and maximum sizes may be specified in connection with the grade in terms of diameter or weight of the individual potato, or in accordance with one of the size designations in Table I or Table II: **Provided**, That sizes so specified shall not be in conflict with the basic size requirements for the grade.
- (b) When size is designated as shown in Table II, the corresponding weight ranges shall apply. These size designations may be applied to potatoes packed in any size container: **Provided**, that the weight ranges are within the limits specified.

²Potatoes in containers bearing official State Seed Certification Tags and Seals are not required to be fairly clean but shall be free from damage by dirt.

Table I

| Size designation | Minimum diameter ¹ or weight | | Maximum diameter ¹ or weight | |
|---------------------------|---|------------------|---|------------------|
| | Inches | Ounces | Inches | Ounces |
| Creamer..... | 3/4 | (³) | 1-5/8 | (³) |
| Chef..... | 2-3/4 | 8 | 4-1/2 | 28 |
| Size A ² | 1-7/8 | (³) | (³) | (³) |
| Size B..... | 1-1/2 | (³) | 2-1/4 | (³) |
| Small..... | 1-3/4 | (³) | 2-1/2 | 6 |
| Medium..... | 2-1/4 | 5 | 3-1/4 | 10 |
| Large..... | 3 | 10 | 4-1/2 | 28 |

¹Diameter means the greatest dimension at right angles to the longitudinal axis, without regard to the position of the stem end.

²In addition to the minimum size specified, a lot of potatoes designated as Size A shall contain at least 40 percent of potatoes which are 2-1/2 inches in diameter or larger or 6 ounces in weight or larger.

³No requirement.

Table II

[Ounces]

| Size designation | Minimum weight | Maximum weight |
|------------------|----------------|----------------|
| Under 50..... | 15 | |
| 50..... | 12 | 19 |
| 60..... | 10 | 16 |
| 70..... | 9 | 15 |
| 80..... | 8 | 13 |
| 90..... | 7 | 12 |
| 100..... | 6 | 10 |
| 110..... | 5 | 9 |
| 120..... | 4 | 8 |
| 130..... | 4 | 8 |
| 140..... | 4 | 8 |
| Over 140..... | 4 | 8 |

Tolerances**§51.1546 Tolerances.**

To allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances by weight or equivalent basis, are provided as specified.

(a) **For defects – (1) U.S. No. 1.** (i) **At Shipping Point:** A total of 8 percent for potatoes in any lot which fail to meet the requirements for the grade: **Provided**, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(A) 5 percent for external defects;

(B) 5 percent for internal defects; and

(C) Not more than a total of 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(ii) **En route or at Destination:** A total of 10 percent for potatoes in any lot which fail to meet the requirements for the grade: **Provided**, That included in this tolerance not more than a total of 8 percent shall be allowed for permanent defects: **And provided further**, the following percentages shall be allowed for the defects listed:

(A) 7 percent for external defects, including therein not more than 5 percent for permanent external defects;

(B) 7 percent for internal defects, including therein not more than 5 percent for permanent internal defects; and

(C) Not more than a total of 2 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(2) **U.S. Commercial:** A total of 20 percent for potatoes in any lot which fail to meet the requirements for the grade: **Provided**, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(i) 10 percent for potatoes which fail to meet the requirements for U.S. No. 2 grade, including therein not more than:

(ii) 6 percent for external defects;

(iii) 6 percent for internal defects; and

(iv) Not more than a total of 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(3) **U.S. No.2.** (i) **At Shipping Point:** A total of 10 percent for potatoes in any lot which fail to meet the requirements for the grade: **Provided**, That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(A) 6 percent for external defects;

(B) 6 percent for internal defects; and

(C) Not more than a total of 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(ii) **En route or at Destination:** A total of 12 percent for potatoes in any lot which fail to meet the requirements for the grade: **Provided**, That included in this tolerance not more than a total of 10 percent shall be allowed for permanent defects: **And provided further**, the following percentages shall be allowed for the defects listed:

(A) 8 percent for external defects, including therein not more than 6 percent for permanent external defects;

(B) 8 percent for internal defects, including therein not more than 6 percent for permanent internal defects; and

(C) Not more than a total of 2 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See §51.1547.

(b) **For off-size.** (1) Not more than 3 percent of the potatoes in any lot may be smaller than the required or specified minimum size except that a tolerance of 5 percent shall be allowed for potatoes packed to meet a minimum size of 2-1/4 inches or larger in diameter or 5 ounces or more in weight. In addition, not more than 10 percent may be larger than any required or specified maximum size. See §51.1547.

(2) When a percentage of the potatoes is specified to be of a certain size and larger, individual samples shall have not less than one-half of the percentage specified: **Provided**, That the average for the entire lot is not less than the percentage specified.

Application of Tolerances

§51.1547 Application of tolerances.

Individual samples shall have not 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.

Samples for Grade and Size Determination

§51.1548 Samples for grade and size determination.

Individual samples shall consist of at least 20 pounds. When individual packages contain at least 20 pounds, each individual sample is drawn from one package; when packages contain less than 20 pounds, a sufficient number of adjoining packages are opened to provide at least a 20-pound sample. The number of such individual samples drawn for grade and size determination will vary with the size of the lot.

Skinning

§51.1549 Skinning.

(a) The following definitions provide a basis for describing lots of potatoes as to the degree of skinning whenever description may be appropriate:

(1) "Practically no skinning" means that not more than 5 percent of the potatoes in the lot have more than one-tenth of the skin missing or "feathered;"

(2) "Slightly skinned" means that not more than 10 percent of the potatoes in the lot have more than one-fourth of the skin missing or "feathered;"

(3) "Moderately skinned" means that not more than 10 percent of the potatoes in the lot have more than one-half of the skin missing or "feathered;" and

(4) "Badly skinned" means that more than 10 percent of the potatoes in the lot have more than one-half of the skin missing or "feathered."

Definitions

§51.1550 Similar varietal characteristics.

"Similar varietal characteristics" means that the potatoes in any lot have the same general shape, color and character of skin, and color of flesh.

§51.1551 Firm.

"Firm" means that the potato is not shriveled or flabby.

§51.1552 Clean.

"Clean" means that at least 90 percent of the potatoes in any lot are practically free from dirt or staining and practically no loose dirt or other foreign matter is present in the container.

§51.1553 Fairly clean.

"Fairly clean" means that at least 90 percent of the potatoes in any lot are reasonably free from dirt or staining and not more than a slight amount of loose dirt or foreign matter is present in the container.

§51.1554 Mature.

"Mature" means that the skins of the potatoes are generally firmly set and not more than 5 percent of the potatoes in the lot have more than one-tenth of the skin missing or "feathered."

§51.1555 Fairly well matured.

"Fairly well matured" means that the skins of the potatoes are generally fairly firmly set and not more than 10 percent of the potatoes in the lot have more than one-fourth of the skin missing or "feathered."

§51.1556 Well shaped.

"Well shaped" means that the potato has the normal shape for the variety.

§51.1557 Fairly well shaped.

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

§51.1558 Seriously misshapen.

"Seriously misshapen" means that the potato is seriously pointed, dumbbell-shaped or otherwise badly deformed.

§51.1559 [Removed and Reserved].

§51.1560 Damage.

"Damage" means any defect, or any combination of defects, which materially detracts from the edible or marketing quality, or the internal or external appearance of the potato, or any external defect which cannot

be removed without a loss of more than 5 percent of the total weight of the potato. See Tables III, IV, V, VI in §51.1564 and Table VII in §51.1565.

§51.1561 Serious damage.

"Serious damage" means any defect, or any combination of defects, which seriously detracts from the edible or marketing quality, or the internal or external appearance of the potato, or any external defect which cannot be removed without a loss of more than 10 percent of the total weight of the potato. See Tables III, IV, V, VI in §51.1564 and Table VII in §51.1565.

§51.1562 Freezing.

"Freezing" means that the potato is frozen or shows evidence of having been frozen.

§51.1563 Soft rot or wet breakdown.

"Soft rot or wet breakdown" means any soft, mushy, or leaky condition of the tissue such as slimy soft rot, leak, or wet breakdown following freezing injury.

§51.1564 External defects.

"External defects" are defects which can be detected externally. However, cutting may be required to determine the extent of the injury. Some external defects are listed in Table III, IV, V, and VI.

Table III - External Defects

| Defects | Damage | Serious Damage¹ |
|---|--|--|
| Air Cracks | When removal causes a loss of more than 5 percent of the total weight of the potato or when the air crack(s) affects more than 1/3 the length or diameter of the potato (whichever is greater) in the aggregate. | When removal causes a loss of more than 10 percent of the total weight of the potato or when the air crack(s) affects more than 3/4 the length or diameter of the potato (whichever is greater) in the aggregate. |
| Artificial Coloring | When unsightly or when concealing any defect causing damage or when penetrating the flesh and removal causes loss of more than 5 percent of total weight of potato. | When concealing a serious defect or when penetrating into the flesh and removal causes loss of more than 10 percent of total weight of potato. |
| Bruises (Not including pressure bruise and sunken discolored areas) | When removal causes a loss of more than 5 percent of the total weight of the potato or when the area affected is more than 5 percent of the surface in the aggregate (i.e. 3/4 inch on a 2-1/2 inch or 6 oz. potato). Correspondingly lesser or greater areas in smaller or larger potatoes. | When removal causes a loss of more than 10 percent of the total weight of the potato or when the area affected is more than 10 percent of the surface in the aggregate (i.e. 1-1/4 inches on a 2-1/2 inch or 6 oz. potato). Correspondingly lesser or greater areas in smaller or larger potatoes. |
| Cuts | When one smooth cut affects more than 5 percent of the surface area. | Cut(s) that affect more than 10 percent of the surface area in the aggregate or when a single side cut extends beyond 1/2 the length of the potato. |
| Dirt | When materially detracting from the appearance of the potato. | When seriously detracting from the appearance of the potato. |
| Elephant Hide | When affecting over 10 percent of the surface area of the potato. | When affecting over 25 percent of the surface area. |
| Enlarged Lenticels | When materially detracting from the appearance of the potato. | When seriously detracting from the appearance of the potato. |
| External Discoloration (Areas that are light tan or lighter in color and blends should be ignored.) | When more than 30 percent of the surface is affected by light tan or light brown colors which do not blend or when more than 15 percent of the surface is affected by colors darker than light tan or light brown. | When more than 60 percent of the surface is affected by light tan or light brown colors which do not blend or when more than 30 percent of the surface is affected by colors darker than light tan or light brown. |

| Defects | Damage | Serious Damage¹ |
|---|---|---|
| Flattened or Depressed Areas/Pressure Bruises | When removal of underlying discolored flesh causes a loss of more than 5 percent of the total weight of the potato or when the flattened or depressed area(s) covers more surface area than allowed in Table IV. (See Table IV.) | When removal of underlying discolored flesh causes a loss of more than 10 percent of the weight of the potato or when the flattened depressed area(s) covers more surface area than allowed in the Table IV. (See Table IV.) |
| Flea Beetle Injury | When materially detracting from the appearance or when removal causes a loss of more than 5 percent of the total weight of the potato or when the area affected is more than 5 percent of the surface in the aggregate. | When seriously detracting from the appearance of the potato or when removal causes a loss of more than 10 percent of the weight of the potato or when the area affected is more than 10 percent of the surface in the aggregate. |
| Greening | When removal causes a loss of more than 5 percent of the total weight of the potato or when green color affects more than 25 percent of the surface in the aggregate. | When removal causes a loss of more than 10 percent of the weight of the potato or when green color affects more than 50 percent of the surface in the aggregate. |
| Growth Cracks | When the growth crack(s) affects more than 1/2 the length of the potato in the aggregate on round varieties or more than 1/3 the length in the aggregate on long varieties; or, when the depth is greater than that as outlined in Table V. (See Table V.) | When the growth crack(s) affects more than 3/4 the length of the potato in the aggregate or when the depth is greater than that as outlined in Table V. (See Table V.) |
| Grub Damage | When removal causes a loss of more than 5 percent of the total weight of the potato or when affecting more than 5 percent of the surface area (i.e. more than 3/4 inch on a 2-1/2 inch or 6 ounce potato). Correspondingly lesser or greater areas in smaller or larger potatoes. | When removal causes a loss of more than 10 percent of the total weight of the potato or when affecting more than 10 percent of the surface area (i.e. more than 1-1/4 inch on a 2-1/2 inch or 6 ounce potato). Correspondingly lesser or greater areas in smaller or larger potatoes. |
| Insects or Worms | (See Serious Damage.) | When present inside the potato. |
| Nematode (Root Knot) | When removal causes loss of more than 5 percent of total weight of potato. | When removal causes loss of more than 10 percent of total weight of potato. |
| Rhizoctonia | When affecting more than 15 percent of the surface in the aggregate. | When affecting more than 50 percent of the surface in the aggregate. |

| Defects | Damage | Serious Damage ¹ |
|--------------------------------|---|--|
| Rodent or Bird Damage | When removal causes a loss of more than 5 percent of the total weight of the potato or when affecting more than 5 percent of the surface area (i.e. more than 3/4 inch on a 2-1/2 inch or 6 ounce potato). Correspondingly lesser or greater areas in smaller or larger potatoes. | When removal causes a loss of more than 10 percent of the total weight of the potato or when affecting more than 10 percent of the surface area (i.e. more than 1-1/4 inch on a 2-1/2 inch or 6 ounce potato). Correspondingly lesser or greater areas in smaller or larger potatoes. |
| Russeting (On Non Russet Type) | When more than 50 percent of the surface is affected in the aggregate. | N/A |
| Scab, Pitted | When removal causes a loss of more than 5 percent of the total weight of the potato or when scab affects an aggregate area of more than 1/2 inch. (Based on a potato 2-1/2 inches in diameter or 6 oz. in weight.) Correspondingly lesser or greater areas in smaller or larger potatoes. | When the removal causes a loss of more than 10 percent of the total weight of the potato or when scab affects an aggregate area of more than 1 inch. (Based on a potato 2-1/2 inches in diameter or 6 oz. in weight.) Correspondingly lesser or greater areas in smaller or larger potatoes. |
| Scab, Russet | Smooth and affecting more than 1/3 of the surface or rough russet scab which affects more than 10 percent of the surface in the aggregate. | Rough and affecting more than 25 percent of the surface in the aggregate. |
| Scab, Surface | When more than 5 percent of the surface in the aggregate is affected. | When more than 25 percent of the surface in the aggregate is affected. |
| Second Growth | When materially detracting from the appearance of the potato. | When seriously detracting from the appearance of the potato. |
| Silver Scurf | When affecting more than 50 percent of the surface area of the potato. | When its severity causes a wrinkling of the skin over more than 50 percent of the surface. |
| Sprouts | When more than 5 percent of the potatoes in a lot may have any sprout not more than 1/4 inch in length at shipping point; more than 1/2 inch in length at destination; or have numerous individual and/or clusters of sprouts which materially detract from the appearance of the potato. | When more than 10 percent of the potatoes in any sprout more than 1/2 inch in length at shipping point; more than 1 inch in length at destination; or have numerous individual and/or clusters of sprouts which seriously detract from the appearance of the potato. Serious damage by sprouts shall only be scored against the U.S. Commercial and U.S. No. 2 grades. |
| Sunburn | When removal causes loss of more than 5 percent of total weight of potato. | When removal causes loss of more than 10 percent of total weight of potato. |

| Defect | Damage | Serious Damage¹ |
|--|---|---|
| Sunken Discolored Areas | SEE TABLE VI | SEE TABLE VI |
| Surface Cracks (Areas affected by fine net-like cracking should be ignored.) | When smooth shallow cracking affects more than 1/3 of the surface or when rough deep cracking affects more than 5 percent of the surface. | When rough deep cracking affects more than 10 percent of the surface. |
| Wireworm or Grass Damage | When affecting the flesh of the potato and removal causes loss of more than 5 percent of total weight of potato. | When affecting the flesh of the potato and removal causes loss of more than 10 percent of total weight of potato. |

¹The following defects are considered serious damage when present in any degree: 1. Freezing. 2. Late blight. 3. Ring rot. 4. Southern bacterial wilt. 5. Soft rot. 6. Wet breakdown.

**Table IV
Flattened or Depressed Areas - Pressure Bruises Maximum Area Allowed**

| Diameter | Weight | No. 1 (aggregate area) | No. 2 (aggregate area) |
|--------------------------|------------------------|-----------------------------------|-----------------------------------|
| Potato is: | Potato is: | Not more than: | Not more than: |
| Less than 2 in. | Less than 4 oz. | 1/2 in. | 1 in. |
| 2 to 2-1/2 in. | 4 to 6 oz. | 1 in. | 1-1/2 in. |
| More than 2-1/2 to 3 in. | More than 6 to 8 oz. | 1-1/4 in. | 1-3/4 in. |
| More than 3 to 3-1/2 in. | More than 8 to 14 oz. | 1-1/2 in. | 1-7/8 in. |
| More than 3-1/2 to 4 in. | More than 14 to 20 oz. | 1-3/4 in. | 2 in. |
| More than 4 to 4-1/2 in. | More than 20 to 28 oz. | 2 in. | 2-1/4 in. |
| More than 4-1/2 to 5 in. | More than 28 to 36 oz. | 2-1/4 in. | 2-3/4 in. |
| More than 5 in. | More than 36 oz. | 2-1/2 in. | 3-1/4 in. |

**Table V
Depth Allowed For Growth Cracks**

| Diameter | Weight | No. 1 (Depth) | No. 2 (Depth) |
|--------------------------|--------------------------|--------------------------|--------------------------|
| Potato is: | Potato is: | Not more than: | Not more than: |
| Less than 2 in. | Less than 4 oz. | 1/8 in. | 1/4 in. |
| 2 to 2-1/2 in. | 4 oz. to 6 oz. | 1/4 in. | 3/8 in. |
| More than 2-1/2 to 3 in. | More than 6 oz. to 8 oz. | 3/8 in. | 1/2 in. |
| More than 3 in. | More than 8 oz. | 1/2 in. | 5/8 in. |

**Table VI
Sunken Discolored Areas Maximum Area Allowed**

| Diameter | Weight | No. 1 (aggregate area) | No. 2 (aggregate area) |
|--------------------------|------------------------|-----------------------------------|-----------------------------------|
| Potato is: | Potato is: | Not more than: | Not more than: |
| Less than 2 in. | Less than 4 oz. | 3/8 in. | 3/4 in. |
| 2 to 2-1/2 in. | 4 to 6 oz. | 3/4 in. | 1 in. |
| More than 2-1/2 to 3 in. | More than 6 to 8 oz. | 1 in. | 1-1/4 in. |
| More than 3 to 3-1/2 in. | More than 8 to 14 oz. | 1-1/4 in. | 1-1/2 in. |
| More than 3-1/2 to 4 in. | More than 14 to 20 oz. | 1-1/2 in. | 1-3/4 in. |
| More than 4 to 4-1/2 in. | More than 20 to 28 oz. | 1-3/4 in. | 2 in. |
| More than 4-1/2 to 5 in. | More than 28 to 36 oz. | 2 in. | 2-1/4 in. |
| More than 5 in. | More than 36 oz. | 2-1/4 in. | 2-1/2 in. |

§51.1565 Internal defects.

"Internal defects" are defects which cannot be detected without cutting the potato. Some internal defects are listed in Table VII.

Table VII -- Internal Defects

| Defects | Damage Maximum Allowed | Serious Damage Maximum Allowed |
|---|---|---|
| Occurring outside of or not entirely confined to the vascular ring | | |
| Ingrown Sprouts, Internal Black Spot, Internal Discoloration, Vascular Browning, Fusarium Wilt, Net Necrosis, Other Necrosis, Stem End Browning | 5% waste | 10% waste |
| Internal Black Spot. | When the spot(s) are darker than the official color chip (POT-CC-2) after removing 5 percent of the total weight of the potato. | When the spot(s) are darker than the official color chip (POT-CC-2) after removing 10 percent of the total weight of the potato. |
| Occurring entirely within the vascular ring | | |
| Hollow Heart or Hollow Heart with Discoloration | Area affected not to exceed that of a circle 1/2 inch in diameter in a potato 2-1/2 inches in diameter or 6 ounces in weight. ¹ | Area affected not to exceed that of a circle 3/4 inch in diameter in a potato 2-1/2 inches in diameter or 6 ounces in weight. ¹ |
| Light Brown Discoloration (Brown Center) | Area affected not to exceed that of a circle 1/2 inch in diameter in a potato 2-1/2 inches in diameter or 6 ounces in weight. ¹ | Area affected not to exceed that of a circle 3/4 inch in diameter in a potato 2-1/2 inches in diameter or 6 ounces in weight. ¹ |
| Internal Brown Spot and Similar Discoloration (Heat Necrosis) | Not more than the equivalent of 3 scattered spots 1/8 inch in diameter in a potato 2-1/2 inches in diameter or 6 ounces in weight. ¹ | Not more than the equivalent of 6 scattered spots 1/8 inch in diameter in a potato 2-1/2 inches in diameter or 6 ounces in weight. ¹ |

¹**Note:** Correspondingly lesser or greater areas in smaller or larger potatoes.

Metric Conversion Table
§51.1566 Metric conversion table.

| Ounces | Grams |
|----------------|--------------|
| 1 equals..... | 28.35 |
| 4 equals..... | 113.40 |
| 5 equals..... | 141.75 |
| 6 equals..... | 170.10 |
| 7 equals..... | 198.45 |
| 8 equals..... | 226.80 |
| 9 equals..... | 255.15 |
| 10 equals..... | 283.50 |
| 12 equals..... | 340.20 |
| 14 equals..... | 396.90 |
| 16 equals..... | 453.60 |
| 18 equals..... | 510.30 |
| 19 equals..... | 538.60 |
| 20 equals..... | 567.00 |

Inches Millimeters (mm)

| | |
|-------------------|-------|
| 1/8 equals..... | 3.2 |
| 1/4 equals..... | 6.4 |
| 1/2 equals..... | 12.7 |
| 3/4 equals..... | 19.1 |
| 1 equals..... | 25.4 |
| 1-1/2 equals..... | 38.1 |
| 2 equals..... | 50.8 |
| 2-1/2 equals..... | 63.5 |
| 3 equals..... | 76.2 |
| 3-1/2 equals..... | 88.9 |
| 4 equals..... | 101.6 |
| 4-1/2 equals..... | 114.3 |

United States Standards for Grades of Seed Potatoes

Effective March 6, 1987

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 I – 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 (19.1 mm) long or when the aggregate length of all holes is more than 1-1/4 inches (31.mm) ¹ . | | |
| 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. |

¹Definitions 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 ¹ | | |
| All other internal discoloration excluding discoloration confined to the vascular ring..... | | | X |

¹Definitions 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 (19.1 mm) in diameter. ¹ | | |

¹Definitions 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. Corresponding lesser or greater areas are permitted on smaller or larger potatoes.

APPENDIX II: PERCENTAGE CHART

20 LB. SAMPLE

| | | |
|------|---|-----|
| .25 | = | 1% |
| .50 | = | 3% |
| .75 | = | 4% |
| 1.00 | = | 5% |
| 1.25 | = | 6% |
| 1.50 | = | 8% |
| 1.75 | = | 9% |
| 2.00 | = | 10% |
| 2.25 | = | 11% |
| 2.50 | = | 13% |
| 2.75 | = | 14% |
| 3.00 | = | 15% |
| 3.25 | = | 16% |
| 4.00 | = | 20% |

50 LB. SAMPLE

| | | |
|-------|---|-----|
| .50 | = | 1% |
| 1.00 | = | 2% |
| 1.50 | = | 3% |
| 2.00 | = | 4% |
| 2.50 | = | 5% |
| 3.00 | = | 6% |
| 3.50 | = | 7% |
| 4.00 | = | 8% |
| 4.50 | = | 9% |
| 5.00 | = | 10% |
| 5.50 | = | 11% |
| 6.00 | = | 12% |
| 6.50 | = | 13% |
| 7.00 | = | 14% |
| 7.50 | = | 15% |
| 8.00 | = | 16% |
| 8.50 | = | 17% |
| 9.00 | = | 18% |
| 9.50 | = | 19% |
| 10.00 | = | 20% |

25 lb. sample - each 1/4 lb. equals 1%

50 lb. sample - each 1/2 lb. equals 1%

Remember to round up or round down wherever necessary.

APPENDIX III: CERTIFICATE EXAMPLES

Example 1: FV-184 Notesheet

| INSPECTION STARTED: M M D D Y Y Hour Min. AP 0 4 2 3 1 2 0 8 : 3 0 A M | | | | | | | | | | U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT AND VEGETABLE DIVISION FEDERAL-STATE INSPECTION NOTESHEET | | | | | | | | | |
|---|---------------|------------------------|-----------------|----------|--------|-----------------------|------------------------|-----|---------|---|------|------|------------------------|------------|---------------------------|--------------|----------|-------------------|-------|
| INSPECTION COMPLETED: M M D D Y Y Hour Min. AP 0 4 2 3 1 2 0 9 : 3 0 A M | | | | | | | | | | APPLICANT: DUPERSUPER SPUD, INC. CITY STATE: RUPERT, ID P#: ID - 54 - 027 | | | | | | | | | |
| INSPECTION POINT: RUPERT, ID | | | | | | | | | | OTHER ID: PO 20456 | | | | | | | | | |
| CONVEYANCE NO.: TYPE: | | | | | | | | | | CERTIFICATE NO.: EXAMPLE # 1 | | | | | | | | | |
| PRODUCT/VARIETY, Number & Size of Container, Description of Product (Brand, Markings, Size, etc.) Grade Marked: LOT A: 500 CARTONS U.S. NO. 1 IDAHO'S BEST BRAND PACKED BY DUPERSUPER SPUD, INC. RUPERT, ID GROWN IN IDAHO 50 LBS. NET WT., STAMPED 90 SIZE RUSSET BURBANK LOT B: 500 PAPER BAGS U.S. NO 2 IDAHO'S STEADFAST BRAND PACKED BY DUPERSUPER SPUD, INC. RUPERT, ID GROWN IN IDAHO 50 LS. NET WT., MARKED LARGE | | | | | | | | | | | | | | | | | | | |
| SAMPLE SIZE (LBS) | DEFECTS | | | | | | | | | | SIZE | | ADDITIONAL INFORMATION | | | | | CWT: 100 | |
| | TOTAL DEFECTS | INCLUDING | | | | ADDITIONAL TOLERANCES | DESCRIPTION OF DEFECTS | | MIN. | MAX. | CUT | FIRM | WELL SHAPED | FAW SHAPED | CLEAN | FAIRLY CLEAN | FEE | OT | |
| | | RESTRICTIVE TOLERANCES | EXTERNAL | INTERNAL | 7 inch | | | | 12 inch | UNDERSIZE | | | | | | | OVERSIZE | EXPENSES | TOTAL |
| | | CONTAINER SER. DAMAGE | DECAY/ SOFT ROT | | | MOSTLY | OTHER | | | | | | | | | | | REMARKS | |
| A | | | | | | | | | | | | | | | | | | MEETS U.S. NO. 1 | |
| 20 | 1.25 | .5 | 0 | 1.3 | 0 | | CUT, SIS | 0 | 1 | 5 | √ | √ | | √ | | | | SIZE 90 | |
| 20 | .5 | 0 | 0 | 0.5 | 0 | | CUT | 0 | 0 | 5 | √ | √ | | √ | | | | | |
| 20 | 1 | 0 | 0 | 1 | 0 | | CUT | 0 | 0 | 5 | √ | √ | | √ | | | | | |
| 20 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 | 5 | √ | √ | | √ | | | | | |
| 20 | .5 | 0 | 0 | 0 | 0 | | GCK | 0 | 0 | 5 | √ | √ | | √ | | | | | |
| 100 | 3.25 | .5 | 0 | 3.25 | 0 | | | 0 | 1 | | | | | | | | | | |
| | | (3) | (1) | (X) | (3) | (X) | | (X) | (1) | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| B | | | | | | | | | | | | | | | | | | FAILS TO GRADE | |
| 50 | 8.5 | (17) | 0 | 8.5 | (17) | 0 | CUT, SDA DIS | 6 | (12) | 2½ | -4 | 5 | √ | √ | √ | | | U.S. NO. 2 LARGE | |
| 20 | 1.5 | (8) | 0 | 1.5 | (8) | 0 | GCK | 3 | (15) | 2¾ | 3½ | 5 | √ | √ | √ | | | ACCOUNT QUALITY | |
| 20 | .75 | (4) | 0 | .75 | (4) | 0 | CUT | 1.5 | (8) | 2½ | -4 | 5 | √ | √ | √ | | | AND UNDERSIZE | |
| 20 | 1.25 | (6) | 0 | 1.25 | (6) | 0 | CUT | 2.5 | (13) | 2½ | 3¾ | 5 | √ | √ | √ | | | | |
| 20 | 2.5 | (13) | 0 | 2.5 | (13) | 0 | CUT, GCK SDA | 1 | (5) | 2¾ | -4 | 5 | √ | √ | √ | | | | |
| 5 | | 48 | 0 | 48 | 0 | | | | 53 | | | | | | | | | | |
| | | (10) | (X) | (10) | (X) | | | | (11) | | | | | | | | | LOT B: MISBRANDED | |
| | | 4 | -17 | | | | | | 5 | -15 | | | | | | | | TO GRADE & SIZE. | |
| | | | | | | | | | | | | | | | | | | PACA CONTACTED | |
| | | | | | | | | | | | | | | | | | | 9:30 AM, 4/23/12. | |
| | | | | | | | | | | | | | | | | | | SPOKE WITH TIM. | |
| INSPECTOR'S SIGNATURE: I Am Inspector | | | | | | | | | | DATE: 4/23/2010 | | | | | PAGE 1 OF 1 | | | | |

FV-184-13 (2/94)

Example 1: FV-184 Certificate

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 FRUIT AND VEGETABLE DIVISION

EXAMPLE # 1

FEDERAL-STATE INSPECTION CERTIFICATE

SUBLOT

| INSPECTION STARTED: | | M M D D Y Y 0 4 2 3 1 2 | Hour Min. 0 8 : 3 0 | A/P A M | This certificate is issued pursuant to the Agricultural Marketing Act of 1946, as amended and is admissible as prima facie evidence in all courts of the United States. WARNING: Any person who knowingly shall falsely make, issue, alter, forge, or counterfeit this certificate, or participate in any such actions, is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both. |
|--|-------------------------------|--|---------------------------|---------------------|---|
| INSPECTION COMPLETED: | | M M D D Y Y 0 4 2 3 1 2 | Hour Min. 0 9 : 3 0 | A/P A M | |
| APPLICANT: DUPERSUPER SPUD, INC. | | | CITY/STATE: RUPERT, ID | | PLI: ID-54-027 |
| INSPECTION POINT: SAME | | | OTHER ID: | | PO 20456 |
| CONVEYANCE NO.: | | | TYPE: | | NOTESHEET NO.: 1 OF 1 |
| PRODUCT/VARIETY | *NUMBER AND SIZE OF CONTAINER | DESCRIPTION OF PRODUCT (Brand, Markings, Size, Quality/Condition, etc.) | | GRADE | |
| POTATOES RUSSET | 500 CARTONS | IDAHO'S BEST BRAND, U.S.NO.1, 90 SIZE, 50 LBS. NET WT. | | U.S. NO. 1 | SIZE 90 |
| POATOES WHITE | 500 BAGS | IDAHO'S STEADFAST BRAND, U.S. NO. 2, LARGE, 50 LBS. NET WT. | | FAILS U.S. NO. 2 | LARGE |
| | | 2-1/2 TO 4 INCHES IN DIAMETER, WITH 11% UNDER 3 INCHES IN DIAMETER. | | ACCOUNT AND UNDE | QUALITY RSIZE. |
| | | QUALITY DEFECTS AVERAGE 10% - CUTS, GROWTH CRACKS, SUNKEN DISCOLORED AREAS. | | | |
| ABOVE PRODUCTS MEET REQUIREMENTS OF MARKET ING ORDER | | | | | |
| *VARIETY OF PRODUCT AND NUMBER OF CONTAINERS ARE PROVIDED BY THE APPLICANT AND ARE NOT BEING CERTIFIED BY THE INSPECTOR UNLESS OTHERWISE NOTED | | | | | |
| FOR DATA ENTRY ONLY | | | | REMARKS: | |
| CORRECTS FV-184 CERTIFICATE NUMBER | | | | | |
| APPLICANT | | | | | |
| 21 | | | | | |
| CWT | ON-SITE HOURS | I, the undersigned, a duty authorized inspector of the United States Department of Agriculture, do hereby certify that samples of the herein described product were inspected and the grades as shown by said samples were as herein stated. | | FEE \$ | ESTIMATED TOTAL |
| 1 0 0 | 1 . 0 | | | O.T. (hrs) | |
| INSPECTED BY | TRAVEL MILES | | | EXP \$ | |
| 0 5 3 | | | | | |
| | O. T. (hrs) | <i>I Am Inspector</i> | | 4/23/2012 | |
| | OTHER | INSPECTOR'S SIGNATURE | | DATE ISSUED | |
| | | | | | |

FV-184 (10-93) (Previous versions may be used)

Example 2: FV-300 Notesheet (Front)

| | | | | | | | |
|--|---|--|---|---|----------------------|----------------------------------|--|
| <p>APPLICANT NUMBER 2 1</p> | <p>A: NUMBER: 018 GRADE: V A SIZE: R I UNIT: P</p> | <p>B: NUMBER: 013 GRADE: 0 2 SIZE: 0 P UNIT: P</p> | <p>C: NUMBER: [] GRADE: [] SIZE: [] UNIT: []</p> | <p>D: NUMBER: [] GRADE: [] SIZE: [] UNIT: []</p> | <p>DEFECT</p> | <p>REMARKS/CONTINUES:</p> | <p>ACTION FV-300 CERTIFICATE NUMBER</p> |
| <p>CARRIER or LOT IDENTIFICATION: I X B Z 8 5 0 4 5 2</p> <p>PREFIX NUMBER STATE</p> | | <p>LOADING: Loaded- LO Pty Unlded- PU UNLOADED- UL Lot Inspn - LI</p> <p>L O</p> | | <p>INSPECTION NOTESHEET U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT & VEGETABLE DIVISION</p> <p>CERTIFICATE NUMBER: EXAMPLE # 2</p> | | | |
| <p>Carrier or LOT IDENTIFICATION: INSPECTOR</p> | | | | <p>Inspection STARTED: m m d d y y Hour Min. A/P 0 4 0 6 1 0 0 6 : 3 5 A M</p> | | | |
| <p>Additional Lot ID: PO. 102828</p> | | | | <p>Inspection Completed: m m d d y y Hour Min. A/P 0 4 0 6 1 0 0 7 4 0 A M</p> | | | |
| <p>Carrier Type/ Name: MECH. REFRIG. TRAILER</p> | | | | <p>APPLICANT: POGO'S POTATOES, LLT</p> | | | |
| <p>Refrigeration Unit: <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF Doors: <input type="checkbox"/> OPEN <input checked="" type="checkbox"/> CLOSED</p> | | | | <p>Address: ANYWHERE, NY</p> | | | |
| <p>Condition of Carrier:</p> | | | | <p>SHIPPER: GREAT POTATO CORP.</p> | | | |
| <p>INSPECTION SITE: APPLICANT'S WAREHOUSE</p> | | | | <p>Address: SOMEWHERE, ID</p> | | | |
| <p>A: PRODUCT: POTATOES, RUSSET NUMBER OF CONTAINERS: 700 CARTONS TEMPERATURES: 40 TO 45°F</p> | | <p>BRANDS/MARKS: PAPAS BRAND SHIPPED BY GREAT POTATO CORP. SOMEWHERE, ID GROWN IN IDAHO NET WT. 50 LBS., MARKED U.S. NO 1 70, 80, OR 90 SIZE</p> | | | | | |
| <p>B: PRODUCT: POTATOES, RUSSET NUMBER OF CONTAINERS: 100 CARTONS TEMPERATURES: 40 TO 42°F</p> | | <p>PACKED IN FILM BAGS PRINTED GRANDMA'S BRAND U.S. NO. 1 GREAT POTATO CORP. SOMEWHERE, ID GROWN IN IDAHO NET WT. 5 LBS., PACKED IN CARTONS</p> | | | | | |
| <p>C: PRODUCT: [] NUMBER OF CONTAINERS: [] TEMPERATURES: []</p> | | <p>PRINTED GRANDMA'S BRAND 10-5 LB. BAGS</p> | | | | | |
| <p>D: PRODUCT: [] NUMBER OF CONTAINERS: [] TEMPERATURES: []</p> | | | | | | | |
| <p>Condition of Load & Containers: () STACKED ON PALLETS AT ABOVE LOCATION (X) INTACT THROUGH LOAD () PARTLY UNLOADED</p> | | | | | | | |
| <p>6 LAYERS HIGH, 2 TO 3 ROWS PER PALLET, 2 PALLETS WIDE, LENGTHWISE & CROSSWISE</p> | | | | | | | |


FORM FV- 300-N (3-93)

Example 2: FV-300 Notesheet (Back)

| A | | B | | C | | D | | | | | | | | | | | |
|--|------------|---|-------------|---|-----|------------------------|-----|--|------|-----|-----|------------|------|-------------|--------|-------|-----|
| Pack: WELL FILLED | | Pack: MEETS SIZE AS MARKED. OFFSIZE W/ TOLERANCE | | Pack: Size: 2 INCH MIN., OR 4 TO 10 OUNCES | | Pack: Size: | | | | | | | | | | | |
| Size: MEETS SIZE AS MARKED. OFFSIZE W/ TOLERANCE | | Size: 2 INCH MIN., OR 4 TO 10 OUNCES | | Size: Size: | | Size: Size: | | | | | | | | | | | |
| SCORESHEET | | | | OLD CUTS QUALITY | | SR | | SIS | | IES | | CUT SAMPLE | | SIZE OUNCES | | | |
| PLI Number | Other I.D. | TEMP. | Sample LBS. | D | SD | D | SD | D | SD | D | SD | | -8 | +13 | | | |
| (A) ID-454-10 | 80 | 41°F | 20 | 0 | 0 | 0 | 0 | 0 | 0 | .5 | (3) | 0 | 20 | 0 | 0 | | |
| ID-454-10 | 80 | | 20 | .75 | (4) | 0 | (4) | .75 | 0 | 0 | 0 | 0 | 5 | 0 | 2 (10) | | |
| ID-454-10 | 80 | 45 | 20 | 1 | (5) | 0 | 0 | .5 | (3) | 0 | 0 | 0 | 5 | 0 | 1 (5) | | |
| | | | | | | | | | | | | | | -7 | +12 | | |
| ID-454-10 | 90 | | 20 | 0 | 0 | 0 | .75 | (4) | 0 | .75 | (4) | 0 | 20 | 0 | 0 | 0 | |
| ID-454-10 | 90 | 42 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | | | -9 | +15 | | |
| ID-454-09 | 70 | 44°F | 50 | 1.75 | (4) | 0 | 0 | 4.5 | (9) | 1 | (2) | 0 | 5 | 0 | 2 (4) | | |
| ID-454-09 | 70 | 42 | 20 | 0 | 0 | 0 | 1 | (5) | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | |
| ID-454-09 | 70 | | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | (3) | .5 | 1 (5) | |
| | | | | | | | | | | | | | | 3 | .5 | 1 | (5) |
| | | | | 8 | 13 | 0 | 4 | 21 | 2 | 7 | 0 | | | 3 | 24 | | |
| | | | | (2) | (X) | | | (1/2) | | | (3) | (X) | (1) | (X) | (X) | (3) | |
| | | | | | | 0-4 | | | 0-9 | | | | | 2 IN | | | |
| | | | | | | E | | | | | | | OR | RANGE | | | |
| | | | | LBS. | | | | | | | | | | 4 OZ | OUNCES | | |
| (B) ID-454-11 | 10/5 | 42°F | 20 | .25 | 0 | .5 | 1 | 0 | 1 | 0 | 20 | 0 | 4-8 | | | | |
| ID-454-11 | 10/5 | 40 | 20 | 1 | 0 | .25 | 2.5 | 0 | 0 | 0 | 5 | 0 | 4-10 | | | | |
| ID-454-11 | 10/5 | 42 | 20 | .25 | 0 | .75 | .75 | 0 | 0 | 0 | 5 | 0 | 4-10 | | | | |
| | | | | 60 | 1.5 | 0 | 1.5 | 4.25 | 0 | 1 | 0 | | | | | | |
| | | | | (3) | (X) | | | (3) | (7) | (X) | (2) | (X) | (X) | | | | |
| | | | | | | 1-4 | | | 4-13 | | | | | | | | |
| | | | | | | E | | | | | | | | | | | |
| LOT A: U.S. NO. 1, 70, 80, OR 90 SIZE LOT B: FAILS TO GRADE U.S. NO. 1, 2 INCH OR 4 OUNCE MIN. ACCOUNT CONDITION. | | | | | | | | | | | | | | | | | |
| LOT B: SIZE BASED ON IDAHO MARKETING ORDER, AT APPLICANT'S REQUEST. | | | | | | | | | | | | | | | | | |
| REMARKS / RESTRICTIONS / SPI ABOVE LOTS INSPECTED DURING PROCESS OF UNLOADING. LOT B: IN MOST SAMPLES EXAMINED, SOME TO MANY POTATOES SHOW SPROUTS RANGING FROM BARELY VISIBLE TO 1/4 INCH IN LENGTH, NOT AFFECTING GRADE. | | | | | | | | | | | | | | | | | |
| CARLOT Basis: _____ HOURLY Basis: _____ TRAVEL Expenses: _____ EXPENSES: _____ EST. TOTAL: _____ | | | | REPORTED TO: SARAH DATE: 4/6/2010 TIME: 8:00 AM REQUESTED BY: SARAH DATE: 4/6/2010 TIME: 6:00 AM | | | | INSPECTED BY: <div style="text-align: center; font-size: 1.2em; font-weight: bold;">I Am Inspector</div> ASSISTED BY: _____ | | | | | | | | | |

*U.S. Government Printing Office: 1993--339-136

Example 2: FV-300 Certificate

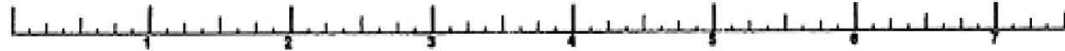
| | | | |
|--|--|--|--|
|  U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE | | INSPECTION CERTIFICATE EXAMPLE # 2 | |
| CARRIER OR LOT IDENTIFICATION I X B Z 8 5 0 4 5 2 1 1 0 PREFIX NUMBER STATE Additional Lot ID | | Applicant: POGO'S POTATOES, LLT Address: ANYWHERE, NY Shipper: GREAT POTATO CORP. Address: SOMEWHERE, ID Insp. Site: APPLICANT'S WAREHOUSE | |
| Carier/Lot ID Stated by: INSPECTOR PO 102828 Carrier Type / Name: MECH. REFRIG. TRAILER Refrigeration Unit: <input checked="" type="checkbox"/> On <input type="checkbox"/> Off <input type="checkbox"/> Open <input checked="" type="checkbox"/> Closed | | Lot ID: ID-454-10/454-09 Brand / Markings: "PAPAS BRAND" U.S. NO. 1 70, 80, OR 90 SIZE "GRANDMA'S BRAND" U.S. NO. 1 10/5 LB BAGS | |
| TEMPERATURES 40 to 45 °F 40 to 42 °F to to °F to to °F | | Number of Containers: 700 MASTER CARTONS 100 MASTER CARTONS | |
| AVERAGE DEFECTS including SER. DAM. (1-3) and (4-6) Damage including SER. DAM. (1-3) and (4-6) Damage | | OFFSIZE / DEFECTS | |
| A. 02 % 00 % 03 % 00 % 01 % 00 % 1/2 % 1/2 % 06 % 01 % 03 % 00 % 07 % 00 % 02 % 00 % 03 % 03 % 15 % 03 % % % % % % % % % % % % % | | LOT A: MEETS SIZE AS STAMPED. OFFSIZE WITHIN TOLERANCE. LOT B: 2 INCHES IN DIAMETER, OR 14 TO 10 OUNCES IN WEIGHT. NO OFFSIZE. LOT B: IN MOST SAMPLES EXAMINED, SOME TO MANY POTATOES SHOW SPROUTS RANGING FROM BARELY VISIBLE TO 1/4 INCH IN LENGTH, NOT AFFECTING GRADE. | |
| GRADE: LOT A: U.S. NO. 1, 70, 80, OR 90 SIZE. LOT B: FAILS TO GRADE U.S. NO. 1, 2 INCH OR 4 OUNCE MINIMUM, ACCOUNT CONDITION. | | OTHER | |
| REMARKS: ABOVE LOTS INSPECTED DURING PROCESS OF UNLOADING. LOT B: SIZE BASED ON IDAHO MARKETING ORDER, AT APPLICANT'S REQUEST. | | | |
| WARNING: Any person who knowingly shall falsely make, issue, alter, forge, or counterfeit this certificate, or participate in any such actions, is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both. | | Inspector's Signature: I Am Inspector Market Office: BRONX, NY | |
| FORM FV-300 (10/2017) Replaces FV-300 (11-2016) and FV-300 (1-2017) which are obsolete | | ESTIMATED TOTAL | |

Example 3: FV-300 Notesheet (Front)

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|------------|--|------------|--|-------------|-------------|----------|----------------|---|---|---|--|--|--|--|--|--|--|--|--------------|--|--|--|--|--|--|--|--|--|--|--|--|-----------|-------|------|-----|------|---|-----------|-------|------|-----|------|---|-----------|-------|------|-----|------|---|-----------|-------|------|-----|------|---|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">QUALITY & COND.</td> <td style="font-size: small;">FULL 3</td> <td style="font-size: small;">PARTIAL</td> <td style="font-size: small;">HOURS</td> <td style="font-size: small;">CONSID. HALF</td> <td style="font-size: small;">OT (hrs)</td> <td style="font-size: small;">COND. FULL</td> <td style="font-size: small;">MILES</td> <td style="font-size: small;">COND. HALF</td> <td style="font-size: small;">MILES</td> <td style="font-size: small;">COND. OTHER</td> <td style="font-size: small;">OT (hrs)</td> </tr> <tr> <td>INSPECTION BY:</td> <td>0</td> <td>5</td> <td>3</td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td>ASSIGNED BY:</td> <td colspan="11"></td> </tr> </table> <p style="text-align: center;">APPLICANT NUMBER 2 1</p> | QUALITY & COND. | FULL 3 | PARTIAL | HOURS | CONSID. HALF | OT (hrs) | COND. FULL | MILES | COND. HALF | MILES | COND. OTHER | OT (hrs) | INSPECTION BY: | 0 | 5 | 3 | | | | | | | | | ASSIGNED BY: | | | | | | | | | | | | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="font-size: x-small;">A: NUMBER</td> <td style="font-size: x-small;">0 1 5</td> <td style="font-size: x-small;">SIZE</td> <td style="font-size: x-small;">2 0</td> <td style="font-size: x-small;">UNIT</td> <td style="font-size: x-small;">P</td> </tr> <tr> <td style="font-size: x-small;">B: NUMBER</td> <td style="font-size: x-small;">0 1 3</td> <td style="font-size: x-small;">SIZE</td> <td style="font-size: x-small;">2 0</td> <td style="font-size: x-small;">UNIT</td> <td style="font-size: x-small;">P</td> </tr> <tr> <td style="font-size: x-small;">C: NUMBER</td> <td style="font-size: x-small;">0 1 3</td> <td style="font-size: x-small;">SIZE</td> <td style="font-size: x-small;">2 0</td> <td style="font-size: x-small;">UNIT</td> <td style="font-size: x-small;">P</td> </tr> <tr> <td style="font-size: x-small;">D: NUMBER</td> <td style="font-size: x-small;">0 1 3</td> <td style="font-size: x-small;">SIZE</td> <td style="font-size: x-small;">2 0</td> <td style="font-size: x-small;">UNIT</td> <td style="font-size: x-small;">P</td> </tr> </table> | A: NUMBER | 0 1 5 | SIZE | 2 0 | UNIT | P | B: NUMBER | 0 1 3 | SIZE | 2 0 | UNIT | P | C: NUMBER | 0 1 3 | SIZE | 2 0 | UNIT | P | D: NUMBER | 0 1 3 | SIZE | 2 0 | UNIT | P | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="font-size: x-small;">M</td> <td style="font-size: x-small;">D</td> <td style="font-size: x-small;">Y</td> <td style="font-size: x-small;">H</td> <td style="font-size: x-small;">M</td> <td style="font-size: x-small;">A</td> <td style="font-size: x-small;">M</td> </tr> <tr> <td>0</td> <td>4</td> <td>0</td> <td>7</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td style="font-size: x-small;">M</td> <td style="font-size: x-small;">D</td> <td style="font-size: x-small;">Y</td> <td style="font-size: x-small;">H</td> <td style="font-size: x-small;">M</td> <td style="font-size: x-small;">A</td> <td style="font-size: x-small;">M</td> </tr> <tr> <td>0</td> <td>4</td> <td>0</td> <td>7</td> <td>1</td> <td>0</td> <td>0</td> </tr> </table> | M | D | Y | H | M | A | M | 0 | 4 | 0 | 7 | 1 | 0 | 0 | M | D | Y | H | M | A | M | 0 | 4 | 0 | 7 | 1 | 0 | 0 |
| QUALITY & COND. | FULL 3 | PARTIAL | HOURS | CONSID. HALF | OT (hrs) | COND. FULL | MILES | COND. HALF | MILES | COND. OTHER | OT (hrs) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INSPECTION BY: | 0 | 5 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ASSIGNED BY: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A: NUMBER | 0 1 5 | SIZE | 2 0 | UNIT | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B: NUMBER | 0 1 3 | SIZE | 2 0 | UNIT | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C: NUMBER | 0 1 3 | SIZE | 2 0 | UNIT | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D: NUMBER | 0 1 3 | SIZE | 2 0 | UNIT | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | D | Y | H | M | A | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 4 | 0 | 7 | 1 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | D | Y | H | M | A | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 4 | 0 | 7 | 1 | 0 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"> CARRIER or LOT IDENTIFICATION: PREFIX: U P F E 5 4 0 4 5 0 NUMBER: 5 4 0 4 5 0 STATE: 0 </td> <td style="width:30%;"> LOADING: Loaded- LO Paly Unload- PU UNLOADED- UL Lot Inspn- LI </td> <td style="width:40%; text-align: center;"> INSPECTION NOTESHEET U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT & VEGETABLE DIVISION CERTIFICATE NUMBER: EXAMPLE # 3 </td> </tr> </table> | | | CARRIER or LOT IDENTIFICATION: PREFIX: U P F E 5 4 0 4 5 0 NUMBER: 5 4 0 4 5 0 STATE: 0 | LOADING: Loaded- LO Paly Unload- PU UNLOADED- UL Lot Inspn- LI | INSPECTION NOTESHEET U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT & VEGETABLE DIVISION CERTIFICATE NUMBER: EXAMPLE # 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CARRIER or LOT IDENTIFICATION: PREFIX: U P F E 5 4 0 4 5 0 NUMBER: 5 4 0 4 5 0 STATE: 0 | LOADING: Loaded- LO Paly Unload- PU UNLOADED- UL Lot Inspn- LI | INSPECTION NOTESHEET U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT & VEGETABLE DIVISION CERTIFICATE NUMBER: EXAMPLE # 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"> Carrier or LOT IDENTIFICATION: INSPECTOR Additional Lot ID: PO 50991 Carrier Type/ Name: MECH. REFRIG. RAILCAR Refrigeration Unit: <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF Doors: <input type="checkbox"/> OPEN <input checked="" type="checkbox"/> CLOSED Condition of Carrier: </td> <td style="width:50%;"> Inspection STARTED: m m d d y y Hour Min. A/P 0 4 0 7 1 0 0 7 : 0 0 A M Inspection Completed: m m d d y y Hour Min. A/P 0 4 0 7 1 0 0 9 : 3 0 A M APPLICANT: SUPER-MART, INC. Address: ANYWHERE, NJ SHIPPER: NORTHWEST POTATO CO. Address: SOMEWHERE, WA </td> </tr> </table> | | | Carrier or LOT IDENTIFICATION: INSPECTOR Additional Lot ID: PO 50991 Carrier Type/ Name: MECH. REFRIG. RAILCAR Refrigeration Unit: <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF Doors: <input type="checkbox"/> OPEN <input checked="" type="checkbox"/> CLOSED Condition of Carrier: | Inspection STARTED: m m d d y y Hour Min. A/P 0 4 0 7 1 0 0 7 : 0 0 A M Inspection Completed: m m d d y y Hour Min. A/P 0 4 0 7 1 0 0 9 : 3 0 A M APPLICANT: SUPER-MART, INC. Address: ANYWHERE, NJ SHIPPER: NORTHWEST POTATO CO. Address: SOMEWHERE, WA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Carrier or LOT IDENTIFICATION: INSPECTOR Additional Lot ID: PO 50991 Carrier Type/ Name: MECH. REFRIG. RAILCAR Refrigeration Unit: <input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF Doors: <input type="checkbox"/> OPEN <input checked="" type="checkbox"/> CLOSED Condition of Carrier: | Inspection STARTED: m m d d y y Hour Min. A/P 0 4 0 7 1 0 0 7 : 0 0 A M Inspection Completed: m m d d y y Hour Min. A/P 0 4 0 7 1 0 0 9 : 3 0 A M APPLICANT: SUPER-MART, INC. Address: ANYWHERE, NJ SHIPPER: NORTHWEST POTATO CO. Address: SOMEWHERE, WA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:40%;"> INSPECTION SITE: APPLICANT'S WAREHOUSE </td> <td style="width:60%;"> BRANDS/MARKS: PACKED IN FILM BAGS PRINTED BIG A U.S NO. 1 SHIPPED BY NORTHWEST POTATO CO., SOMEWHERE, WA PRODUCE OF U.S.A. 50 LBS. NET WT., PACKED IN CARTONS PRINTED BIG A 5 - 10 LB. BAGS SUPER-SIZE U.S. NO. 1 GROWN, PACKED AND SHIPPED BY NORTHWEST POTATO CO., SOMEWHERE, WA PRODUCE OF U.S.A. 50 LBS. NET WT., STAMPED 60 SIZE </td> </tr> </table> | | | INSPECTION SITE: APPLICANT'S WAREHOUSE | BRANDS/MARKS: PACKED IN FILM BAGS PRINTED BIG A U.S NO. 1 SHIPPED BY NORTHWEST POTATO CO., SOMEWHERE, WA PRODUCE OF U.S.A. 50 LBS. NET WT., PACKED IN CARTONS PRINTED BIG A 5 - 10 LB. BAGS SUPER-SIZE U.S. NO. 1 GROWN, PACKED AND SHIPPED BY NORTHWEST POTATO CO., SOMEWHERE, WA PRODUCE OF U.S.A. 50 LBS. NET WT., STAMPED 60 SIZE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INSPECTION SITE: APPLICANT'S WAREHOUSE | BRANDS/MARKS: PACKED IN FILM BAGS PRINTED BIG A U.S NO. 1 SHIPPED BY NORTHWEST POTATO CO., SOMEWHERE, WA PRODUCE OF U.S.A. 50 LBS. NET WT., PACKED IN CARTONS PRINTED BIG A 5 - 10 LB. BAGS SUPER-SIZE U.S. NO. 1 GROWN, PACKED AND SHIPPED BY NORTHWEST POTATO CO., SOMEWHERE, WA PRODUCE OF U.S.A. 50 LBS. NET WT., STAMPED 60 SIZE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:40%;"> A : PRODUCT: POTATOES, RUSSET NUMBER OF CONTAINERS: 2300 CARTONS TEMPERATURES: 39 TO 45°F INSPECTION COUNT: YES </td> <td style="width:60%;"></td> </tr> <tr> <td> B : PRODUCT: POTATOES, RUSSET NUMBER OF CONTAINERS: 100 CARTONS TEMPERATURES: 38 TO 43 INSPECTION COUNT: YES </td> <td></td> </tr> <tr> <td> C : PRODUCT: NUMBER OF CONTAINERS: TEMPERATURES: INSPECTION COUNT: </td> <td></td> </tr> <tr> <td> D : PRODUCT: NUMBER OF CONTAINERS: TEMPERATURES: INSPECTION COUNT: </td> <td></td> </tr> </table> | | | A : PRODUCT: POTATOES, RUSSET NUMBER OF CONTAINERS: 2300 CARTONS TEMPERATURES: 39 TO 45°F INSPECTION COUNT: YES | | B : PRODUCT: POTATOES, RUSSET NUMBER OF CONTAINERS: 100 CARTONS TEMPERATURES: 38 TO 43 INSPECTION COUNT: YES | | C : PRODUCT: NUMBER OF CONTAINERS: TEMPERATURES: INSPECTION COUNT: | | D : PRODUCT: NUMBER OF CONTAINERS: TEMPERATURES: INSPECTION COUNT: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A : PRODUCT: POTATOES, RUSSET NUMBER OF CONTAINERS: 2300 CARTONS TEMPERATURES: 39 TO 45°F INSPECTION COUNT: YES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B : PRODUCT: POTATOES, RUSSET NUMBER OF CONTAINERS: 100 CARTONS TEMPERATURES: 38 TO 43 INSPECTION COUNT: YES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C : PRODUCT: NUMBER OF CONTAINERS: TEMPERATURES: INSPECTION COUNT: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D : PRODUCT: NUMBER OF CONTAINERS: TEMPERATURES: INSPECTION COUNT: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Condition of Load & Containers: () STACKED ON PALLETS AT ABOVE LOCATION (X) INTACT THROUGH LOAD () PARTLY UNLOADED</p> <p>12 LAYERS HIGH, 5 TO 8 ROWS, LENGTHWISE & CROSSWISE</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

FORM FV- 300-N (3-93)

Example 3: FV-300 Notesheet (Back)



| A | | | | B | | | | C | | | | D | | | | |
|---|------------|-------|-------------|---|------|--------|-------------|--------------------|----------------------------|------|-----|-----------------------|-------------|--------------|---------------------|-----|
| Pack: _____ | | | | Pack: WELL FILLED | | | | Pack: _____ | | | | Pack: _____ | | | | |
| Size: SEE BELOW | | | | Size: MEETS SIZE AS STAMPED. OFF/S W/I TOL | | | | Size: _____ | | | | Size: _____ | | | | |
| SCORESHEET | | | | | | | | | | | | | | | | |
| PLI Number | Other I.D. | TEMP. | Sample LBS. | SCAB QUALITY | | SR | SDA | | SDA WITH U/L FLESH DISCOL. | | CUT | SIZE | | SIZE A (LBS) | UNDER 2 INCHES DIA. | |
| | | | | D | SD | | D | SD | D | SD | | IN -2 | OZ -4 | | | |
| (A) NONE | 5/10 | 41°F | 20 | .25 | 0 | 0 | 1 | 0 | 1 | 1 | | 5 | 2/ | 4-12 | 14.5 | 0 |
| " | " | 39 | 20 | .5 | 0 | 0 | .5 | .5 | 2 | 1 | | 5 | 2/ | 4-12 | 17 | 0 |
| " | " | | 20 | 0 | 0 | 0 | .5 | 0 | .75 | .75 | | 5 | 2/ | 4-10 | 13.5 | 0 |
| " | " | 40 | 20 | 0 | 0 | 0 | 2.25 | 1 | 1.5 | 0 | | 5 | 2/ | 4-10 | 40%+ | 0 |
| " | " | | 20 | .75 | .5 | 0 | 1 | 0 | 0 | 0 | | 5 | 1.75/ | 6-16 | ✓ | .5 |
| " | " | 42 | 20 | 0 | 0 | 0 | 1.75 | .75 | 0 | 0 | | 5 | 1.75/ | 4-10 | ✓ | 1 |
| " | " | | 20 | .75 | .75 | 0 | 0 | 0 | 2.5 | 1.25 | | 5 | 2/ | 4-12 | ✓ | 0 |
| " | " | | 20 | 0 | 0 | .25 | 1.25 | 0 | 3 | 2 | | 5 | 2/ | 4-14 | ✓ | 0 |
| " | " | 44 | 20 | .5 | 0 | 0 | 2 | .5 | 1 | 0 | | 5 | 2/ | 4-10 | ✓ | 0 |
| " | " | 45 | 20 | 1 | 0 | 0 | .5 | 0 | 0 | 0 | | 5 | 2/ | 6-14 | ✓ | 0 |
| " | " | | 20 | .25 | .25 | 0 | 1.5 | .75 | .5 | .5 | | 5 | 1.75/ | 4-12 | ✓ | .5 |
| " | " | 42 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 5 | 2/ | 4-12 | ✓ | 0 |
| " | " | | 20 | .5 | 0 | 0 | .5 | 0 | 2 | 2 | | 5 | 2/ | 4-10 | ✓ | 0 |
| " | " | | 20 | .5 | 0 | 0 | .25 | .25 | .5 | 0 | | 5 | 2/ | 4-10 | ✓ | 0 |
| NONE | 5/10 | 40 | 20 | 0 | 0 | 0 | 1 | 0 | 1.75 | .25 | | 5 | 2/ | 4-12 | ✓ | 0 |
| LOT A SIZE: 1-3/4 DIA OR 4 TO 16 OZ, WITH 40% OR MORE 2-1/2 IN DIA OR 6 OZ IN WT. UNDERSIZE WITHIN TOLERANCE. | | | 300 | 5 | 1.5 | .25 | 13 | 3.75 | 16.5 | 8.75 | | | | | | 2 |
| | | | | (2) | (X) | (-1/2) | (4) | (1) | (6) | (3) | | | | | | (1) |
| | | | | | | | E | 0-11 | | 0-15 | | | | | | |
| | | | | HOL WITH DISCOL. QUALITY | | SR | SKIN CHECKS | | | | | 5 | SIZE OUNCES | | | |
| | | | LBS. | D | SD | | D | SD | | | | | -10 | +16 | | |
| (B) NONE | 60 | 43°F | 20 | 3.25 | 0 | 0 | .75 | .75 | | | | 20 | 0.5 | 0 | | |
| NONE | 60 | 38 | 20 | 1 | (5) | 0 | 1.25 | .5 | | | | 20 | 0.5 | 0 | | |
| NONE | 60 | 41 | 20 | 4.5 | (23) | 1 | 0 | 0 | | | | 20 | 0 | 0 | | |
| | | | 60 | 8.75 | 1 | 0 | 2 | 1.25 | | | 60 | 1 | 0 | | | |
| | | | | (15) | (2) | (X) | (3) | (2) | | | | (2) | (X) | | | |
| | | | | 5-23 | | | | | | | | | | | | |
| LOT A: FAILS TO GRADE U.S. NO. 1 SIZE A 2 INCH MIN. DIA. ACCOUNT CONDITION. | | | | | | | | | | | | | | | | |
| LOT B: FAILS TO GRADE U.S. NO. 1 60 SIZE ACCOUNT QUALITY. | | | | | | | | | | | | | | | | |
| NOTE: KEVEN AT PACA CONTACTED AT 9:35 AM REGARDING MISBRANDING OF LOT E. | | | | | | | | | | | | | | | | |
| REMARKS / RESTRICTIONS / SPI LOT A: INSPECTION BASED ON SIZE A 2 INCH MIN. DIAMETER, AT APPLICANT'S REQUEST. ABOVE LOTS UNLOADED DURING PROCESS OF INSPECTION. | | | | | | | | | | | | | | | | |
| CARLOT Basis: _____ | | | | REPORTED TO: JOEL | | | | INSPECTED BY: | | | | <i>I Am Inspector</i> | | | | |
| HOURLY Basis: _____ | | | | DATE: 4/7/10 TIME: 9:50 AM | | | | ASSISTED BY: _____ | | | | | | | | |
| TRAVEL Expenses _____ | | | | REQUESTED BY: JOEL | | | | | | | | | | | | |
| EXPENSES _____ | | | | DATE: 4/7/10 TIME: 7:00 AM | | | | | | | | | | | | |
| EST. TOTAL: _____ | | | | | | | | | | | | | | | | |

*U.S. Government Printing Office: 1993 -339-136

Example 4: FV-300 Notesheet (Front)

| | | | | | |
|---|--|---|---|--|--|
| A: NUMBER: 010 SIZE: 20 UNIT: P GRADE: F N 1 ACCOUNT: C SELLER: M N 1 | B: NUMBER: 004 SIZE: 20 UNIT: P GRADE: M N 1 ACCOUNT: P SELLER: M N 1 | C: NUMBER: SIZE: UNIT: GRADE: ACCOUNT: SELLER: | D: NUMBER: SIZE: UNIT: GRADE: ACCOUNT: SELLER: | QUALITY & COND. FULL: 1 HALF: COND. HALF: FULL: CONID. HALF: FULL: LOT SRCHG: 011 O.T. (hrs): INSP BY: 053 OTHER: \$ Assesby: | ACTION: FV-300 CERTIFICATE NUMBER: REVERSES/CONTENTS: CONTINUES: |
| CARRIER or LOT IDENTIFICATION: PREFIX: P O 1 NUMBER: 0 5 0 2 1 STATE: Carrier or LOT IDENTIFICATION: APPLICANT | | | LOADING: Loaded-LO Ply Unload-PU UNLOADED-UL Lot Inspn-LI: U L | | |
| INSPECTION NOTESHEET U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT & VEGETABLE DIVISION | | | CERTIFICATE NUMBER: EXAMPLE # 4 | | |
| Inspection STARTED: m m d d y y Hour Min. A/P 0 4 2 1 1 0 0 7:00 A M | | | Inspection COMPLETED: m m d d y y Hour Min. A/P 0 4 2 1 1 0 0 8:10 A M | | |
| APPLICANT: PATTY'S POTATO PAD Address: ANYWHERE, PA | | | SHIPPER: SPUDMANIA, LLC Address: SOMEWHERE, ID | | |
| A : PRODUCT: POTATOES, MIXED NUMBER OF CONTAINERS: 1025 BAGS INSP. COUNT: YES TEMPERATURES: 44 TO 52°F | | | BRANDS/MARKS: IN FILM BAGS PRINTED PICNIC MIXED REDS/WHITES U.S.NO. 1 PACKED BY SPUDMANIA, LLC SOMEWHERE, ID GROWN IN IDAHO NET WT. 10 LBS. | | |
| B : PRODUCT: POTATOES, MIXED NUMBER OF CONTAINERS: 365 BAGS INSP. COUNT: YES TEMPERATURES: 39 TO 43°F | | | IN FILM BAGS PRINTED RED & WHITE U.S. NO. 1 PACKED BY SPUDMANIA, LLC SOMEWHERE, ID GROWN IN IDAHO NET WT. 5 LBS. | | |
| C : PRODUCT: NUMBER OF CONTAINERS: INSP. COUNT: TEMPERATURES: | | | () INTACT THROUGH LOAD () PARTLY UNLOADED | | |
| D : PRODUCT: NUMBER OF CONTAINERS: INSP. COUNT: TEMPERATURES: | | | () STACKED ON PALLETS AT ABOVE LOCATION | | |

FORM FV- 300-N (3-93)


Example 4: FV-300 Notesheet (Back)



| A | | | | B | | | | C | | | | D | | | |
|--|------------|-------|------------|---|-----|--------|-------|---|-------------------|---------------|-----------------------------|----------------------------|------------|----------------------|---|
| Pack: 1.75 TO 3.25 IN DIA. Size: MOSTLY 2.25 TO 2.75 U/SIZE WITHIN TOL | | | | Pack: 2 TO 3.25 IN DIA Size: MOSTLY 2.25 TO 2.75 | | | | Pack: _____ Size: _____ | | | | Pack: _____ Size: _____ | | | |
| SCORESHEET | | | | CUTS QUALITY | | | SPT D | CUT | RAISED ENLARGED D | DISCOLORED SD | BROWN SURFACE DISCOLORATION | | < 2 IN DIA | SIZE DIAMETER INCHES | |
| PLI Number | Other I.D. | TEMP. | Sample LBS | D | SD | SR | | | | | D | SD | | | D |
| (A) NONE | 10 LBS | 47°F | 20 | 0 | 0 | 0 | 1.25 | 5 | .5 | 0 | .25 | 0 | 0 | 2-3.25 | |
| " | " | 50 | 20 | 0 | 0 | 0 | 2.5 | 5 | .75 | .5 | .75 | 0 | .5 | 1.75-3 | |
| " | " | 52 | 20 | .5 | 0 | .5 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 2-3 | |
| " | " | | 20 | .75 | 0 | 0 | .75 | 5 | 0 | 0 | 1.5 | 1 | 0 | 2-2.75 | |
| " | " | 51 | 20 | 1 | 0 | 0 | 3.25 | 5 | 1 | .5 | 1.0 | .5 | 0 | 2-2.75 | |
| " | " | | 20 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 1.25 | 1 | 0 | 2-3 | |
| " | " | 44 | 20 | .25 | 0 | 0 | 0 | 5 | .5 | .5 | .5 | .5 | 1 | 1.75-2.5 | |
| " | " | | 20 | .5 | 0 | 0 | 1.5 | 5 | 0 | 0 | 0 | 0 | .5 | 1.75-3 | |
| " | " | | 20 | 0 | 0 | .25 | .5 | 5 | 0 | 0 | 0 | 0 | 0 | 2-2.75 | |
| NONE | 10 LBS | 46 | 20 | 1.25 | .5 | 0 | 0 | 5 | 1 | 0 | .5 | .5 | 0 | 2-3.25 | |
| | | | 200 | 4.25 | .5 | .75 | 13.75 | | 3.75 | 1.5 | 5.75 | 3 | 2 | | |
| | | | | (2) | (X) | (-1/2) | (7) | | (2) | (1) | (3) | (2) | (1) | | |
| | | | | | | E | 0-16 | | 0-20 | | 0-8 | | | | |
| LOT A: FNI | | | | | | | | | | | | | | | |
| LOT B: MNI | | | | | | | | | | | | | | | |
| LOTS A & B: MIXED ROUND RED & WHITE POTATOES | | | | | | | | | | | | | | | |
| (B) NONE | 5 LBS | 39°F | 20 | .5 | 0 | 0 | 0 | 5 | 0 | 0 | .5 | 0 | 0 | 2-3.25 | |
| " | " | 43 | 20 | 0 | 0 | 0 | 1.5 | 5 | 1 | .5 | 1 | .5 | 0 | 2-2.75 | |
| " | " | | 20 | 0 | 0 | 0 | 1 | 5 | 1.25 | .75 | 0 | 0 | 0 | 2-3 | |
| NONE | 5 LBS | 41 | 20 | .75 | 0 | 0 | 1.25 | 5 | 0 | 0 | .25 | .25 | 0 | 2-2.75 | |
| | | | 80 | 1 | 0 | 0 | 3.75 | | 2.25 | 1.25 | 1.75 | .75 | 0 | | |
| | | | | (1) | (X) | (X) | (5) | | (3) | (2) | (2) | (1) | (X) | | |
| LOT A: MOST SAMPLES SHOW MANY TO ALL POTATOES HAVING SPROUTS RANGING FROM BARELY VISIBLE TO 2 INCHES IN LENGTH. | | | | | | | | LOT B: MOST SAMPLES SHOW SOME TO MANY POTATOES HAVING SPROUTS RANGING FROM BARELY VISIBLE TO 2 INCHES IN LENGTH, WITH 5% OVER 1/2 INCH IN LENGTH, NOT AFFECTING GRADE. | | | | | | | |
| REMARKS / RESTRICTIONS / SPI LOT B: APPLICANT STATES PACKED FOR MIXED TYPE. | | | | | | | | | | | | | | | |
| EACH LOT: INSPECTION BASED ON 2 INCH MINIMUM DIAMETER AT APPLICANT'S REQUEST. | | | | | | | | | | | | | | | |
| CARLOT Basis: _____ | | | | REPORTED TO: MYRA | | | | INSPECTED BY: | | | | <i>I Am Inspector</i> | | | |
| HOURLY Basis: _____ | | | | DATE: 4/21/10 | | | | TIME: 6:00 AM | | | | | | | |
| TRAVEL Expenses: _____ | | | | REQUESTED BY: MYRA | | | | ASSISTED BY: _____ | | | | | | | |
| EXPENSES: _____ | | | | DATE: 4/21/10 | | | | TIME: 8:30 AM | | | | | | | |
| EST. TOTAL: _____ | | | | | | | | | | | | | | | |

*U.S. Government Printing Office: 1993-339-136

Example 4: FV-300 Certificate

| | | | | | | | | | | | | | | | |
|---|--|---|--|--|--|--|--|---|--|--|--|---|--|--|--|
|  U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE | | INSPECTION CERTIFICATE EXAMPLE # 4 | | | | | | | | | | | | | |
| CARRIER OR LOT IDENTIFICATION PREFIX: P J O 1 0 5 0 2 1 1 1 NUMBER: STATE: U L Additional Lot ID: | | | | Applicant: PATTY'S POTATO PAD Address: ANYWHERE, PA Shipper: SPUDMANIA, LLC Address: SOMEWHERE, ID | | | | Lot ID: 0 4 2 1 1 0 0 7 0 0 A M Number of Containers: 1025 BAGS Insp. count: Y | | | | OTHER | | | |
| Carrier / Lot ID Stated by: APPLICANT Carrier Type / Name: | | | | Product: POTATOES, MIXED Brand / Markings: "PICNIC" MIXED, U.S. NO. 1, 10 LBS. D "RED & WHITE" U.S. NO. 1, 5 LBS. D | | | | Origin: | | | | OFFSIZE / DEFECTS | | | |
| Refrigeration Unit: On <input type="checkbox"/> Off <input type="checkbox"/> Open <input type="checkbox"/> Closed <input type="checkbox"/> | | | | TEMPERATURES: A. 44 to 52 °F B. 39 to 43 °F C. to to °F D. to to °F | | | | GRADE: LOT A: FAILS TO GRADE U.S. NO. 1, 2 INCH MIN. DIAMETER ACCOUNT CONDITION (SPROUTS). LOT B: MEETS U.S. NO. 1, 2 INCH MIN. DIAMETER. | | | | REMARKS: LOT B: APPLICANT STATES PACKED FOR MIXED TYPE. EACH LOT: INSPECTION BASED ON 2 INCH MINIMUM AT APPLICANT'S REQUEST. | | | |
| AVERAGE DEFECTS including SER. DAM. U.S. Damage including SER. DAM. U.S. Damage | | | | QUALITY - CUTS SPROUTS (0 TO 16%) BROWN SURFACE DISCOLORATION (0 TO 8%) RAISED, ENLARGED, DISCOLORED LENTICELS SOFT ROT CHECKSUM | | | | LOT A: 1-3/4 TO 3-1/4 INCHES, MOSTLY 2-1/4 TO 2-3/4 INCHES IN DIAMETER. UNDERSIZE WITHIN TOLERANCE. LOT B: 2 TO 3-1/4 INCHES, MOSTLY 2-1/4 TO 2-3/4 INCHES IN DIAMETER. LOT A: MOST SAMPLES SHOW MANY TO ALL POTATOES HAVING SPROUTS RANGING FROM BARELY VISIBLE TO 2 INCHES IN LENGTH. | | | | ESTIMATED TOTAL | | | |
| WARNING: Any person who knowingly shall falsely make, issue, alter, forge, or counterfeit this certificate, or participate in any such actions, is subject to a fine of not more than \$4,000 or imprisonment for not more than one year, or both. | | | | Inspector's Signature: <i>J Am Inspector</i> | | | | Market Office: WASH/BALTIMORE | | | | FORM FV-300 (10-90) Replaces FV-303 (4-88) and FV-395 (1-90) which are obsolete. | | | |

Example 5: FV-300 FEIRS Certificate

| U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE http://FPBIinspections.ams.usda.gov | | INSPECTION CERTIFICATE T-000-0000-0000 | | |
|---|---|---|---------------------------------|---|
| | | PAGE 1 of 1 | | |
| CARRIER or LOT ID: PO 98765 | APPLICANT: BAYSHORES PRODUCE CO. | REQUESTED: 4/21/2010 6:00 AM | | |
| LOADING STATUS: UNLOADED | BALTIMORE, MD | STARTED: 4/21/2010 12:01 PM | | |
| STATED BY: APPLICANT | SHIPPER: BRICK RED POTATO CO. | COMPLETED: 4/21/2010 12:58 PM | | |
| ADDITIONAL ID: NA | GRANITE FALLS, MN | PASSWORD FOR ONLINE ACCESS | | |
| CARRIER TYPE: NA | MARKET OFFICE: BALTIMORE/WASHINGTON | EXAMPLE # 5 | | |
| REFRIG UNIT: NA | DOORS: NA | INSP SITE: APPLICANT'S WAREHOUSE | ESTIMATED FEE: NO CHARGE | |
| REMARKS: RESTRICTED TO UPPER 2 FEET OF TOTE CONTENTS. APPLICANT STATES 2 INCH MINIMUM DIAMETER. | | | | |
| LOT A (QAC) - POTATOES, ROUND RED | | | | |
| TEMP: 43° to 48°F | INSP CT: YES | NUMBER OF CONTAINERS: 20 BULK TOTE(S) (40000 LBS) | ORIGIN: MN | |
| MARKINGS: BRAND: NO BRAND VARIETY: ROUND RED MARKINGS: IN REUSABLE TOTES TAGGED US#1 2 IN. BRICK RED POTATO CO. GRANITE FALLS, MN PRODUCE OF USA | | | | |
| PLI: NONE | | OTHER ID: | | |
| INJURY | DAM | SER DAM | V.S. DAM | OFFSIZE/DEFECTS |
| NA | 4 | 0 | NA | QUALITY DEFECTS - EXTERNAL (0 to 5%)(GROWTH CRACKS, CUTS) |
| NA | 12 | 6 | NA | SUNKEN AND/OR PITTED DISCOLORED AREAS (4 to 21%) |
| NA | 8 | 1 | NA | SILVER SCURF (0 to 19%) |
| NA | <0.5 | <0.5 | NA | SOFT ROT (0 to 1%) |
| NA | 24 | 7 | NA | CHECKSUM |
| GRADE: | FAILS TO GRADE U.S. NO. 1, 2 INCH MINIMUM ACCOUNT CONDITION. | | | |
| LOT DESC: | DIAMETER: 1-3/4 TO 3-1/4, MOSTLY 2-1/4 TO 2-1/2 INCHES. MEETS SIZE AS TAGGED. UNDERSIZE WITHIN TOLERANCE. COLOR: RED STAGES OF DECAY: EARLY | | | |
| I, the undersigned, a duly authorized inspector of the United States Department of Agriculture, do hereby certify that at the request of the applicant and on the date indicated, samples of the herein described product were inspected and the quality and/or condition as shown by said samples were as herein stated. | | | | |
| Warning: Any person who knowingly shall falsely make, issue, alter, forge, or counterfeit this certificate or participate in any such actions, is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both. FORM FV-E300 (1.0.11.1) | | Signature: 0000 - INSPECTOR, I AM | Date: 4/21/2010 | |

Example 6: FV-300 FEIRS Certificate

| U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE http://FPBInspections.ams.usda.gov | | | | INSPECTION CERTIFICATE T-000-0000-00000 | |
|---|---------------|---|-----------------------------------|--|-----------------|
| PAGE 1 of 1 | | | | | |
| CARRIER or LOT ID: XYZ-526 ME | | APPLICANT: PRODUCE PRIDE CO., INC | | REQUESTED: 4/28/2010 6:00 AM | |
| LOADING STATUS: LOADED | | NORFOLK, VA | | STARTED: 4/28/2010 8:43 AM | |
| STATED BY: INSPECTOR | | SHIPPER: NORTH POTATO GROWERS | | COMPLETED: 4/28/2010 9:40 AM | |
| ADDITIONAL ID: PO 87450 | | PRESQUE ISLE, ME | | PASSWORD FOR ONLINE ACCESS | |
| CARRIER TYPE: MECHANICAL REFRIGERATED | | MARKET OFFICE: NORFOLK, VA | | EXAMPLE # 6 | |
| REFRIG UNIT: ON | DOORS: CLOSED | INSP SITE: APPLICANT'S WAREHOUSE | | ESTIMATED FEE: NO CHARGE | |
| REMARKS: RESTRICTED TO UPPER 1 TO 2 FEET OF LOAD. | | | | | |
| LOT A (QAC) - POTATOES, ROUND WHITE | | | | | |
| TEMP: 42° to 51°F | INSP CT: YES | NUMBER OF CONTAINERS: 1 BULK LOAD (38500 LBS) | | | ORIGIN: ME |
| MARKINGS: BRAND: NO BRAND MARKINGS: NONE | | | | | |
| PLI: NONE | | | OTHER ID: | | |
| INJURY | DAM | SER DAM | V.S. DAM | OFFSIZE/DEFECTS | |
| NA | 4 | 2 | NA | QUALITY DEFECTS - EXTERNAL (OLD BRUISES, CUTS) | |
| NA | 8 | 4 | NA | INTERNAL BLACK SPOT | |
| NA | 6 | 2 | NA | SUNKEN DISCOLORED AREAS WITH UNDERLYING FLESH DISCOLORED | |
| NA | 4 | 1 | NA | NET NECROSIS | |
| NA | 3 | 0 | NA | VASCULAR DISCOLORATION | |
| NA | 1 | 1 | NA | SOFT ROT | |
| NA | 26 | 10 | NA | CHECKSUM | |
| GRADE: FAILS TO GRADE U.S. NO. 1 ACCOUNT CONDITION. | | | | | |
| LOT DESC: DIAMETER: 1-3/4 TO 3, MOSTLY 2 TO 2-1/2 INCHES. UNDERSIZE WITHIN TOLERANCE. STAGES OF DECAY: MOSTLY ADVANCED, SOME EARLY | | | | | |
| I, the undersigned, a duly authorized inspector of the United States Department of Agriculture, do hereby certify that at the request of the applicant and on the date indicated, samples of the herein described product were inspected and the quality and/or condition as shown by said samples were as herein stated. | | | | | |
| Warning: Any person who knowingly shall falsely make, issue, alter, forge, or counterfeit this certificate or participate in any such actions, is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both. FORM FV-E300 (1.0.11.1) | | | Signature: 0000 - INSPECTOR, I AM | | Date: 4/28/2010 |

