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Marketing and
Regulatory
Programs

Agricultural
Marketing
Service

Fruit and
Vegetable
Program

Specialty
Crops
Inspection
Division

Canned Sweetpotatoes

Inspection Instructions

September 2014

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These instructions contain information and guidelines to help personnel of the U.S. Department of Agriculture's (USDA) Specialty Crops Inspection (SCI) Division uniformly apply and interpret U.S. grade standards, other similar specifications, and special procedures.

These guidelines do not supersede the Federal Food, Drug, and Cosmetic Act or any other applicable Federal or State laws or regulations. Compliance with these statutes is mandatory. This publication supersedes any previously issued inspection instructions.

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Inspection instructions are issued by USDA after careful consideration of all data and views submitted. The Department welcomes suggestions for improving the inspection instructions in future revisions.

Comments may be submitted to:

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INSPECTION INSTRUCTIONS FOR CANNED SWEETPOTATOES

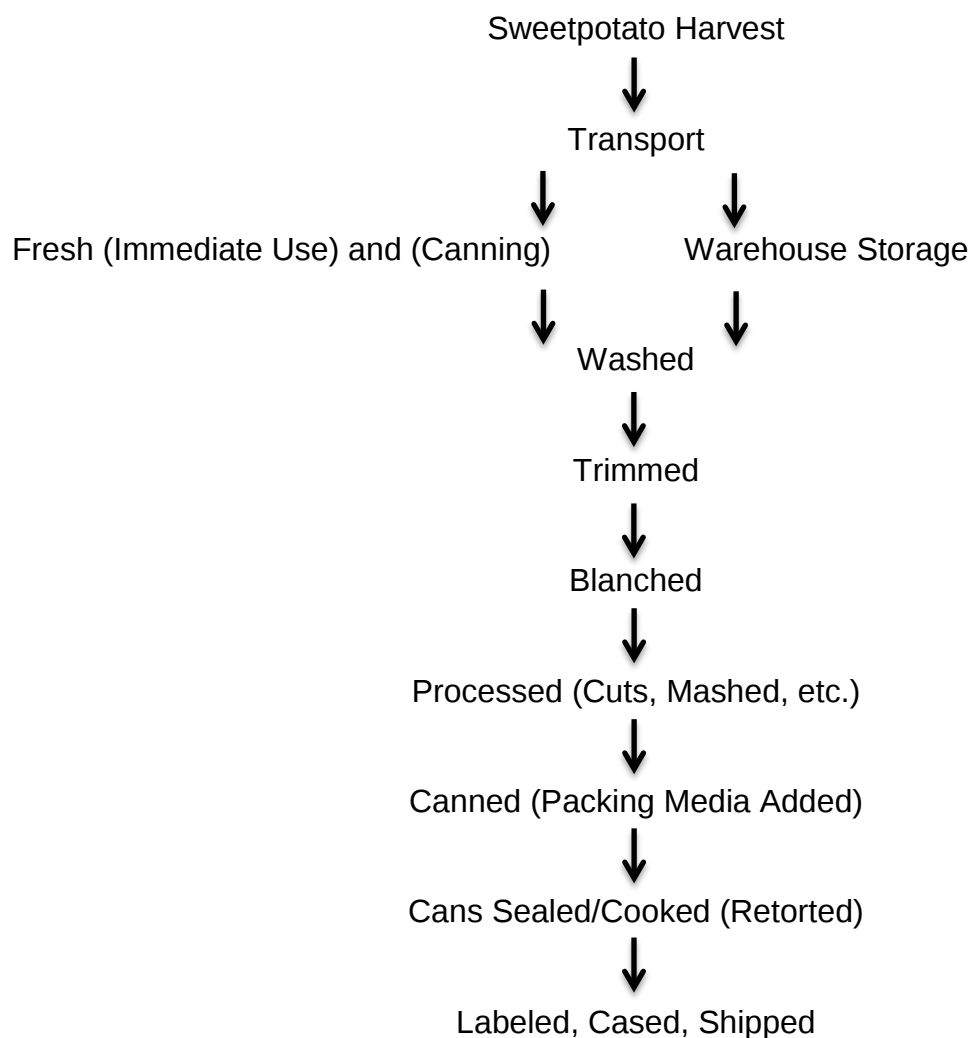
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DESCRIPTION OF PRODUCT

Canned sweetpotatoes is the product as defined in the [Standards of Identity for Certain Other Canned Vegetables \(21 CFR 155.200\)](#) issued under the Federal Food, Drug, and Cosmetic Act.

Sweetpotatoes are made from the tuber of the sweetpotato plant. Whole; mashed; pieces or cuts or cut (longitudinally cut halves may be named on labels as halves or halved in lieu of pieces or cuts or cut).

PRODUCTION FLOW



SAMPLING PROCEDURES

Follow the general procedures and instructions outlined in the [U.S. Standards for Grades of Canned Sweetpotatoes](#), and the Administration Inspection Management (AIM) Series as applicable:

- [General Procedures Manual](#)
- [Sampling Manual](#)
- [Condition of Food Container \(COC\) Manual](#)
- [Foreign Material Manual](#)
- [Technical Procedures Manual](#)
- [Score sheet FV-364-67E](#)
- [SCI Division internet site](#)

MEETING THE STYLE REQUIREMENTS

Canned sweetpotatoes are graded according to the styles in which they are offered. The inspector is responsible for assigning the appropriate style to each lot. Under good manufacturing practices, occasional different-shaped units may be permitted in a designated style such as: a piece or cut in whole style or a cut piece in halves style. A sample unit that contains several different-shaped units within a designated style is considered a **mixed style**.

Sweetpotato varieties have long tube-shaped roots of 6 or more inches. Commercial canners cut and trim the roots into uniform cylinder shaped units 2 inches or more in length. They may or may not taper on one or both ends. Canned sweetpotatoes that are cylindrical but not tapered on the ends are considered “whole” in Whole Style.

An “almost whole” sweetpotato unit should resemble a whole unit with one or both ends removed. Canned sweetpotatoes that are less than two inches in length and appear to be a portion of a sweetpotato are not considered “almost whole” in Whole Style.

Within whole style, 90 percent, by count, of the units in a container must be whole or almost whole; 10 percent or 1 unit, whichever is greater, may be pieces, cuts, halves, etc.

In halves style, 90 percent, by count, must be halves; 10 percent by count or 1 unit, whichever is greater, may be of a different shape(s). This procedure to determine style applies to all styles except whole and pieces, and mashed styles. The guide for determining whole and pieces is on the following pages.

All sample units must be of the same style for the lot to be considered that style; otherwise, the lot is certified to consist of different styles, e.g., 5 sample units Whole Style, or 1 sample unit Cut Style.

For a lot of officially drawn samples to be designated "whole and pieces":

1. The "whole" sweetpotatoes from all the containers average not less than 50 percent, by weight, of all the units, with the remainder in pieces;
2. One-half or more of the containers comprising the sample each contain not less than 50 percent, by weight, of units that are "whole"; and
3. None of the containers comprising the sample contain less than 25 percent, by weight, of units that are "whole."

[See attachment 1](#), Photos for determining whole and almost whole sweetpotatoes.

DRAINED WEIGHT

Although generally not a factor of quality, drained weight of processed fruit and vegetable products is an important marketing consideration. It indicates the amount of fruit or vegetable ingredient in relation to packing media, and sometimes the degree to which a product may have disintegrated during processing and handling. Additional instruction on performing drained weights is found in the [AIM Technical Procedures manual](#) and the [AIM General Procedures manual](#).

Use caution when transferring sweetpotato units from their primary container to the mesh screen. Gentle handling of units can result in a more precise drained weight and preserve the character of the sample unit.

CHIPS

Chips or pieces are defined as units of sweetpotato weighing 5.0 grams or less. Chips or pieces are only counted as units when grading character. When grading for uniformity of size and shape disregard all chips and pieces.

SLOUGHING

In some cases, sloughing may be an indicator of character problems. Sloughing can be caused by several conditions. When the sweetpotatoes are over-cooked, under-cooled, or overall soft (late season), sloughing indicates that character scores should be lowered. In the case of over-cooking or too slow cooling, the centers may be firmer than the outsides. In the case of late season sweetpotatoes, there will be a general softness to all of the potatoes, with enough very soft and mushy to downgrade or score it down. In some situations, most units may be of good character, with one or two mushy or crumbly units causing the sloughing. If there are one or two soft or crumbly

potatoes causing a slurry in an otherwise good character sample unit, the character score should be lowered only as indicated by the percentage of very soft, crumbly, mushy, or very firm sweetpotato units, including those making up the slurry. Downgrade the sweetpotatoes for sloughing only if the overall eating quality of the sweetpotatoes is affected, i.e., excessively firm inside or excessively soft outside.

MEETING THE VARIETAL COLOR TYPES

Canned sweetpotatoes are classified into three varietal color types; golden, yellow, or mixed. A sample unit of canned sweetpotatoes in which all the units are of the same varietal color type may be designated as golden or yellow. Up to five percent, by count, or one unit, whichever is greater, of yellow units may be in designated golden potatoes and vice versa.

A lot of canned sweetpotatoes in which all the sample units are not of the same varietal color type shall be designated in terms of the number of sample units and their type.

If color is added, such as for candied yams, it is considered as "No Applicable Grade" (NAG).

FLAVOR AND ODOR

When evaluating flavor and odor, consider the type of pack; the flavor characteristics for "regular pack" will be different from "vacuum pack" and "sirup pack" will be different from "water pack." Expect variation in flavor if a spice or garnish is included as an optional ingredient.

Sometimes a sweetpotato unit will taste "earthy." This taste is often the result of growing conditions and is affected by insufficient cooking. Any "earthy" tasting unit fails the requirements for "good flavor and odor." If the "earthy" unit is only slightly undesirable, consider it "reasonably good flavor." If it is objectionable, consider the sample unit Substandard (Sstd).

"Off-flavor" but still edible sample units are considered Substandard.

The SCI Division views Substandard flavor and odor in a sample unit representing a lot of canned sweetpotatoes as a serious concern. One sample unit with Substandard flavor that is part of 3, 6, or 13 sample units, will cause the lot as a whole to be graded Substandard. However, if the applicant makes a request, the grader may draw up to 21 additional sample units and apply the criteria in the AIM [Foreign Material Manual](#), Table II, (flavor is a non-scorable factor). Every effort should be made by the processor to provide acceptable flavor and odor in canned sweetpotatoes.

SCORING BLEMISHES

Blemished units are classified as an “insignificant blemish,” “materially blemished,” or “seriously blemished.” A slight imperfection, scar, or discoloration that is not readily noticeable is considered an “insignificant blemish.” However, a readily noticeable blemish either materially or seriously affects the appearance or edibility of the product must be scored accordingly. Pathological or insect injury that materially affects the appearance or edibility of the unit is scored as a “materially blemished unit.” Pathological or insect injury that seriously affects the appearance or edibility is scored as a “seriously blemished unit.” Insignificantly blemished units are not scorable unless they are so numerous, either singly or in conjunction with other defects, that the overall appearance is adversely affected.

Tough external fibrous ends (TEF), which include untrimmed fibrous ends (UFE), are graded under Defects. First, measure the length and determine if they are edible or inedible. Edible untrimmed fibrous ends less than 7 mm are considered insignificant unless they exceed 25 percent by count for Grade A or 50 percent by count in Grade B, or when considered along with other defects, materially detract from the appearance or edibility of the product (Grade B). Edible untrimmed fibrous ends 7 mm or longer are subjectively considered along with the other defects as practically free or reasonably free from defects. For inedible tough fibrous ends (TEF) of any length, not more than 15 percent are allowed per sample unit, and 5 percent per sample average, for Grade A.

The score for defects is determined by meeting the tolerances for individual defects and the defect's overall effect on the appearance or edibility. See [Table III](#) in the grade standards.

The percent of all defects must be averaged before the final score points for individual defects or the grade for the lot as a whole can be assigned (see [Table III](#) in the U.S. grade standards). The average score is the highest score that can be assigned to individual sample units. Individual sample units can be scored lower than the average based on defects found in the sample unit. This also applies to Character.

CHARACTER

Internal coarse fibers are graded under “Character.” First, determine if they are edible or inedible. Edible coarse fibers are not scorable. Tough, inedible internal fiber or inedible coarse fibers (TIF) are scorable. TIF must comprise less than 10 percent by count per sample unit or 5 percent per sample average (including crumbly, mushy, and very firm units) for Grade A.

Very soft, very firm, crumbly, and mushy units are considered under “Character”. If there are one or two soft or crumbly potatoes causing a slurry in an otherwise good character sample unit, the character score should be lowered only as indicated by the

percentage of very soft, crumbly, mushy, or very firm sweetpotato units, including those making up the slurry.

Sloughing is considered under “Character.” In some situations, most units may be of good character, with one or two mushy or crumbly units causing the sloughing. Downgrade the sweetpotatoes for sloughing only if the overall eating quality and appearance of the sweetpotatoes is affected, i.e., excessively firm inside or excessively soft outside.

Consider the effect of chips or pieces (units weighing 5 grams or less) on the appearance of the sample unit. Less than ten (10) percent by count of chips or pieces are considered insignificant when evaluating character. When chips or pieces exceed the 10 percent tolerance, by count, they are scorable under character in relation to their effect on the overall appearance of the sample unit.

The overall appearance should be downgraded to the next lower grade if the chips represent more than 30 percent by count of all units for Grade A, 50 percent by count for Grade B and 51 percent or more for Substandard.

SUGGESTED ORDER OF GRADING A SAMPLE UNIT – ALL STYLES EXCEPT MASHED

1. After the non-quality factors have been evaluated, evaluate and grade the sample unit(s) on a container-by-container basis. ([Also see Step 14.](#))
2. **Reassemble** any split or mechanically damaged units. Count each reassembled unit as a single unit.
3. **Evaluate** the color of the individual sweetpotato units. Ignore blemished areas for purposes of color evaluation. The vacuum pack may lack the luster that would be attributed to the liquid in regular pack.
 - a. **Good color** – the units are typically bright and characteristic of either the yellow or golden varietal type, except that 5 percent or 1 unit, whichever is greater, of yellow is allowed in golden and vice versa. There may be moderate variation within the units of a single color type. The units must be free of oxidation and greenness. Assign 27-30 points for A color.
 - b. **Reasonably good color** – the units may be slightly dull. Both golden and yellow varieties may be present, but not to the extent that the appearance is seriously affected. There may be slight oxidation and slight greenness present. Assign 24-26 points for B color.

- c. **Poor color** – the units may show signs of oxidation not typical of the product or a greenish cast to the extent that the appearance is seriously affected. Assign 0-23 points for Substandard color.

Some processors want to know the reason(s) for assigning specific score points to a quality factor. If this is the case, make a notation directly over the score points as in the example below. See [Standard Abbreviations](#) section for a listing of abbreviations. When abbreviations are used in this section, they must be shown on the score sheet.

FACTORS	SCORE POINTS				
COLOR	30	(A) 27-30 (B) 24-26 (Sstd) 0-23	V 28	29	28

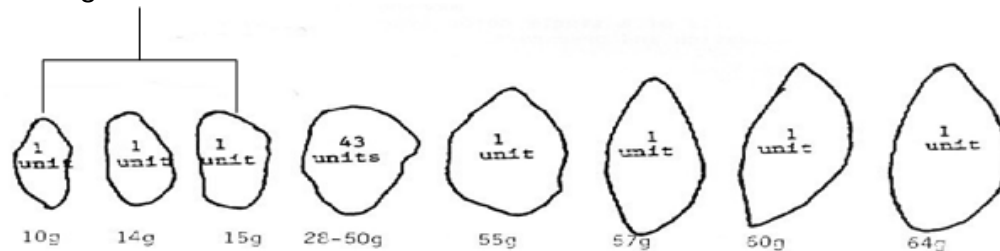
REMARKS V – Variation

4. **Arrange** all of the units, placing them in order of size from the largest to the smallest or vice versa.
5. **Evaluate** the canned sweetpotatoes for uniformity of size and assign score points using the following procedure.
 - a. Separate out the chips and pieces; do not score chips or pieces (defined as units of sweetpotato 5.0 grams or less) under uniformity of size. Score them later under Character ([see step 11](#)). Do not include the count of chips and pieces in the count for uniformity.
 - b. **Select** the 95 percent most uniform units by count that can be considered essentially whole. Since you have already arranged them as to size, you may segregate the 5 percent least uniform and set them aside. The 5 percent least uniform can be selected from either end of the size range or from both ends. In most situations, selecting 5 percent from the smaller end will provide the 95 percent most uniform units. Be sure to use the method that disregards the 5 percent least uniform units.
 - c. **Weigh** the largest and the smallest of the 95 percent most uniform units on a gram scale and divide the weight of the smallest unit into the weight of the largest unit to determine the ratio.

$$\frac{64.0 \text{ g}}{28.0 \text{ g}} = 2.3 \text{ to } 1$$

Example:

Disregard these:



d. **Refer** to the following chart to assign score points for uniformity of size:

Size ratio	Score points
1.0:1 thru 1.6:1	20
1.7:1 thru 2.3:1	19
2.4:1 thru 3.0:1	18
3.1:1 thru 3.5:1	17
3.6:1 thru 4.0:1	16
4.1:1 or more	0-15

Make a notation of the ratio directly over the score points for size, indicating the reason for the assigned score points.

UNIFORMITY OF SIZE OR CONSISTENCY	20	(A) 18-20 ² (B) 16-17 ³ (Sstd) 0-15	2.3 19	3.0 18	3.6 16
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² Can have reasonably uniform size if the total score is 90 points or more.

³ Can have poor uniform size if the total score is 80 points or more.

6. **Examine** the sample unit for extraneous vegetable material (EVM). Count the number of pieces of EVM. Refer to [Table III](#) in the standards for allowances in Grades A and B.
7. **Examine** all of the units for defects such as: total blemishes, including seriously blemished (SB), secondary rootlets (SR), untrimmed fibrous ends (UFE), tough external fibrous ends (TEF), mechanically damaged units (MDU), pitted units (PT), and peel (P).

Note the number of defective units on the score sheet as shown in step 9. Tough external fibrous ends (TEF), which include untrimmed fibrous ends (UFE), are graded under Defects. First, measure the length and determine if they are edible or inedible. TEF less than 7 mm are considered insignificant unless they exceed

25 percent by count for Grade A or 50 percent by count in Grade B, or when considered along with other defects, materially detract from the appearance or edibility of the product (Grade B). TEF 7 mm or longer are subjectively considered along with the other defects as practically free or reasonably free from defects. For TEF of any length, not more than 15 percent are allowed per sample unit, and 5 percent per sample average, for Grade A.

8. **Examine** the sample unit for traces of sand and grit, which affect the edibility of the product. No sand or grit is allowed in Grade A. A slight amount of sand or grit is allowed in Grade B, but not to the extent that it affects the edibility more than slightly. The best way to test for sand or grit is to taste any suspect units. Excessive or coarse sand is Class 3 foreign material. See AIM [Foreign Material Manual](#) for further sampling procedures and instructions.
9. **Compare** the number of defective units in each category with the allowances in [Table III](#) of the grade standard and assign a grade as follows. Average the percent of all Defects before assigning the score points. The average score is the highest score that can be assigned to individual sample units. Individual sample units can be scored lower than the average score points based on defects found in the sample unit. This also applies to Character. Insignificant imperfections are not scorable unless they are so numerous as to affect the overall appearance of the product.

Make a notation directly over the score points indicating the reason(s) for the assigned score points. When abbreviations are used in this section, they must be shown on the score sheet.

SB – Serious Blemish SR – Secondary Rootlet					
ABSENCE OF DEFECTS	30	(A) 27-30 (B) 24-26 (Sstd) 0-23	28	2SB 24	1SR 27

In this example, if there were 10 sweetpotato units, two seriously blemished (SB) units, which is the greater amount allowed in Grade B, and one unit with secondary rootlet (SR) are noted. See [“Charts for Assigning Grade B Score Points”](#) [“Defects – Max per Sample Unit”](#)

10. **Examine** the units for texture and tenderness (Character). Sloughing or a slurry in the packing media may be evidence of poor character.
11. **Count** the very soft, very firm, crumbly, and mushy units. Also, count chips or pieces and the units that have TIF. **Consider** the effect of chips or pieces on the appearance of the sample unit. Less than ten (10) percent by count of chips or

pieces are considered insignificant when evaluating character. When chips or pieces exceed the 10 percent tolerance by count, they are scorable under character in relation to their effect on the overall appearance of the sample unit.

The overall appearance should be downgraded to the next lower grade if the chips represent more than 30 percent by count of all units for Grade A, 50 percent by count for Grade B and 51 percent or more for Substandard.

NOTE: Sweetpotato units with TIF that form a stringy ball of fiber in your mouth are scored as TIF under Character. First, determine if they are edible or inedible. Edible coarse fibers are not scorable. TIF are scorable, not more than 10 percent by count per sample unit, 5 percent per sample average (including crumbly, mushy, and very firm units). See [Table III](#) in the grade standard.

12. **Compare** the number of defective units in each category to the allowances in [Table III](#) of the U.S. Standard and assign a grade as follows. Average the percent of all character defects before assigning the score points. The score point given for the lot is based on the average of all defects and is the maximum score that can be assigned for the Character category. Lower score points can be given for individual sample unit character defects.

Make a notation directly over the score points for character indicating the reason(s) for the assigned score points. When abbreviations are used in this section, they must be shown on the score sheet.

CR – Crumbly TIF – Tough Internal Fiber VS – Very Soft C – Chips					
CHARACTER	20	(A) 18-20 (B) 16-17 (Sstd) 0-15	1VS 3C 18	2CR 2TIF 16	19

In this example, one very soft unit (VS), three chips (C), two units with tough internal fiber (TIF), and two crumbly (CR) units are noted.

13. **Total** the score points for the quality factors. Before the final score points and the grade of a lot as a whole can be assigned, average the percent of all defects in [Table III](#) in the grade standard.
14. **Taste and smell** the sample unit for flavor and odor. Assign the grade for flavor and odor as well as the grade overall for the sample unit.

15. **Under In-plant Inspection**, you may draw line checks before the product reaches the cooker. If line checks are drawn, the recommended sample unit size is 1,000 grams. The line check can be drawn for determining uniformity of size and to evaluate defects.

Graders working in-plant should notify the plant management whenever an individual defect exceeds the allowance for the sample average for that defect since the lot as a whole may be assigned a lower grade. Graders should keep track of the defects found in each sample unit and compare the sample averages for individual defects with the tables in the [U.S. grade standards](#). This method also applies to grading Character.

The completed score sheet should resemble this example:

FACTORS		SCORE POINTS				
COLOR	30	(A) 27-30 (B) 24-26 ¹ (Sstd) 0-23 ¹	V 28	29	28	
UNIFORMITY OF SIZE ³ OR CONSISTENCY ⁴	20	(A) 18-20 (B) 16-17 ^{1,2} (Sstd) 0-15 ^{1,2}	2.3 19	3.0 18	3.6 16	
SB – Serious Blemish SR – Secondary Rootlet						
ABSENCE OF DEFECTS	30	(A) 27-30 (B) 24-26 ¹ (Sstd) 0-23 ¹	28	2SB 24	1SR 27	
CR – Crumbly TIF – Tough Internal Fiber VS – Very Soft C – Chips						
CHARACTER	20	(A) 18-20 (B) 16-17 ¹ (Sstd) 0-15 ¹	1VS 3C 18	2CR 2TIF 16	19	
TOTAL SCORE	100		93	87	90	
FLAVOR AND ODOR	A - "Good" B - "Reasonably Good" Sstd - "Off"		A	A	A	
U.S. GRADE			A	B	A	
REMARKS						
V – Variation						

¹ Limiting Rule ² Partial Limiting Rule ³ Regular and Vacuum Pack Only ⁴ Solid Pack Only

SUGGESTED ORDER OF GRADING A SAMPLE UNIT – MASHED STYLE (SOLID-PACK)

1. After the non-quality factors have been evaluated, evaluate and grade the sample unit(s) on a "container-by-container" basis.
2. **Invert** the opened container and set it on a large white shallow pan to examine consistency. Slowly lift the container away from the shallow pan. Have the timer set for 2 minutes. After 2 minutes, look at the separation of free liquid.
3. **Refer** to the following chart and examine the sample unit for dryness, firmness, flow characteristics, and separation of free liquid.

CONSISTENCY	
SUMMARY OF REQUIREMENTS	
Grade A:	Retains the approximate shape of the container and is not dry. May show slight settling and slight separation of free liquid. ¹
Grade B:	Soft and fails to retain the approximate shape of the container, but may not be free flowing. May show moderate separation of free liquid ¹ or noticeably firm but not very dry, hard, or rubbery.

¹ Consider the size of the container. Mass will influence the amount of free liquid.

4. **Assign** the score points for consistency of the sample unit.

Example:

UNIFORMITY OF SIZE OR CONSISTENCY	20	(A) 18-20 (B) 16-17 (Sstd) 0-15	18	19	19
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5. **Cut** a wedge (a cross section approximately one-fifth the size of the cylindrical shape from the center to the outer edge of the mass. Gently remove the wedge to examine internal color.
6. **Evaluate** the color of the sample unit mass. For Grade A, the color should be bright and typical of either varietal color type with no sign of greenness or oxidation. If the sample unit mass color exceeds moderate variation, or has slight oxidation or greenness, grade as Grade B.

Make a note over the color score if the sample is being downgraded (see [Standard Abbreviations](#) section). When abbreviations are used in this section, they must be shown on the score sheet.

Example:

FACTORS	SCORE POINTS				
COLOR	30	(A) 27-30 (B) 24-26 (Sstd) 0-23	28	29	OX G 25

REMARKS
OX – Oxidation G – Greenish Cast

7. **Examine** the sweetpotato mass for defects by taking a spatula or knife to cut into the mass. Look for dark specks. Subjectively assign score points for defects in the mass.

Make a notation directly over the points and show the abbreviation on the score sheet.

DKS – Dark Specks					
ABSENCE OF DEFECTS	30	(A) 27-30 (B) 24-26 ¹ (Sstd) 0-23 ¹	27	29	DKS 27

8. **Refer** to the definition for good character for solid-pack and [Table IV](#) in the U.S standards to determine character.
9. **Look** at the texture closely. Use the spatula or knife to spread the mass. Grade A product has a smooth texture that is free from tough or coarse fibers. Grade B may be slightly grainy with some tough or coarse fibers. Substandard fails Grade B.

10. Assign score points for Character on the scoresheet.

Example:

CHARACTER	20	(A) 18-20 (B) 16-17 ¹ (Sstd) 0-15 ¹			
			20	19	18

11. **Total** the score points for the quality factors.
12. **Taste and smell** the sample unit mass. Assign the grade for flavor and odor as well as the overall grade for the sample unit.

The completed scoresheet should resemble this example:

FACTORS		SCORE POINTS				
COLOR	30	(A) 27-30 (B) 24-26 ¹ (Sstd) 0-23 ¹				
UNIFORMITY OF SIZE ³ OR CONSISTENCY ⁴	20	(A) 18-20 (B) 16-17 ^{1,2} (Sstd) 0-15 ^{1,2}		18	19	19
DKS – Dark Specks						
ABSENCE OF DEFECTS	30	(A) 27-30 (B) 24-26 ¹ (Sstd) 0-23 ¹	27			
CHARACTER	20	(A) 18-20 (B) 16-17 ¹ (Sstd) 0-15 ¹	20			
TOTAL SCORE	100		93	96	89	
FLAVOR AND ODOR	A - "Good" B - "Reasonably Good" Sstd - "Off"			A	A	A
U.S. GRADE				A	A	B
REMARKS						
OX – Oxidation G – Greenish Cast						

¹ Limiting Rule ² Partial Limiting Rule ³ Regular and Vacuum Pack Only ⁴ Solid Pack Only

CHARTS FOR ASSIGNING GRADE A SCORE POINTS

DEFECTS – MAX PER SAMPLE UNIT

Flavor and Odor	Good		
Color	Good	27-30	
Uniformity of Size	Practically uniform	18-20	
Defects	Practically free do not materially affect the appearance or edibility	27-30	
Seriously blemished and Mechanical damage	5% by count or 1 unit (whichever is greater) Each counted separately	0% to 1.2%	=30 points
		1.3% to 2.5%	= 29 points
		2.6% to 3.7%	= 28 points
		3.8% to 5.0%	= 27 points
Total blemished (Materially & Seriously)	15% by count	0% to 3.7%	= 30 points
		3.8% to 7.4%	= 29 points
		7.5% to 11.1%	= 28 points
		11.2% to 15.0%	= 27 points
Units with secondary rootlets 2.5cm or longer	15% by count	0% to 3.7%	= 30 points
		3.8% to 7.5%	= 29 points
		7.6% to 11.2%	= 28 points
		11.3% to 15.0%	=27 points
Pitted Units	15% by count	0 % to 3.7%	= 30 points
Tough external fibers (TEF) (inedible)	15% by count	3.8% to 7.5%	= 29 points
		7.6% to 11.2%	= 28 points
		11.3% to 15.0%	= 27 points
Extraneous Vegetable Material	1 piece		
Peel per 500 grams	3.3 cm (.5 in)		
Units with untrimmed fibrous ends (edible)	Practically free		

Note: All percentages are by count.

DEFECTS – MAX LOT AVERAGE

Flavor and Odor	Good		
Color	Good	27-30	
Uniformity of Size	Practically uniform ²	18-20	
Defects	Practically free do not materially affect the appearance or edibility	27-30	
Seriously blemished or mechanically damaged	2% by count Each counted separately	0% to .5 %	= 30 points
		0.6% to 1.0%	= 29 points
		1.1% to 1.5%	= 28 points
		1.6% to 2.0%	= 27 points
Total blemished (Materially & Seriously)	8% by count	0% to 2.0%	= 30 points
		2.1% to 4.0%	= 29 points
		4.1% to 6.0%	= 28 points
		6.1% to 8.0%	= 27 points
Units with secondary rootlets 2.5cm or longer	5%by count	0% to 1.2%	= 30 points
		1.3% to 2.5%	= 29 points
		2.6% to 3.7%	= 28 points
		3.8% to 5.0%	= 27 points
Pitted Units	5% by count	0.0% to 1.2%	= 30 points
Tough external fibers (TEF) (inedible)	5% by count	1.3% to 2.5%	= 29 points
		2.6% to 3.7%	= 28 points
		3.8% to 5.0%	= 27 points
Extraneous Vegetable Material	1 piece per 3.4 kg (120 grams)		
Peel per 500 grams	2 cm ² (.3 in ²)		
Units with untrimmed fibrous ends (edible)	Practically free		

² Can have reasonably uniform size if total score is 90 points or more.

CHARACTER – MAX PER SAMPLE UNIT

Good	18-20
Very Soft 20% by count or 2 units (whichever is greater)	0% to 6.6% = 20 points
	6.7% to 13.3% = 19 points
	13.4% to 20% = 18 points
Very Firm, Crumbly, Mushy, Internal tough or coarse fibers 10% by count or 2 units (whichever is greater)	0% to 3.3% = 20 points
	3.4% to 6.6% = 19 points
	6.7% to 10% = 18 points
Chips – Overall appearance not affected by 10% to 30% of all units	0% to 10% = 20 points
	10.1% to 20% = 19 points
	20.1% to 30% = 18 points

CHARACTER – MAX LOT AVERAGE

Good	18-20
Very Soft 10% by count	0% to 3.3% = 20 points
	3.4% to 6.6% = 19 points
	6.7% to 10% = 18 points
Very Firm, Crumbly, Mushy, Tough Internal Fiber (TIF) (Combined) 5% by count	0% to 1.6% = 20 points
	1.7% to 3.4% = 19 points
	3.5% to 5% = 18 points
Chips – Overall appearance not affected by 10% to 30% by count	0% to 10% = 20 points
	11% to 20% = 19 points
	21% to 30% = 18 points

Uniformity of Size – All grades are covered by a partial limiting rule. No sample unit can receive a grade more than one grade above the grade given for Uniformity of Size.

Size ratio	Score points
1.0:1 thru 1.6:1	20
1.7:1 thru 2.3:1	19
2.4:1 thru 3.0:1	18
3.1:1 thru 3.5:1	17
3.6:1 thru 4.0:1	16
4.1:1 or more	0-15

CHARTS FOR ASSIGNING GRADE B SCORE POINTS

DEFECTS – MAX PER SAMPLE UNIT

Flavor and odor	Good	Reasonably Good ⁴
Color	Good	Reasonably Good ¹ 24-26
Uniformity of size	Practically uniform ³	Reasonably Uniform ³ 16-17
Defects	Reasonably free do not materially affect the appearance or edibility	24-26
Seriously blemished and Mechanically damaged	10% by count or 2 units (whichever is greater) Each counted separately	5.1% to 6.6% = 26 points
		6.7% to 8.3% = 25 points
		8.4% to 10.0% = 24 points
Total blemished (materially & seriously)		15.1% to 20.0% = 26 points
		20.1% to 25.0% = 25 points
		25.1% to 30.0% = 24 points
Units with secondary rootlets 2.5cm or longer	25% by count	15.1% to 18.4% = 26 points
		18.5% to 21.7% = 25 points
		21.8% to 25.0% = 24 points
Extraneous vegetable material (EVM)	2 pieces	
Peel per 500 grams	6.5 cm (1 in)	
Units with untrimmed fibrous ends (edible)	Reasonably free	

¹ Cannot be graded above U.S. Grade B, regardless of total score. Sample units with quality factor, except uniformity of size, which fail U.S. Grade B cannot be scored higher than Substandard regardless of the total score.

³ Can have poor uniformity of size if total score is 80 points or more.

⁴ Cannot be graded U.S. grade A, regardless of the total score, unless there is good flavor.

DEFECTS – MAX LOT AVERAGE

Flavor and odor	Good	Reasonably Good ⁴
Color	Good	Reasonably Good ¹ 24-26
Uniformity of size	Practically uniform ³	Reasonably Uniform ³ 16-17
Defects	Reasonably free do not materially affect the appearance or edibility	Reasonably free ¹ do not materially affect the appearance or edibility 24-26
Seriously blemished and mechanical damage	4% by count Each counted separately	2.1% to 2.6% = 26 points
		2.7% to 3.3% = 25 points
		3.4% to 4.0% = 24 points
Total blemished (materially & seriously)		8.1% to 10.3% = 26 points
		10.4% to 12.6% = 25 points
		12.7% to 15.0% = 24 points
Units with secondary rootlets 2.5cm or longer	10% by count Each counted separately	5.1% to 6.6% = 26 points
		6.7% to 8.3% = 25 points
		8.4% to 10.0% = 24 points
Pitted units	25% by count	5.1% to 11.7% = 26 points
		11.8% to 18.4% = 25 points
		18.5% to 25.0% = 24 points
Extraneous vegetable material (EVM)	2 pieces per 3.4kg (120 ounces)	
Peel per 500 grams	4 cm (.6 in)	
Units with untrimmed fibrous ends (edible)	Reasonably free	

¹ Cannot be graded above U.S. Grade B, regardless of total score. Sample units with quality factor, except uniformity of size, that fail U.S. Grade B cannot be scored higher than Substandard regardless of the total score.

³ Can have poor uniformity of size if total score is 80 points or more.

⁴ Cannot be graded U.S. grade A, regardless of the total score, unless there is good flavor.

Note: All percentages are by count of units countable over 5 grams.

CHARACTER – MAX PER SAMPLE UNIT

Reasonably Good ¹	16-17
Very Soft (VS) No limit	17 points
Very Firm (VF), Crumbly (CR), Mushy (M), Tough Internal Fiber (TIF) 20% by count or 4 units (whichever is greater)	10.1% to 15.0% = 17 points 15.1% to 20.0% = 16 points
Chips	Over 30% by count = 17 points Over 50% by count = 15 points

CHARACTER – MAX LOT AVERAGE

Reasonably Good ¹	16-17
Very Soft (VS) No limit	17 points
Very Firm (VF), Crumbly (CR), Mushy (M), Tough Internal Fiber (TIF) 10% by count	5.1% to 7.5% =17 points 7.6% to 10.0% =16 points
Chips	Over 30% by count = 17 points Over 50% by count = 15 points

¹ Cannot be graded above U.S. Grade B regardless of total score. Samples units with quality factors, expect uniformity of size, those that fail U.S. Grade B cannot be scored higher than Substandard regardless of total score.

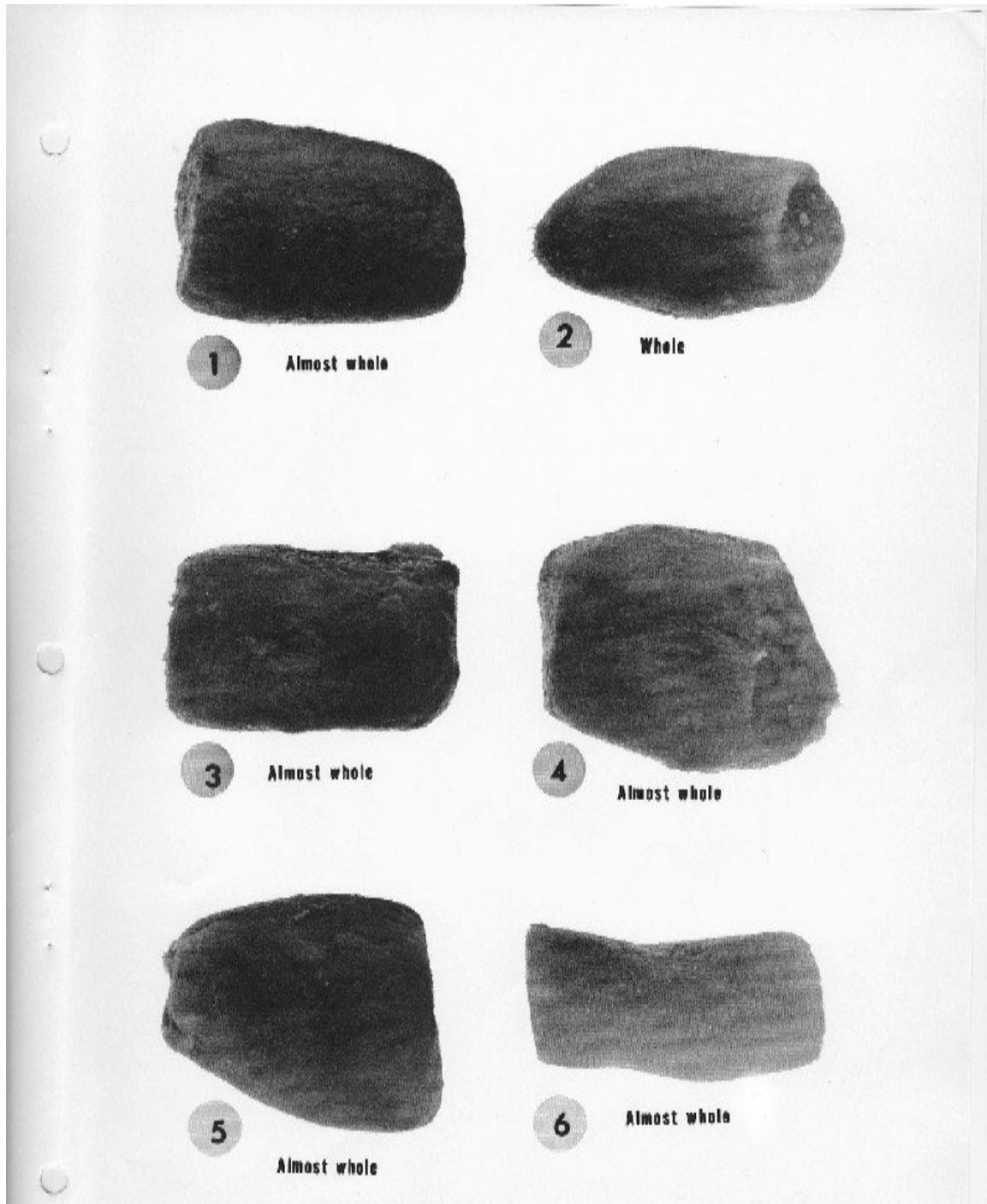
NOTE: Sample units may not be given higher score points than average scores indicate, regardless of individual sample scores.

Uniformity of Size – All Grades are covered by a partial limiting rule. No sample unit can receive a grade more than one grade above the grade given for Uniformity of Size.

Size ratio	Score points
1.0:1 thru 1.6:1	20
1.7:1 thru 2.3:1	19
2.4:1 thru 3.0:1	18
3.1:1 thru 3.5:1	17
3.6:1 thru 4.0:1	16
4.1:1 or more	0-15

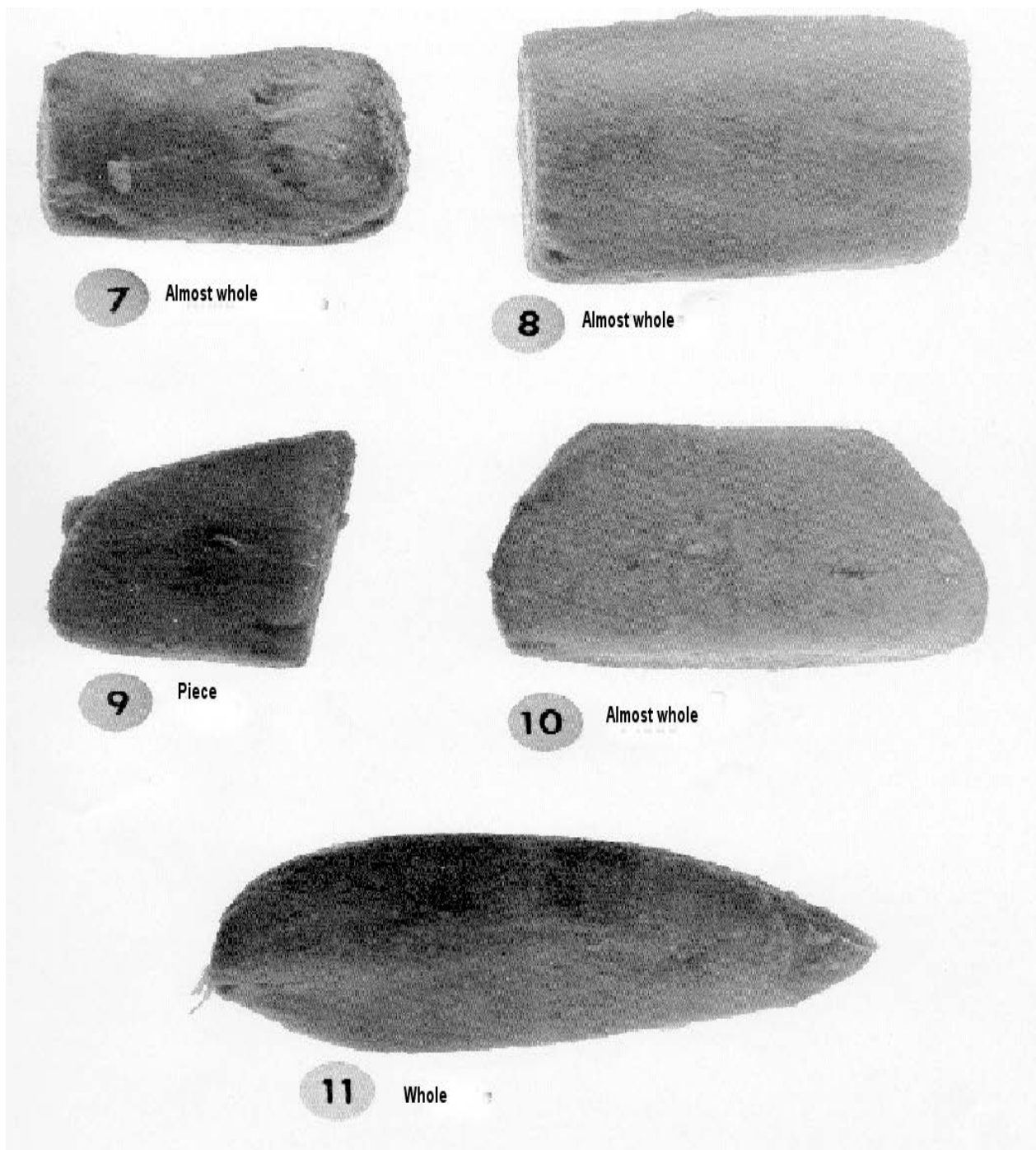
APPENDIX I – PHOTOS

DETERMINING WHOLE AND ALMOST WHOLE SWEETPOTATOES

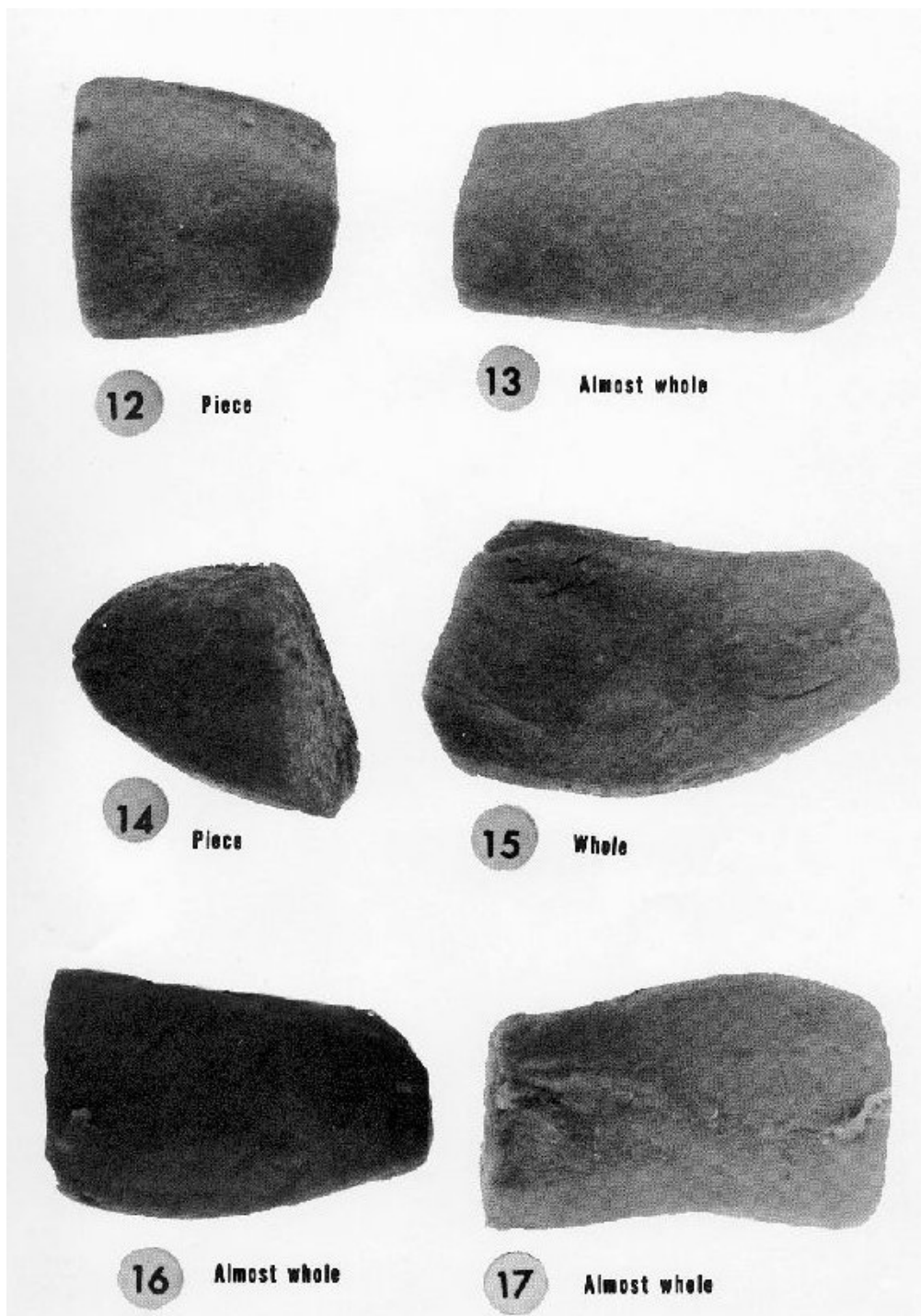


1, 3, 4, 5, 6. Almost whole
2. Whole

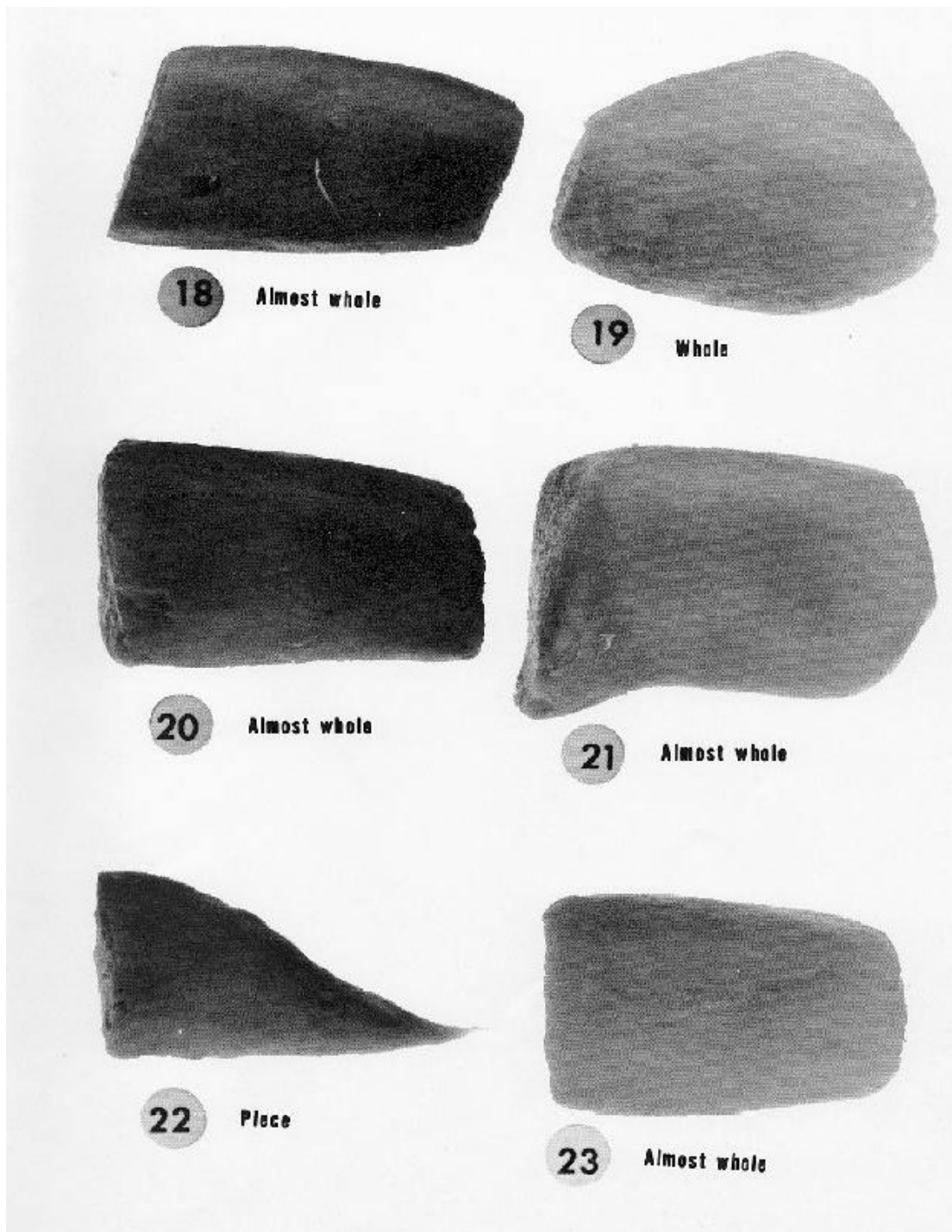
Inspection Instructions for Canned Sweetpotatoes (September 2014)



- 7. Almost whole
- 8. Piece (approaching almost whole)
- 9, 10. Piece
- 11. Whole



- 12. Piece
- 13, 16, 17. Almost whole
- 14. Piece (approaching almost whole)
- 15. Whole



- 18, 20, 23. Almost whole
19. Whole
21. Almost whole (approaching piece)
22. Piece



24. Whole

APPENDIX II – STANDARD ABBREVIATIONS FOR SCORE SHEETS

CHARACTER	
C	Chips
CR	Crumbly
M	Mushy
SL	Packing Liquid is a Slurry
TIF	Tough Internal Fiber
VF	Very Firm
VS	Very Soft
COLOR	
D	Dull
G	Greenish cast
OX	Oxidation
V	Variation
W	White potato
Y	Yellow Potato
DEFECTS	
B	Blemished
DKS	Dark Specks
EVM	Extraneous Vegetable Material
HPM	Harmless Plant Material
II	Insect Injury
MDU	Mechanically Damaged Unit
P	Peel
PI	Pathological Injury
PT	Pitted
SB	Serious Blemish
SG	Sand or Grit
SLG	Sloughing
SR	Secondary Rootlet
TEF	Tough External Fibers or Inedible Untrimmed Fibrous Ends
UFE	Edible Untrimmed Fibrous Ends

The abbreviation by itself would represent one sweetpotato unit in a sample unit; if there is more than one, the abbreviation would be preceded by a number of units affected. (Ex. 3 crumbly units - 3CR).

SIZE

First (Prime number of ratio to nearest tenth example: 4.7 = 4.7: 1 [eliminate to one (:1)])