



United States
Department of
Agriculture

Peaches

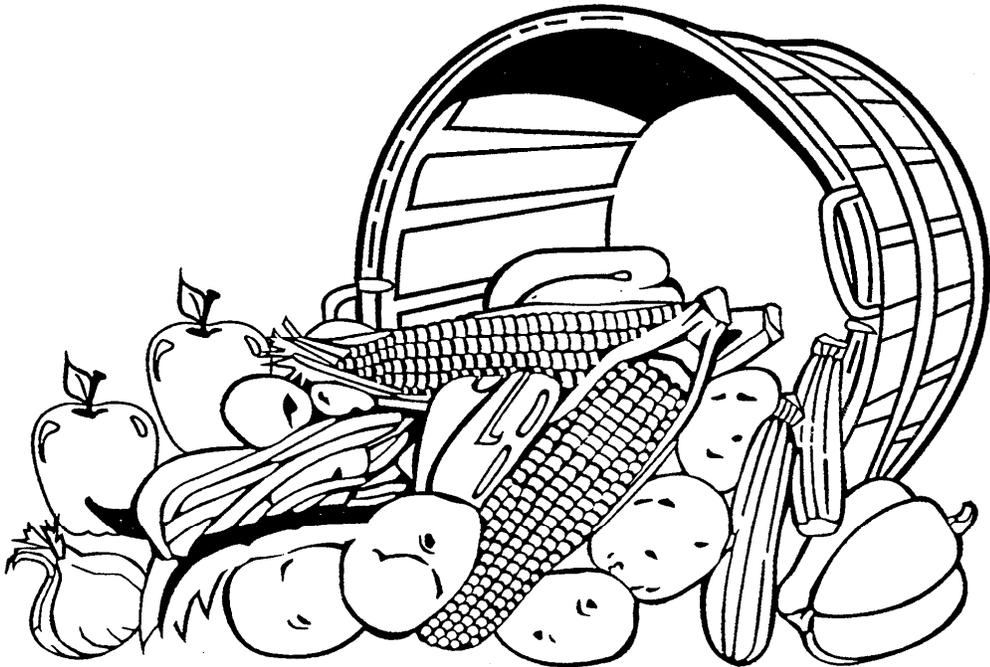
Agricultural
Marketing
Service

Shipping Point and Market Inspection Instructions

Fruit and
Vegetable
Programs

Fresh
Products
Branch

May 2004



Shipping Point and Market Inspection Instructions for Peaches

These inspection instructions are specifically developed by the Fresh Products Branch to assist officially licensed inspectors in the interpretation and application of the U.S. Standards for Grades of Peaches, Section 51.1210.

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 the General Inspection Instructions for additional information pertaining to date, inspection point, carrier, condition of carrier, lading, etc. that is not covered in this handbook. Reference to "General Inspection Instructions" in all Fresh Products Branch publications refers to any one 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 the section number §51.--- and followed by **bold** print are sections or portions of sections copied directly from U.S. standards. The U.S. Standards for Grades of Peaches are printed in the appendix of this handbook. All U.S. standards are available on the Internet under the USDA homepage.

May 2004

This publication may be duplicated without authorization from USDA.

This replaces Shipping Point Inspection Instructions dated June 1969 and Market Inspection Instructions dated April 1970.

Factors noted with **(Q)** are considered quality only. Factors noted with **(C)** are considered condition at market. Factors noted with **(Q or C)** may be quality or condition depending on the circumstances. Factors not designated do not pertain to either category.

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GENERAL

Peaches are shipped in carload quantities from over half of the states of the country. The main shipments are made during the months of June, July, August and September, July and August being the peak shipping months.

Flat type peaches commonly referred to as “doughnut” or “bagel” peaches may be certified under the U.S. Standards for Grades of Peaches.

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 Sample

The tolerances in the U.S. Standards for Grades of Peaches are determined on the basis of count.

§51.1214 Tolerances. In order to allow for variations incident to proper grading and handling in each of the following grades, the following tolerances, by count, based on a minimum 50-count sample, except when packages contain less than 50 fruit, a minimum 25-count sample shall be examined, (when packages contain less than 25 fruit adjoining packages shall be opened to obtain the 25-count minimum sample).

SHIPPING POINT

In-line Certification.

The minimum sample size for grades of peaches is 50 fruit for containers with 50 or more fruit. For containers with less than 50 fruit, a minimum of 25 fruit must be examined. If containers have less than 25 fruit, a 25 fruit sample must be examined. Therefore, the additional fruit to make up the 25 fruit minimum sample must be obtained from another container. The U.S. standard states, “When packages contain less than 25 fruit, adjoining packages shall be opened to obtain the 25-count minimum sample.” For in-line sampling, the next container of the same type and size fruit shall be

considered the “adjoining packages.” For example, a 20-count pack is not to be combined with a 48-count pack. The next 20-count pack is to be used.

Stationary Lots

The minimum sample size for grades of peaches is 50 fruit for containers with 50 or more fruit. For containers with less than 50 fruit, a minimum of 25 fruit must be examined. If containers have less than 25 fruit, a 25 fruit sample must be examined. Therefore, the additional fruit to make up the 25 fruit minimum sample must be obtained from adjoining packages. Whenever defects exceed the container or lot tolerances in one or more samples, the entire contents of at least one of those packages must be examined.

MARKET

The minimum sample size for grades of peaches is 50 fruit for containers with 50 or more fruit. For containers with less than 50 fruit, a minimum of 25 fruit must be examined. If containers have less than 25 fruit, a 25 fruit sample must be examined. Therefore, the additional fruit to make up the 25 fruit minimum sample must be obtained from adjoining packages. Whenever defects exceed the container or lot tolerances in one or more samples, the entire contents of at least one of those packages must be examined.

Number of Samples

As a general rule a minimum of 1% of the lot must be examined. For lots of less than 300 packages a minimum of 3 samples must be examined. It is the inspector’s responsibility to examine additional representative samples when the quality, condition, or size in samples is decidedly different to ensure an accurate description of the lot.

Sampling for Internal Defects

During examination for external defects it may be difficult for inspectors to detect the presence of internal defects. Some fruit must be cut from every sample. The number of specimens cut is discretionary and based on such factors as varietal characteristics (some varieties are more susceptible to internal discoloration than others), growing conditions, time of year, ripeness of fruit and any external characteristics of *possible* internal defects. The following policy does not apply to shattered pits.

**** *When there are external indications of possible internal defects* (i.e. riper fruit may have internal discoloration), the percentage of internal defects is based upon the entire sample examined. It is not based upon the number of fruit cut. For example, if an inspector examines a 50-count sample of peaches, and after cutting 10 suspicious specimens finds 1 with an internal defect, the percentage of internal defects is 2% (1 defective fruit out of the entire sample, 50 fruit in this case).

When it is known or suspected that internal defects are present, but there are no external indications of possible internal defects a random sample shall be used to determine percentages. Select and cut 10 fruit free from external defects from each sample. When any cut sample exceeds the container tolerance the sample should be doubled to 20 fruit. At least one entire container or 100 count should be cut to determine if the application of tolerances have been exceeded. If the lot fails to meet container tolerances after an entire container (or 100 count) has been cut, revert back to the above-mentioned plan of cutting 10 fruit free from external defects. The percentages shall be based on the cut sample and not on the total grade sample. Each cut sample must be recorded so that a range and an average may be reported. A mixing of samples, commonly called a composite sample, is not allowed. This is because of the limitation of individual container tolerances in the standard. If this sampling plan is used, remember to note on the certificate the fact that percentages of internal defects were based upon cut samples.

TOLERANCES AND APPLICATION OF TOLERANCES

§51.1214 Tolerances. (a) U.S. Fancy, U.S. Extra No. 1, and U.S. No. 1 grades. (1) For defects at shipping point. 10 percent of the peaches in any lot may fail to meet the requirements of the specified grade: *Provided*, That included in this amount 5 percent, shall be allowed for defects causing serious damage, including in this latter amount not more than 1 percent for peaches which are affected by decay.

(2) For defects en route or at destination. 14 percent for peaches in any lot that fail to meet the requirements of the grade: *Provided*, That included in this amount not more than the following percentages shall be allowed for defects listed:

(i) 10 percent for permanent defects;

(ii) 7 percent for defects causing serious damage, included therein not more than 5 percent for serious damage by permanent defects and not more than 2 percent for decayed peaches.

(b) U.S. No. 2 grade. (1) For defects at shipping point. 10 percent of the peaches in any lot may fail to meet the requirements of this grade: *Provided*, That included in this amount not more than 1 percent for peaches which are affected by decay.

(2) For defects en route or at destination. 14 percent for peaches in any lot that fail to meet the requirements of the grade: *Provided*, That included in this amount not more than the following percentages shall be allowed for defects listed:

- (i) 10 percent for permanent defects;
- (ii) 2 percent for peaches which are affected by decay.

Summary of Tolerances

Shipping Point

	U.S. Fancy, U.S. Extra No. 1, and U.S. No. 1.
Total Defects	10%
<i>Including serious damage</i>	5%
<i>including decay</i>	1%
	U.S. No. 2
Total Defects	10%
<i>Including decay</i>	1%

En Route or at Destination

**U.S. Fancy, U.S. Extra No. 1,
and U.S. No. 1.**

Total Defects	14%
<i>Including permanent defects</i>	10%
<i>Including serious damage</i>	7%
<i>including serious damage by permanent defects</i>	5%
<i>including decay</i>	2%

U.S. No. 2

Total Defects	14%
<i>Including permanent defects</i>	10%
<i>Including decay</i>	2%

Color

§51.1214 Tolerances. (3) For color. (i) U.S. Fancy grade. 10 percent for peaches in any lot which fail to meet the requirements of the grade.

(ii) U.S. Extra No. 1 grade. Individual packages may contain not less than 40 percent of peaches which meet the requirements of the grade: *Provided*, That the entire lot averages not less than 50 percent.

U.S. Fancy

Color	10%
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U.S. Extra No. 1

Color (individual packages)	40%
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Provided the entire lot averages not less than 50%

Size

§51.1216 *Size requirements.* (d) In order to allow for variations incident to proper sizing, not more than 10 percent, by count, of peaches in any lot may be below the specified minimum size and not more than 15 percent may be above any specified maximum size.

<i>Specified</i> minimum size	10%
<i>Specified</i> maximum size	15%

Size is **not** a requirement of the U.S. grades; these tolerances are provided for instances when size is specified. (Refer to Size section.)

Application of Tolerances

§51.1215 Application of tolerances to individual packages.

(a) The contents of individual packages in the lot, based on sample inspection, are subject to the following limitations, provided the averages for the entire lot are within the tolerances specified for the grade:

(1) For packages which contain more than 10 pounds, and a tolerance of 10 percent or more is provided (as in the case of oversize, where a tolerance of 15 percent is provided), individual packages in any lot shall have not more than one and one-half times the tolerance specified. For packages which contain more than 10 pounds and a tolerance of less than 10 percent is provided, individual packages in any lot shall have not more than double the tolerance specified, except that at least one peach which is seriously damaged by insects or affected by decay may be permitted in any package.

(2) For packages which contain 10 pounds or less, individual packages in any lot are not restricted as to the percentage of defects: *Provided*, That not more than one peach which is seriously damaged by insects or affected by decay may be permitted in any package.

For packages containing more than 10 pounds

Shipping Point

**U.S. Fancy, U.S. Extra No. 1,
and U.S. No. 1**

Total Defects	10% x 1-1/2 = 15%
<i>Including serious damage</i>	5% x 2 = 10%
<i>including decay</i>	1% x 2 = 2%

U.S. No. 2

Total Defects	10% x 1-1/2 = 15%
<i>Including decay</i>	1% x 2 = 2%

En Route or at Destination

**U.S. Fancy, U.S. Extra No. 1,
and U.S. No. 1**

Total Defects	14% x 1-1/2 = 21%
<i>Including permanent defects</i>	10% x 1-1/2 = 15%
<i>Including serious damage</i>	7% x 2 = 14%
<i>including serious damage by permanent defects</i>	5% x 2 = 10%
<i>including decay</i>	2% x 2 = 4%

U.S. No. 2

Total Defects	14% x 1-1/2 = 21%
<i>Including permanent defects</i>	10% x 1-1/2 = 15%
<i>Including decay</i>	2% x 2 = 4%

Packages containing 10 pounds or less individual packages are **not** restricted as to the percentage of defects.

NOTESHEET AND CERTIFICATE

Entries on the notesheet and certificate must be kept in a legible and accurate manner. It is mandatory that all information which appears 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 shall be recorded so that anyone familiar with inspection procedures can interpret them and write a certificate. Also remember that notesheets and certificates are prima facie evidence and must be able to 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 "Peaches," shall be used to describe this commodity in the product heading. Type (yellow or white flesh) may be reported in the "Product/Variety" section on the shipping point inspection certificates or in the "Lot ID" section on the market notesheet and certificate.

Peaches are usually defuzzed by washing or brushing. In recent years defuzzing has become so general that it is very unusual when peaches are shipped in their natural state. Therefore, it is not necessary to make any notation on the certificate when peaches are washed or brushed. However, when peaches have not been defuzzed, this information should be shown under the "Product/Variety" section on the shipping point inspection certificates or in the "Lot ID" section on the market notesheet and certificate.

Number/Type of Containers

The number of containers shall 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.

Peaches are packed and shipped in a variety of containers, including 1 and 2 layer place packs, and jumbled/volume filled containers.

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 inspectors 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 what state or country the peaches are grown.

CONDITION OF PACK

When describing pack report any liners or pads within the containers, also if the peaches are wrapped report this fact.

Volume Filled or Jumble Packed containers

The following terms should be used to describe pack when peaches are **volume filled** or **jumble packed**:

Well filled - The contents of the container are packed within 1 inch of the top of the container.

**** **Fairly Well Filled** - The contents have some movement and may be slightly below the top edge of the container, but not more than 1 inch below the top edge.

Slack - The contents are loose and the fruit is more than 1 inch below the top edge of the container. This term must always be qualified by showing how much the fruit is below the top edge in fractions of an inch or inches.

Tray pack containers

The following terms shall be used to describe pack when peaches are **tray** or **cell** packed:

Very Tight- The pack is too tight and usually results in bruising.

Tight- The container is sufficiently filled to prevent fruit movement in the cups.

Fairly Tight- There is only slight fruit movement in the cups.

Slack- There is free movement of the fruit in the cups. When this term is used, the amount of slackness must always be reported in fractions of an inch or inches.

Standard Pack

Standard pack is not a requirement of the grade(s), and shall only be determined when specifically requested by the applicant. When requested to determine standard pack, use the following requirements:

§51.1217 *Standard pack.* (a) Each package shall be packed so that the peaches in the shown face shall be reasonably representative in size, color and quality of the contents of the package.

(b) Peaches packed in U.S. Standard bushel baskets, or half-bushel baskets shall be ring faced and tightly packed with sufficient bulge to prevent any appreciable movement of the peaches within the packages when lidded.

(c) Peaches packed in standard western boxes shall be reasonably uniform in size and arranged in the packages according to the approved and recognized methods. Each wrapped peach shall be fairly well enclosed by its individual wrapper. All packages shall be well filled and tightly packed but the contents shall not show excessive or unnecessary bruising because of overfilled packages. The number of peaches in the box shall not vary more than 4 from the number indicated on the box.

(d) Peaches packed in other type boxes such as wire-bound boxes and fiber-board boxes may be place packed, or jumble packed faced, and all packs shall be well filled.

(e) Peaches packed in boxes equipped with cell compartments or molded trays shall be of the proper size for the cells or the molds which they are packed.

(f) Peaches placed in individual paper cups and packed in boxes shall be in cups of the proper size for the peaches.

(g) Peaches packed in loose or volume filled boxes shall be uniform in size and well filled.

(h) In order to allow for variations incident to proper packing, not more than 10 percent of the packages in any lot may not meet these requirements.

(i) "Well filled" means that the peaches packed in loose or volume filled containers are packed within 1 inch of the top of the container.

Important points to remember when determining standard pack:

- The application of tolerances does not apply to standard pack. Not more than 10% of the containers in a lot may fail to meet the requirements of standard pack.
- A lot of peaches can fail to meet standard pack and still meet grade. The grade statement would be as follows: "U.S. No. 1. Fails to meet the requirements of standard pack."
- Note in the "Remarks" section of the certificate and notesheet "Standard pack determined at applicant's request."

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. Remember to pre-cool the thermometer in order to obtain true readings. 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, and these must be reported in greater detail specifying location in lot or load.

SIZE

One of the size requirements in the U.S. Standards is that the numerical count or the minimum diameter of the peaches packed in closed containers shall be indicated on the containers. This requirement does not apply to peaches in open containers.

§51.1216 Size requirements.

(a) The numerical count or a count-size based on equivalent tray pack size designations or the minimum diameter of the peaches packed in a closed container shall be indicated on the container.

(b) When the numerical count is not shown the minimum diameter shall be plainly stamped, stenciled, or otherwise marked on the container in terms of whole inches, whole and half inches, whole and quarter inches, or whole and eighth inches, as 2 inches minimum, 2-1/4 inches minimum, 1-7/8 inches minimum, in accordance with the facts. The minimum and maximum diameters may both be stated, as 1-7/8 to 2 inches, or 2 to 2-1/4 inches, in accordance with the facts.

(c) “Diameter” means the greatest dimension measured at right angles to a line from stem to blossom end of the fruit.

(d) In order to allow for variations incident to proper sizing, not more than 10 percent, by count, of peaches in any lot may be below the specified minimum size and not more than 15 percent may be above any specified maximum size.

Size Reported by Diameter

The diameter of peaches is defined as meaning the greatest dimension measured at right angles to a line from stem to blossom end of fruit. This is best measured using a sizing ring, however, a caliper may also be used to measure the diameter.

When containers are marked to denote size, the inspection should be based on this size. When a minimum diameter is marked, determine the range and the amount smaller than the size marked. If a maximum diameter is also marked, determine the

amount larger than this size. If the size is not marked on the container, report the minimum and maximum diameters found. When any range is 3/4 inch or more, use a “mostly” statement following the general range.

When a lot does not have the size marked on closed containers, the statement “Fails to meet size requirements as to marking.” should be shown under the Grade heading.

Markings as to Count

Peaches in boxes, lugs and many types of cartons are fairly uniformly sized and are packed in rows and layers. These containers are usually stamped or marked with numerical count depending on the size of the fruit and its arrangement in the container.

Peaches packed in this fashion may be described as “Fairly uniform in size” when the variation in diameter, with a 5% tolerance by count, does not exceed:

Size	Variation
45 or larger	1/2 inch
50 to 75	3/8 inch
80 (84) or smaller	1/4 inch

If peaches are not “fairly uniform,” they should be described as irregular.

Size or jumble packs are generally marked with one of the count/size designations. The California Peach Committee has established size regulations in terms of the maximum number of peaches in 16-pound samples. These weight-count regulations apply to all types of containers and are listed in the Summary of Marketing Orders and Import Regulations. By the use of these equivalent peach sizes, the inspector can determine whether the contents of jumble packs meet the count/size markings. This table may change from season to season and such changes will be published as soon as they are available. If in doubt at any time, check with your supervisor.

To determine compliance with the size markings, the inspector takes a 16-pound sample at random and counts the number of peaches in the sample. For example, if a sample from a carton of Flavorcrest peaches marked “80,” counts out to no more than 73 peaches, it complies with the size marked. (If the count is no more than shown in the table for the specified size marked, the marking will be considered correct.)

Compliance with such size markings for volume-filled packs cannot be certified for varieties or sizes not shown in the table.

Shrinkage in Transit

Since peaches may shrink as much as 1/16 of an inch in transit, this amount should be considered a matter of condition and not grade in receiving markets. This will make it necessary to set up two separate columns for undersize on the note sheet, one showing definitely more than 1/16 inch and one showing up to 1/16 inch undersize. Special care should be taken in making these measurements, especially in lots, which contain large numbers of fruits, which just met the requirements at shipping point.

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**, sometimes referred to as "**permanent**" defects) means defects which do not change during storage or shipment (shape, scars, etc.).

Factors noted with **(C)** shall be reported as **CONDITION** on market certificates. (**Condition defects** are defects which are subject to change during shipment or storage, including but not limited to bruising, discoloration, shriveling and decay.)

Those factors noted with **(Q or C)** may be considered as **QUALITY or CONDITION**, depending on the circumstances.

Bacterial Spot (Q)

This is an orchard disease caused by bacterial infection. It appears on the peach as small, circular, faint brown spots that later enlarge and grow darker. In the early stages, it may easily be confused with Scab. However, as it develops, it becomes darker brown, does not have the greenish cast, and is less circular than Scab. In advanced stages, Bacterial Spot causes the tissues to dry out and crack.

This disease is also found in most peach growing sections, but is usually more severe in southern areas. The disease is controlled by keeping the trees healthy and vigorous by means of proper pruning and spraying.

§51.1221 Damage. (a) Bacterial spot, when cracked, or when aggregating more than 3/8 inch in diameter;

§51.1222 Serious damage. (a) Bacterial spot, when any cracks are not well healed, or when aggregating more than 3/4 inch in diameter;

Bruising (C)

Peaches which are only slightly bruised or flattened on one side by pressure of the pack and show no discoloration, should not be considered bruised.

The soft discolored flesh of a bruised peach causes the affected area to have a brownish appearance resembling decay. Inspectors must learn to distinguish between bruised and decayed areas. The skin on a decayed area is affected the same as the underlying flesh while the skin over a bruised area is not affected. When removed, the skin covering a bruised area will not show discoloration or any other effects of the bruise. Only the changed color of the flesh causes the discolored appearance.

Peaches that are not soft may show bruises that are soft and discolored. The inspector should be careful to determine and describe this condition accurately. A soft peach is always scored against the 7% restricted tolerance for serious damage. A bruised peach may be scored either against the 14% tolerance for damage or the 7% tolerance for serious damage depending on the extent of the bruising.

Peaches with soft tips or soft seams, which are otherwise ripe to hard, will be scored based on the guidelines for damage or serious damage by bruising. They will be reported as "bruising affecting tips" or "bruising affecting seams." However, soft peaches and peaches with soft areas involving more than 10% of the surface shall be scored as soft against the tolerance for serious damage.

Score as **damage**:

- (1) Any bruise discoloring the flesh deeper than 3/16 inch; or
- (2) Any bruise causing discoloration exceeding the area of a circle 1/2 inch in diameter; or
- (3) An aggregate of lesser bruises detracting from the appearance, edible, or shipping quality of the peach as much as 1 or 2 above.

Score as **serious damage**:

- (1) Any bruises discoloring the flesh deeper than 3/8 inch; or
- (2) Any bruises causing discoloration exceeding the area of a circle 3/4 inch in diameter; or,
- (3) An aggregate lesser bruises detracting from the appearance, edible, or shipping quality of the peach as much as 1 or 2 above.

Note: Area or depths of bruises specified are applicable to a peach 2-1/4 inches or smaller in diameter. Correspondingly greater areas or depths shall be allowed on definitely larger peaches.

While minor bruises that do not cause damage will not usually be shown on the certificate, if the applicant requests it, they may be shown, but should be followed by the statement “not affecting grade.” In describing bruises, the location in the container and in the load as well as the degree of firmness of the affected fruit should be stated.

Cleanness (Q)

The U.S. grades for peaches have the following requirements for cleanness:

U.S. Fancy & U.S. No. 1: Free from damage by dirt or other foreign material.

U.S. No. 2: Free from serious damage by dirt or other foreign material.

Peaches may be described as clean when there are no noticeable streaks of dirt or stains. When peaches are run over machines, while wet, they may become stained and present an unattractive appearance. This condition should be scored on the basis of individual peaches, which are dirty or stained.

Color (Q)

When describing the color of peaches, it is important to distinguish between red color (the amount of blush, pink, or red color) and ground color.

Color statements should refer to blushed, pink, or red color and not to the ground color. The red or blush color is not a good index of maturity since it varies with the variety, producing sections, weather conditions and other factors, as well as with the stages of ripeness.

Color is often an important factor in determining the market value of peaches and therefore should be carefully determined and described. It should be remembered that a peach does not develop any red color after it is picked, although this color appears more pronounced on a ripe peach than on one which the ground color is green. Under certain conditions, peaches may ripen without taking on the normal color for the variety, and it is also true that the color of a given variety may vary in different producing sections.

When requested to report the amount of red, pink, or blushed color, report the percentage of surface area with blush or red color, do not use general terms. All shades or degrees of blush, pink, or red color should be allowed in determining the total or aggregated area with color. A slight tint of pink color over the required percentage of the surface would meet the color requirements for U.S. Fancy or U.S. Extra No. 1 grades.

The **U.S. Fancy** grade requires that 1/3 of the surface of the peach have a blushed, pink, or red color. Whenever containers are marked U.S. Fancy, the percentage of peaches failing to meet the color requirements should be noted the same

as any other defects. If more than 10% by count of the peaches fail to meet this color requirement, the lot will fail to grade U.S. Fancy.

When reporting peaches of the U.S. Fancy grade showing not more than 10% of the peaches with less than the required amount of color, no average need be stated. It is sufficient to state, for example: "Peaches generally show 35 to 65% blushed, pink, or red color." Should the percentage of under-color run higher than 10%, the range and average should be given. The statement then should read, "Most peaches show 35 to 65% blushed, pink, or red color with 15 to 30%, average 20% showing less than 1/3 blushed, pink or red color."

The **U.S. Extra No. 1** grade provides that not less than 50%, by count, of the peaches in any lot shall have not less than 1/4 of the surface showing blushed, pink, or red color, and that individual packages may have not less than 40%, by count, of the peaches showing this color.

The U.S. No. 1 and the U.S. No. 2 grades have no color requirements.

Ground Color

The following terms should be used in describing ground color of yellow varieties: "Green," "light green," "turning yellow," and "yellow." The terms for white fleshed varieties are "green," "whitish green," "creamy white" and "cream."

Internal Discoloration (C)

This is the name for a group of disorders sometimes referred to individually as Internal Breakdown, Internal Browning, or Pit Burn. These disorders are very similar in appearance particularly in the early stages. Since these disorders are so difficult to distinguish and for the sake of uniformity they shall be described as "Internal Discoloration" on certificates and followed by a short description of the appearance (i.e. Internal Discoloration occurring as brown water-soaked areas around the pit). Internal Discoloration may result from any one of a number of causes such as varietal susceptibility; high temperatures while ripening on the tree, and/or prolonged storage. Initially, the discoloration is usually more intense next to the pit, then later progresses into the flesh. Even in advanced stages it is not unusual for fruit affected by Internal Discoloration to have a normal appearance externally. For cutting procedures refer to section entitled "Sampling for Internal Defect."

As a guide, Internal Discoloration shall be scored when there is an aggregate area of distinct brown discoloration extending at least 1/8 inch in depth, into the flesh around the entire pit. This defect is always scored as serious damage.

Surface Discoloration (Q) or (C)

Surface discoloration can result from numerous causes related to rubbing, rolling or other types of abrasions on the peach surface. Occasionally dirt or grease from grading and/or packing machinery will cause a dark surface discoloration, which is present at the time of packing and should be scored as a quality defect.

Color	U.S. Fancy	U.S. No. 1	U.S. No. 2
Tan to Light Brown	1"	1"	1 1/2"
Medium Brown	3/4"	3/4"	1 1/4"
Dark Brown to Blackish	1/2"	1/2"	1"

Refers to aggregate area of specified diameter.

The above areas of surface discoloration are based on a peach 2-1/4" in diameter, with correspondingly smaller or larger areas depending on diameter of individual fruit being graded. Areas of similar discoloration should be aggregated to determine maximum area allowed. Remember any combination of colors of discoloration that affect appearance to a greater degree than the aggregate area allowed should be scored.

Firmness (C)

The firmness of peaches should be described with care. If the load contains different lots, which show varying stages of maturity, a separate statement should be made for each lot.

The following terms should be used in describing the degrees of firmness of peaches:

Hard means that the peach does not yield to moderate pressure. This is the stage at which peaches are usually picked when long keeping or carrying quality is the prime consideration. Such fruit will ripen but will not be as large or well flavored as if it were allowed to remain longer on the tree.

Firm means that the peach yields very slightly to moderate pressure. Fruit at this stage of maturity is not yet edible.

Firm Ripe means that the peach yields slightly to moderate pressure. The flesh is fairly palatable but has not reached the prime eating stage.

Ripe means that the peach yields readily to moderate pressure. The flesh has reached the best eating condition.

Soft means that the peach has very little resistance to slight pressure. Such peaches are “dead ripe.” The terms “overripe” and “dead ripe” should not be used. **All soft peaches shall be scored against all grades as serious damage.**

Peaches with soft seams or soft tips, which are otherwise ripe to hard, are not defects unless affected by bruising. (See “Bruising” section for scoring guidelines.) **Soft peaches and peaches with soft areas involving more than 10% of the surface should be scored as soft against the tolerance for serious damage.**

The firmness of peaches should be determined by placing the peach in the palm of the hand and exerting pressure uniformly with the inside of all fingers. Do not press the peach with the thumb.

Growth Cracks (Q)

U.S. Fancy, U.S. Extra No. 1, & U.S. No. 1: Free from growth cracks.

U.S. No. 2: Free from serious damage.

Score as **serious damage:**

(1) When unhealed or healed cracks are over 1/2 inch in length.

See Photograph PCH-3-IDENT for identification only of growth cracks.

Gum Spot and Cold Damage (Q)

Gum spots should be scored as follows:

U.S. Fancy: Free from.

U.S. No. Extra 1 and U.S. No. 1:

Score as **damage:**

(1) When more than one spot or if aggregating over 3/16 inch in diameter, or if the area extends more than 1/8 inch into the flesh.

U.S. No. 2:

Score as **serious damage:**

(1) When gum spots aggregate more than 1/2 inch in diameter or penetrate more than 1/8 inch into the flesh.

Cold damage usually occurs when peaches are small and immature. This defect may occur as a sunken area on the side or on the shoulders of the peach. In some cases there will be a deposit of gum under the sunken area. When this is true, the defect should be scored on the same basis as Gum Spot. When there are sunken and/or greenish discolored areas without gum underneath, the defect should be scored when the appearance is materially affected. As a guide, these sunken areas should be scored on the same basis as specified for hail injury in the U.S. Standards.

Hail Injury (Q)

Hail injury consists of irregular, more or less sunken spots, which often have dried up fragments of the skin and flesh around the edges or on the surface. These spots differ from curculio injury in being larger and in showing little or no gummy exudate and no trace of larva burrows underneath. Such injuries should be well healed to be permitted in any grade. Hail injury should be scored as follows:

U.S. Fancy: Free from.

U.S. No. Extra 1 and U.S. No. 1:

Score as **damage:**

(1) When unhealed or when more than 1/8 inch in depth or when aggregating more than 1/4 inch in diameter.

U.S. No. 2:

Score as **serious damage:** When unhealed, or shallow hail injury when aggregating more than 3/4 inch in diameter, or deep hail injury which seriously deforms the fruit or which aggregate more than 1/2 inch in diameter.

Insects (Q)

The U.S. Fancy, U.S. Extra No. 1, and U.S. No. 1 grades require peaches to be “free from damage by insects.” The U.S. No. 2 grade requires peaches to be “free from serious damage.” Insects can cause simple scarring with no depth to extensive injury with depth. If the inspector is certain that the defect was caused by insects the following scoring guide is to be used:

U.S. Fancy, U.S. Extra No. 1, and U.S. No. 1:

Score as “damage by insects” if the defect is:

(1) Unhealed, or healed and has greater than 1/8 inch in depth;

(2) Healed, smooth and light colored and has some depth, but the depth is not greater than 1/8 inch and is greater than 1/4 inch (singularly or in the aggregate) in diameter;

- (3) Healed, smooth and light colored, and that has no depth, and is greater than 1/2 inch in diameter (singularly or in the aggregate).

U.S. No. 2:

Score as “serious damage by insects” if the defect is:

- (1) Unhealed;
- (2) Healed, smooth and light colored and has some depth, but the depth is not greater than 1/8 inch and is greater than 1/2 inch (singularly or in the aggregate) in diameter;
- (3) Healed, smooth and light colored, and that has no depth, and is greater than 1-1/2 inches in diameter (singularly or in the aggregate);
- (4) Healed, slightly rough or bark-like, or rough, has no depth and is greater than 3/4 inch in diameter (singularly or in the aggregate).

Limb or Leaf Rubs (Q)

These are a result of fruit rubbing against the limbs or leaves of the tree. Marks should be scored as damage when not smooth, or when not light colored, or when aggregating more than 1/2 inch in diameter. Score as serious damage when smooth, and light colored, and aggregating more than 1-1/2 inches in diameter, or dark or slightly rough and bark-like scars aggregating more than 3/4 inch in diameter.

Maturity (Q)

§51.1218 Mature. “Mature” means that the peach has reached the stage of growth which will insure a proper completion of the ripening process.

There are a number of conditions that influence the maturity of peaches including kind and amount of fertilizer used, weather and moisture during late growing and ripening periods, amount of foliage, and vigor of trees. Consequently, there is no single factor that furnishes a reliable guide as to when a peach is mature.

The following principal indications of maturity which are used by shipping point inspectors will be of assistance to market inspectors and should all be given consideration in determining whether peaches are mature. No single one is conclusive.

- (1) Ground color is an important external indication of maturity. The ground color of immature peaches is usually dark green. In most cases, mature peaches have the ground color changing to a whitish or yellowish green, depending on the variety, vigor or density of foliage on the tree. The ground color of the shaded or unexposed side of the peach should be judged, not the blushed

side. This is one of the best external indications of a mature peach, but is not absolutely reliable.

- (2) The flesh of an immature peach has a fine granular appearance, which gradually disappears as the fruit becomes mature. This change may progress either from the pit outward or from the skin towards the pit, depending on the variety and weather conditions. This fine granular appearance can best be observed when the flesh is broken rather than cut. The inspector should cut deeply into a peach and break a portion of the flesh from the pit outward. If the fine granular condition has started changing, it will show a change from green to whitish green or creamy white in white-fleshed varieties. In yellow-fleshed varieties, the change will be from green to light green or yellowish color. When there is a definite noticeable change in flesh granulation, and a chewed portion of the flesh has some sweetness, the peach is considered mature. In fact these two indices are the most reliable indications of a mature peach.
- (3) The shoulders and sutures of most varieties should be well rounded and filled out, and not pinched or drawn. This indication is not completely reliable because, in dry seasons, mature peaches may not be filled out normally.
- (4) Mature peaches of most freestone varieties will usually come free from the pit without adhering flesh when cut crosswise to the pit and twisted in the hands. However, in dry seasons and in lots that have been highly fertilized with nitrates, immature peaches will do the same thing. This "separation from the pit" test is not very reliable and should never be used alone.
- (5) Red color of the flesh closest to the pit, which as sometimes been used as an indication of maturity, is one of the least reliable indicators. Amount of moisture, fertilizer and other growing conditions may cause the amount of red color next to the pit to vary materially.

Immature

Immature peaches are defects in all grades. Peaches that fail to meet the requirements of mature shall be reported as immature and scored as serious damage.

Moldy Seed Cavities (C)

Mold within the seed cavity of a peach will generally affect the taste of the flesh around the seed and increases the probability of decay. Score as serious damage by moldy seed cavities if mold is readily apparent (visible).

Open Seams (Q)

Peaches are susceptible to a developmental formation of a longitudinal cleft or furrow. The furrow may extend in length, either partially or whole, from the stem to the blossom end of the fruit. It may be shallow or deep or may instead be raised above the normal contour of the surface of the peach and appear as a protuberance. In either case, the edges of the furrow or protuberance are relatively smooth. If it looks like a furrow, it gives the appearance that the peach may have formed in two halves with this point being the junction. When this furrow or cleft exists it shall be referred to as an open seam or open suture (seam and suture in this case are synonymous). Open seams shall be scored according to either Model 1-D or Photograph PCH-CP-4. For example, a U.S. No. 1 peach approximately 2-3/4 inches in diameter may have an open seam not deeper than 3/8 inch, wider than 3/8 inch, or longer than 1-1/4 inches (approximately 1/3 of the surface length). Photograph PCH-CP-4 also shows the maximum allowed for a U.S. No. 2 peach. Open seams are scored against the U.S. Fancy grade on the guide given for U.S. No. 1.

Red Spots (Q)

Red spots occur as small, circular, solid red spots affecting the surface of the peach. Red spots that occur within the blush area of the peach shall not be scored unless they contrast considerably with the color.

These red spots should **not** be confused with those that are associated with scale injury, which will have a light colored spot in the center of the red indicating that the scale insect was present prior to getting rubbed off during the harvesting, brushing, and cleaning of the peach.

Score as **damage**: When the spots are prominent and do not occur in the area of the blush, when affecting an aggregate area greater than a circle of 3/4 inch in diameter.

Score as **serious damage**: When the spots are prominent and do not occur in the area of the blush, when affecting an aggregate area greater than a circle of 1-1/4 inches in diameter.

Scab (Q)

Scab is caused by a fungus growth, and is an orchard disease. Scab is found in most peach growing areas and appears as small circular olive-green to black spots. It grows more readily in wet or damp weather, but does not develop or spread after the peaches are harvested. In many areas growers and packers refer it to as "frog eye."

Scab spots are usually less than 1/8 inch in diameter. When the infection is severe, the spots may run together or coalesce to form large, dark, sooty areas. In some cases, these coalesced spots will cause the skin to become dry and cracked, and the fruit becomes dwarfed or misshapen because of the formation of a protective layer of cork under the diseased areas.

§51.1221 Damage. (b) Scab spots, when cracked, or when aggregating more than 3/8 inch in diameter;

§51.1222 Serious damage. (b) Scab spots, when cracked, or when healed and aggregating more than one inch in diameter;

Scale (Q)

The importance of scale as a grade defect has greatly diminished with the advent of good spray programs. San Jose scale is the most serious of the scale insects affecting peaches, but others such as Forbes, Putnam, etc., are of commercial importance in some areas.

The most common evidence that indicates the presence of San Jose scale is 1 or more small reddish or pinkish areas about 1/8 inch in diameter. At the center of these areas are usually a light colored spot marking the place formerly occupied by the tiny insect before it was rubbed off during harvesting, brushing, and cleaning of the fruit.

The scale insect is a grayish or grayish brown color, less than 1/16 inch in diameter. It must be remembered that spots suggesting the presence of the scale may also be caused by other factors. Only the scaly insects should be considered when estimating the aggregate area of a 1/4 inch circle allowed before scoring as damage, and a 1/2 inch circle allowed before scoring as serious damage. Marks remaining after the scale has been removed should be scored on the basis of how much the appearance of the peach is affected, and not on the 1/4 or 1/2 inch area basis.

§51.1221 Damage. (c) Scale, when concentrated, or when scattered and aggregating more than 1/4 inch in diameter;

§51.1222 Serious damage. (c) Scale, when aggregating more than 1/2 inch in diameter;

Seam Cracks (Q)

This disorder is apparently triggered by peaches being frozen early in their development. It causes the peaches to split along the seam and should be scored on the following guidelines:

Score as **damage**:

- (1) Any seam crack not well healed; or
- (2) Any seam crack exceeding 3/32 inch in depth; or
- (3) Any seam crack exceeding 3/32 inch in width; or
- (4) Any seam crack exceeding 1/2 length from stem to blossom end, regardless of depth or width.

Score as **serious damage**:

- (1) Any seam crack not well healed; or
- (2) Any seam crack exceeding 1/8 inch in depth; or
- (3) Any seam crack exceeding 1/8 inch in width.

See Photograph PCH-3-IDENT for identification only of seam cracks.

Shape (Q)

§51.1219 Well formed. “Well formed” means that the shape of the peach may be slightly irregular but not to the extent that its appearance is materially affected.

Although “well formed” as defined in the U.S. Standards for Peaches states that the shape of the peach may be slightly irregular, but not to the extent that its appearance is materially affected, it should be remembered that the shape of some varieties will differ when grown in different sections. The same varieties of peaches grown in some sections are quite flat, in others more globular in outline, while from some locations they may be distinctly pointed. Peaches may be badly misshapen or irregular in outline because of insect injury, split pits, limb injuries, etc.

Peaches must be well formed to meet requirements of the U.S. Fancy, U.S. Extra No. 1, and U.S. No. 1, but in the U.S. No. 2 grade, they must not be badly misshapen, which means that the appearance of the peach is not seriously affected.

Skin Breaks and Cuts (Q)

Cuts and skin breaks are not permitted in any of the U.S. Grades if not well healed. By the time peaches have reached the market many small finger nail, or wire cuts will be healed and should not be scored unless they appear to be damaged from an appearance.

Split Pits (Q)

Split pits in peaches are due to imperfect growing conditions. They may be distinguished by irregularity in shape of fruit or by openings at the stem. Split pits may cause the flesh of peaches to crack or split and provide an entrance for decays.

The peach standards define “damage by split pit” as:

§51.1221 Damage (f) Split pit, when causing any unhealed crack, or when causing any crack which is readily apparent, or when affecting shape to the extent that the fruit is not well formed.

The words “readily apparent” will be interpreted as “over 1/16 inch in width at any visible point.” The portion of the definition which refers to shape will be interpreted as follows: Score as **not well formed** any misshapen peach showing either no split pit

crack or a split pit crack not over 1/16 inch wide, even though the peach is apparently misshapen because of a split pit. However, when a peach has a split pit crack over 1/16 inch wide, score as damage by split pit even though it may also be misshapen.

The standards define serious damage by split pit as:

§51.1222 Serious damage (g) Split pit, when causing any unhealed crack, or when healed and aggregating more than 1/2 inch in length including any part of the crack which may be covered by the stem;

Any healed crack more than 3/16 inches wide at any visible point will also be scored as serious damage.

When checking for split pits, inspectors should not remove the stem to look for splits. Only those peaches, which have any crack readily apparent, should be carefully checked to see if it exceeds 1/16 inch in width at any visible point. Fruit with split pits should be checked at random for moldy seed cavities.

Sunburn (Q)

During extremely hot weather peaches may show sunburn, or a combination of spray-burn and sunburn if the spray is applied during such periods. It is impossible to establish a definite aggregate area permitted for the various grades because of the wide variation in degree of injury. Sunburn, or a combination of spray-burn and sunburn in which the underlying flesh is not discolored, can be scored on the basis of whether it affects the appearance to a greater extent than the amount of leaf or limb rubs permitted for the grade. If the flesh is discolored, it should be scored against the U.S. Fancy grade. Very slight discoloration, which is confined to the surface of the flesh and is restricted to a very small area, may be permitted in the U.S. No. 1 grade, provided that the flesh is not soft. Discoloration of the flesh which is soft or which extends more than slightly into the flesh should be scored as serious damage.

Worms and Worm Holes (Q or C)

Peaches showing wormholes or having worms present should be scored as **serious damage** against all grades. If live worms are found at time of inspection, the defect should be reported under the condition heading. There are three principal insect larvae that attack peaches - the Oriental Fruit Moth, the Plum Curculio, and the Peach Twig Borer.

The Oriental Fruit larva usually enters the fruit at or near the stem, but may enter through other portions of the fruit. The entrance hole is often very small and may easily be overlooked. This larva tunnels through the flesh and before the peach has broken down it is very difficult to determine the presence of the insect externally. In some cases a very small hole or tiny web-like cocoon near the stem indicates the presence of the larva. When full grown, the larva is about 1/2 inch long, pink in color, and has legs.

The Plum Curculio larva often enters the peach through the seam, but may enter at other places. It is frequently rather difficult for the inspector to see the place of

entrance, but in most cases a small spot will be visible. It usually tunnels deep into the flesh of the peach and often causes breakdown around the seed.

The full-grown larva is about 3/8 inch in length, and white or yellowish-white in color. It is legless, grub-like in appearance, and lies in a curled position.

The most common insect causing worm injury in the western states is the Peach Twig Borer. When the worm enters through the stem or next to it, the entrance may be marked with frass or gum. If the worm enters in other parts of the fruit, the frass or gum will most likely be rubbed off. Often the entrance hole is very inconspicuous and easily overlooked. In order to be sure of the presence of a worm or wormhole, it is often necessary to carefully cut the peach adjoining the suspected place.

The sickly yellowish color of the peach may give some external indication of the presence of worms, but it is not always a true guide. If a worm infestation is found in a lot, all doubtful peaches and as many more as seems necessary should be cut. It will usually be satisfactory to cut the doubtful fruit and additional 5 to 10 peaches from each sample; however, in extreme cases a greater percentage of the sample should be cut. The percentage of worms or wormholes present is based on the entire sample run, and should be added to the percentage of other defects to determine the total percentage of defects for the sample.

Decay (C)

All grades require peaches to be free from decay. Any amount of decay is scorable against the 2% tolerance for decayed peaches en route or at destination. Do not report the type of decay on the certificate. However, when decay is in excess of the tolerance, report the degree and advancement as: early, moderate, or advanced.

For informational purposes a brief description of some of the more common decays follows:

Brown Rot and Rhizopus Rot are the principal decays affecting peach shipments. When no-fungus growth appears, it is sometimes difficult to distinguish between Brown Rot, Rhizopus Rot, and soft bruises.

Brown Rot

Brown Rot is primarily a field disease, which develops most rapidly under rainy or hot muggy weather conditions. Brown Rot originates in the orchard but may cause damage at any stage of the marketing process or even after the fruit reaches the consumer. In the orchard it occurs on leaves, blossoms, fruits, twigs and limbs. The completeness of the attack depends to a considerable degree on which of the stone fruits is affected and on temperature and moisture conditions.

The disease on the fruit appears at first as small, circular, light brown spots, which under conditions favorable to its development (at temperatures of 60° to 80° F.) may enlarge so rapidly as to produce large decayed spots in 24 hours. The spots at no stage are sunken, and the flesh remains firm. In late stages, the skin turns dark brown or even black. The easily observed yellowish-grey masses on the surface of rotted spots are composed of millions of spores, which are able to start the disease again on other fruits.

Rhizopus Rot

As in the case of Brown Rot, the *Rhizopus* fungus generally obtains entrance into the flesh of the peach through cuts, skin breaks, or punctures, but soft overripe fruit may also become involved in the “nests” of this decay which are frequently found.

In peaches attacked by *Rhizopus* Rot, affected tissues are light brown in color, and by the time the peaches are well decayed, the flesh is soft, though not mushy. At this stage, the coarse white fungus growth and white, grey, or black spherical sporangia or spore bearing bodies appear, which are easily distinguished from the yellowish-grey spore-bearing tufts of the Brown Rot fungus. In *Rhizopus* Rot the skin slips easily from the diseased flesh, whereas in advanced Brown Rot it usually clings tightly.

Fungus or spores are the most positive means of identifying these diseases, which are so similar in early stages. Holding a few specimens over night in a warm damp container such as a coffee can or shoebox containing a wet paper towel will result in mold growth by morning that will assist in making a positive identification.

Bitter Rot

Bitter Rot, also known as Anthracnose, is found far less commonly than Brown Rot or *Rhizopus* Rot. In early stages, the lesions are brown, firm, slightly sunken and round. Later stages from 1/4 to 1/2 inch in diameter may show fine grayish mold or salmon-pink sticky spore masses on the surface characteristic of Anthracnose on beans, watermelons, etc. Large lesions often produce a moist, firm conical-shaped decay with the apex extending to the pit. Although Bitter Rot lesions may resemble Brown Rot in early stages, they are usually more circular, sunken and more sharply outlined. These lesions are as firm or firmer than Brown Rot and much firmer than *Rhizopus* Rot.

Grade

Under this heading make a statement showing whether or not the lot meets the requirements of the grade or grades specified. When the lot inspected consists of different grades or varieties, part of which meet grade, and part of which fail to meet the grade requirement, it will be necessary to make separate statements for the different grades.

Percentage of Quality Statements

The percentage of any specified grade quality is determined by subtracting the combined percentages of all factors scored against the grade from 100%. Since size is not a requirement in the peach grades, amounts of undersize and oversize usually should not be included with defects and subtracted from 100% to determine this percentage. However, there is one exception to this rule. For instance, if a percentage of U.S. No. 1 quality is combined with a specified size, such as "85% U.S. No. 1 quality - 2 inch minimum" then the percentage of peaches smaller than 2 inches in diameter should be added to the percentage of defects, and this total subtracted from 100%. The remainder will be the percentage of U.S. No. 1 quality of that specified minimum size.

GRADE REQUIREMENTS AND DEFECTS CHART

Grade Factors	U.S. Fancy	U.S. Extra No. 1 and U.S. No. 1	U.S. No. 2
Shape	Well Formed	Well Formed	Not Badly Misshapen
Soft or Overripe	None	None	None
Decay	None	None	None
Bacterial Spot	None	When cracked, or aggregating over 3/8" in diameter	When any crack not well healed or aggregating over 3/4" in diameter
Cuts (Unhealed)	None	None	None
Growth Cracks	None	None	When unhealed, or over 1/2" in length
Hail Injury	None	When unhealed, or over 1/8" deep, or when aggregating over 1/4" in diameter	Unhealed or not more than 1/8" deep when aggregating over 1/2" in diameter, or which seriously deforms the peach
Scab	None	When cracked, or aggregating over 3/8" in diameter	When cracked, or when healed and aggregating over 1" in diameter
Worms and Worm Holes	None	None	None
Scale	None	When concentrated, or scattered and aggregating over 1/4" in diameter	When aggregating more than 1/2" in diameter
Split Pits	None	When causing unhealed crack, or over 1/16" wide, or affecting shape to extent not well formed	When causing unhealed crack, or over 1/2" in length including part which may be covered by stem, or over 3/16" wide at any visible point
Seam Cracks	Not well healed; or over 3/32" deep; or over 3/32" wide; 1/2 length from stem to blossom end, regardless of depth or width		Not well healed; or over 1/8" or over 1/8" wide
Open Seams	See photo PCH-CP-4 (Scored on the same basis as a U.S. No. 1)	See photo PCH-CP-4	See photo PCH-CP-4

Grade Factors	U.S. Fancy	U.S. Extra No. 1 and U.S. No. 1	U.S. No. 2
Leaf, Limb Rubs, or Similar Scars	When scarring is not smooth, not light colored or aggregating over 1/4"	When not smooth not light colored, or aggregating over 1/2" in diameter	Smooth light colored scars aggregating over 1-1/2" in diameter, or dark or slightly rough and bark-like scars aggregating over 3/4" in diameter
Bruises	(1) When causing discolored flesh deeper than 3/16" or (2) exceeding area of a circle 1/2" in diameter, or an aggregate of smaller bruises detracting from the appearance, edible or shipping quality as much as (1) or (2)	(1) When causing discolored flesh deeper than 3/16" or (2) exceeding area of a circle 1/2" in diameter, or an aggregate of smaller bruises detracting from the appearance, edible or shipping quality as much as (1) or (2)	(1) When causing discolored flesh deeper than 3/8" (2) exceeding area of a circle 3/4" in diameter, or an aggregate of smaller bruises detracting from the appearance, edible or shipping quality as much as (1) or (2)
Color Requirements*	Not less than 1/3 surface blushed, pink or red color	50% of peaches showing not less than 1/4 of surface blushed, pink or red color*	No color requirements
Other Varieties & Immaturity	None	None	None

*No color required for U.S. No. 1

APPENDIX I -- U. S. GRADE STANDARDS

United States Standards for Grades of Peaches

May 21, 2004

Grades

51.1210 U.S. Fancy.

51.1211 U.S. Extra No. 1.

51.1212 U.S. No. 1.

51.1213 U.S. No. 2.

Tolerances

51.1214 Tolerances.

Application of Tolerances

51.1215 Application of tolerances to individual packages.

Size

51.1216 Size requirements.

Standard pack

51.1217 Standard pack.

Definitions

51.1218 Mature.

51.1219 Well formed.

51.1220 Leaf or limb rub injury.

51.1221 Damage.

51.1222 Serious damage.

51.1223 Badly misshapen.

Grades

§51.1210 U.S. Fancy.

"U.S. Fancy" consists of peaches of one variety which are mature but not soft or overripe, well formed and which are free from decay, bacterial spot, cuts which are not healed, growth cracks, hail injury, scab, scale, split pits, worms, worm holes, leaf or limb rub injury; and free from damage caused by bruises, dirt or other foreign material, other disease, insects or mechanical or other means. In addition to the above requirements, each peach shall have not less than one-third of its surface showing blushed, pink or red color.

§51.1211 U.S. Extra No. 1.

Any lot of peaches may be designated "U.S. Extra No. 1" when the peaches meet the requirements of the U.S. No. 1 grade: **Provided**, That in addition to these requirements, 50 percent, by count, of the peaches in any lot shall have not less than one-fourth of the surface showing blushed, pink or red color.

§51.1212 U.S. No. 1.

"U.S. No. 1" consists of peaches of one variety which are mature but not soft or overripe, well formed, and which are free from decay, growth cracks, cuts which are not healed, worms, worm holes, and free from damage caused by bruises, dirt, or other foreign material, bacterial spot, scab, scale, hail injury, leaf or limb rubs, split pits, other disease, insects or mechanical or other means.

§51.1213 U.S. No. 2.

"U.S. No. 2" consists of peaches of one variety which are mature but not soft or overripe, not badly misshapen, and which are free from decay, cuts which are not healed, worms, worm holes, and free from serious damage caused by bruises, dirt or other foreign material, bacterial spot, scab, scale, growth cracks, hail injury, leaf or limb rubs, split pits, other disease, insects, or mechanical or other means.

§51.1214 Tolerances.

In order to allow for variations incident to proper grading and handling in each of the following grades, the following tolerances, by count, based on a minimum 50-count sample, except when packages contain less than 50 fruit, a minimum 25-count sample shall be examined, (when packages contain less than 25 fruit adjoining packages shall be opened to obtain the 25-count minimum sample), are provided as specified:

(a) U.S. Fancy, U.S. Extra No. 1, and U.S. No. 1 grades. (1) For defects at shipping point.¹ 10 percent of the peaches in any lot may fail to meet the requirements of the specified grade: **Provided**, That included in this amount 5 percent, shall be allowed for defects causing serious damage, including in this latter amount not more than 1 percent for peaches which are affected by decay.

(2) For defects en route or at destination. 14 percent for peaches in any lot that fail to meet the requirements of the grade: **Provided**, That included in this amount not more than the following percentages shall be allowed for defects listed:

(i) 10 percent for permanent defects;

(ii) 7 percent for defects causing serious damage, included therein not more than 5 percent for serious damage by permanent defects and not more than 2 percent for decayed peaches.

(3) For color. (i) U.S. Fancy grade. 10 percent for peaches in any lot which fail to meet the requirements of the grade.

(ii) U.S. Extra No. 1 grade. Individual packages may contain not less than 40 percent of peaches which meet the requirements of the grade: **Provided**, That the entire lot averages not less than 50 percent.

(b) U.S. No. 2 grade. (1) For defects at shipping point. 10 percent of the peaches in any lot may fail to meet the requirements of this grade: **Provided**, That included in this amount not more than 1 percent for peaches which are affected by decay.

(2) For defects en route or at destination. 14 percent for peaches in any lot that fail to meet the requirements of the grade: **Provided**, That included in this amount not more than the following percentages shall be allowed for defects listed:

(i) 10 percent for permanent defects;

(ii) 2 percent for peaches which are affected by decay.

Application of tolerances

§51.1215 Application of tolerances to individual packages.

(a) The contents of individual packages in the lot, based on sample inspection, are subject to the following limitations, provided the averages for the entire lot are within the tolerances specified for the grade:

(1) For packages which contain more than 10 pounds, and a tolerance of 10 percent or more is provided (as in the case of oversize, where a tolerance of 15 percent is provided), individual packages in any lot shall have not more than one and one-half times the tolerance specified. For packages which contain more than 10 pounds and a tolerance of less than 10 percent is provided, individual packages in any lot shall have not more than double the tolerance specified, except that at least one peach which is seriously damaged by insects or affected by decay may be permitted in any package.

(2) For packages which contain 10 pounds or less, individual packages in any lot are not restricted as to the percentage of defects: **Provided**, That not more than one peach which is seriously damaged by insects or affected by decay may be permitted in any package.

Size

§51.1216 Size requirements.

(a) The numerical count or a count-size based on equivalent tray pack size designations or the minimum diameter of the peaches packed in a closed container shall be indicated on the container.

(b) When the numerical count is not shown the minimum diameter shall be plainly stamped, stenciled, or otherwise marked on the container in terms of whole inches, whole and half inches, whole and quarter inches, or whole and eighth inches, as 2 inches minimum, 2-1/4 inches minimum, 1-7/8 inches minimum, in accordance with the facts. The minimum and maximum diameters may both be stated, as 1-7/8 to 2 inches, or 2 to 2-1/4 inches, in accordance with the facts.

(c) "Diameter" means the greatest dimension measured at right angles to a line from stem to blossom end of the fruit.

(d) In order to allow for variations incident to proper sizing, not more than 10 percent, by count, of peaches in any lot may be below the specified minimum size and not more than 15 percent may be above any specified maximum size.

¹ Shipping point, as used in these standards, means the point of origin of the shipment in the producing area or at port of loading for ship stores or overseas shipment, or, in the case of shipments from outside the continental United States, the port of entry into the United States.

Standard pack

§51.1217 Standard pack.

- (a) Each package shall be packed so that the peaches in the shown face shall be reasonably representative in size, color and quality of the contents of the package.
- (b) Peaches packed in U.S. Standard bushel baskets, or half-bushel baskets shall be ring faced and tightly packed with sufficient bulge to prevent any appreciable movement of the peaches within the packages when lidded.
- (c) Peaches packed in standard western boxes shall be reasonably uniform in size and arranged in the packages according to the approved and recognized methods. Each wrapped peach shall be fairly well enclosed by its individual wrapper. All packages shall be well filled and tightly packed but the contents shall not show excessive or unnecessary bruising because of overfilled packages. The number of peaches in the box shall not vary more than 4 from the number indicated on the box.
- (d) Peaches packed in other type boxes such as wire-bound boxes and fiber-board boxes may be place packed, or jumble packed faced, and all packs shall be well filled.
- (e) Peaches packed in boxes equipped with cell compartments or molded trays shall be of the proper size for the cells or the molds which they are packed.
- (f) Peaches placed in individual paper cups and packed in boxes shall be in cups of the proper size for the peaches.
- (g) Peaches packed in loose or volume filled boxes shall be uniform in size and well filled.
- (h) In order to allow for variations incident to proper packing, not more than 10 percent of the packages in any lot may not meet these requirements.
- (i) "Well filled" means that the peaches packed in loose or volume filled containers are packed within 1 inch of the top of the container.

Definitions

§51.1218 Mature.

"Mature" means that the peach has reached the stage of growth which will insure a proper completion of the ripening process.

§51.1219 Well formed.

"Well formed" means that the shape of the peach may be slightly irregular but not to the extent that its appearance is materially affected.

§51.1220 Leaf or limb rub injury.

"Leaf or limb rub injury" means that the scarring is not smooth, not light colored, or aggregates more than 1/4 inch in diameter.

§51.1221 Damage.

"Damage" means any injury or defect which materially affects the appearance, or the edible or shipping quality of the peach. Any one of the following defects, or any combination thereof, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as damage:

- (a) Bacterial spot, when cracked, or when aggregating more than 3/8 inch in diameter;
- (b) Scab spots, when cracked, or when aggregating more than 3/8 inch in diameter;
- (c) Scale, when concentrated, or when scattered and aggregating more than 1/4 inch in diameter;
- (d) Hail injury which is unhealed, or deep, or when aggregating more than 1/4 inch in diameter;
- (e) Leaf or limb rubs, when not smooth, or when not light colored, or when aggregating more than 1/2 inch in diameter;
- (f) Split pit, when causing any unhealed crack, or when causing any crack which is readily apparent, or when affecting shape to the extent that the fruit is not well formed.

§51.1222 Serious damage.

"Serious damage" means any injury or defect which seriously affects the appearance, or the edible or shipping quality of the peach. Any one of the following defects, or any combination thereof, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as serious damage:

- (a) Bacterial spot, when any cracks are not well healed, or when aggregating more than 3/4 inch in diameter;
- (b) Scab spots, when cracked, or when healed and aggregating more than one inch in diameter;
- (c) Scale, when aggregating more than 1/2 inch in diameter;
- (d) Growth cracks, when unhealed, or more than 1/2 inch in length;

- (e) Hail injury, when unhealed, or shallow hail injury when aggregating more than 3/4 inch in diameter, or deep hail injury which seriously deforms the fruit or which aggregates more than 1/2 inch in diameter;
- (f) Leaf or limb rubs, when smooth and light colored and aggregating more than 1-1/2 inches in diameter, or dark or slightly rough and barklike scars aggregating more than 3/4 inch in diameter;
- (g) Split pit, when causing any unhealed crack, or when healed and aggregating more than 1/2 inch in length including any part of the crack which may be covered by the stem;
- (h) Soft or overripe peaches;
- (i) Wormy fruit or worm holes.

§51.1223 Badly misshapen.

“Badly misshapen” means that the peach is so decidedly deformed that its appearance is seriously affected.