



United States  
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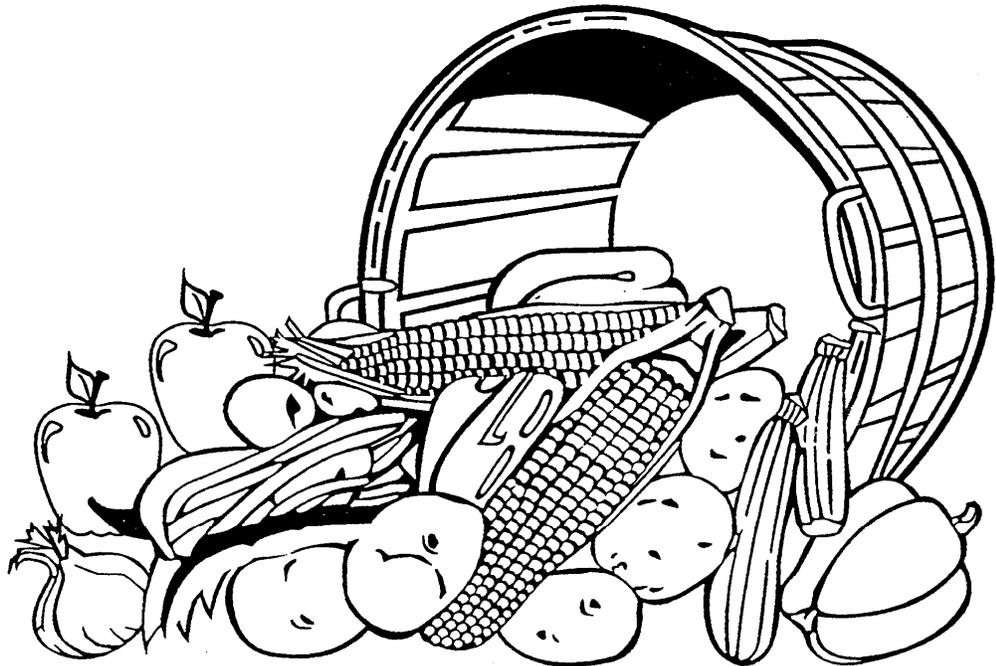
Fruit and  
Vegetable  
Programs

Fresh Products  
Branch

# Celery

## Shipping Point and Market Inspection Instructions

October 2005



# Shipping Point and Market Inspection Instructions For Celery

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 Celery, Section 51.560.

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 Celery are printed in the appendix of this handbook. All U.S. standards are available on the Internet under the USDA homepage.

**October 2005**

**This publication may be duplicated without authorization from USDA.**

This replaces Shipping Point Inspection Instruction dated November 1987 and Market Inspection Instructions for Celery dated September 1965.

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.

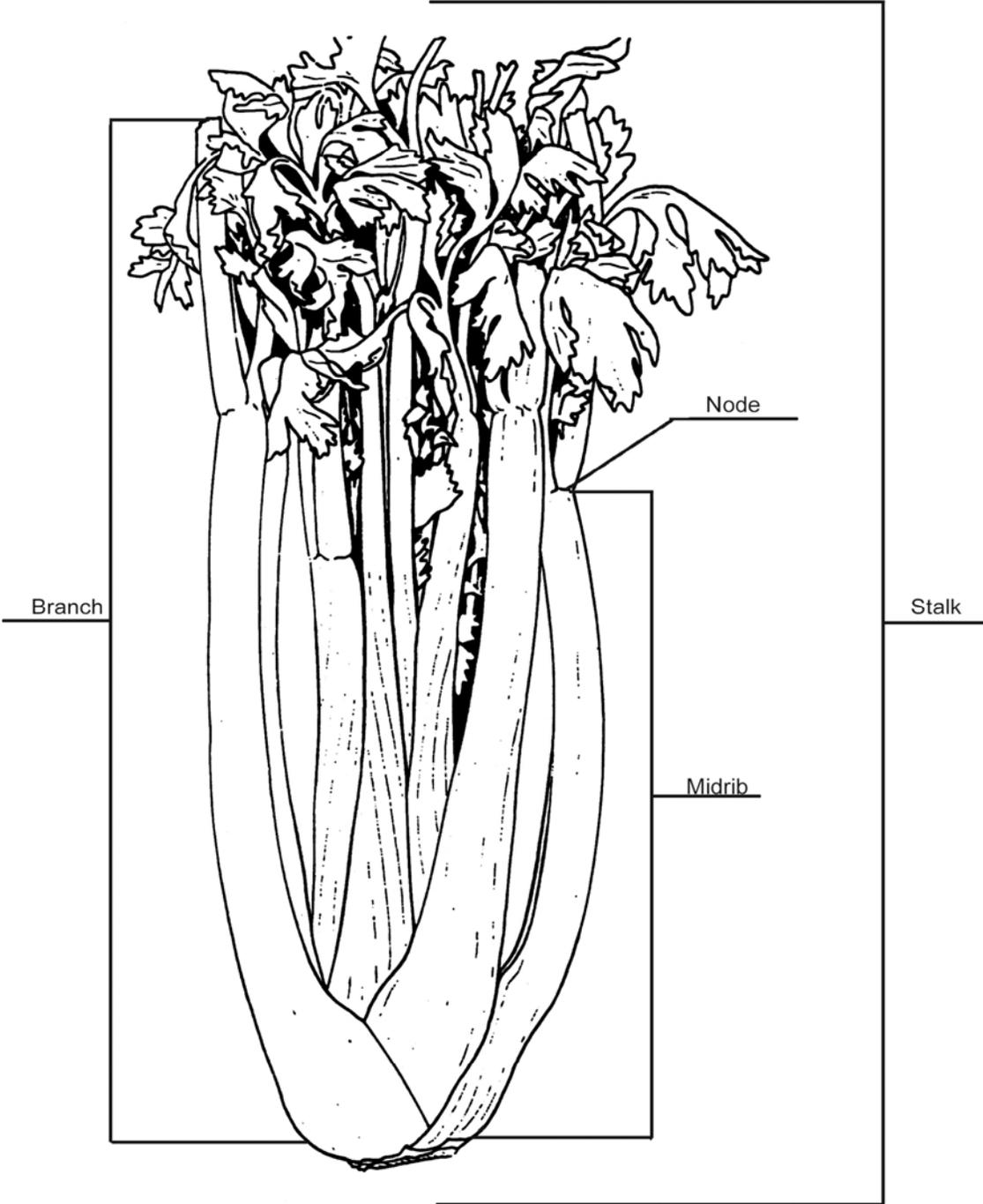
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# CELERY IDENTIFICATION CHART



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## **GENERAL**

Celery is available year round. There are two types of stalk celery, self-blanching or yellow, and green or Pascal celery. In North America, Pascal or green stalk celery is the most common.

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## **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.

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### **Size of Sample**

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

The entire contents of the carton shall be the sample. Celery frequently has the stalks (bunches) individually wrapped in film bags; all wrapping material must be removed to properly examine the celery.

Clipped Celery (Celery Hearts) packed 2 to 3 stalks (bunches) per film bag is considered to be a consumer package. The film bag in this case is the unit of inspection instead of the master container. The sample size will be the number of stalks (bunches) that are in each bag.

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### **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.

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# TOLERANCES AND APPLICATION OF TOLERANCES

§51.560 *U.S. Extra No. 1*, §51.561 *U.S. No. 1*, §51.562 *U.S. No. 2*...**(c)** In order to allow for variations incident to proper grading and handling, the following tolerances shall be permitted:

**(1) For defects.** 10 percent, by count, in any lot for stalks, which fail to meet the requirements of the grade, including therein not more than 2 percent for soft rot;

**(2) For off-length stalks.** 5 percent, by count, in any lot for stalks which fail to meet the minimum length required or specified; and,

**(3) For off-length midribs.** 5 percent, by count, in any lot for stalks which fail to meet the requirements as to average midrib length.

	<u>U.S. Extra No. 1, U.S. No. 1,</u> <u>U.S. No. 2</u>
Total defects	10%
Including soft rot	2%
Minimum length stalks	5%
Minimum average midrib length	5%

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## Application of Tolerances

§51.565 *Application of tolerances.* **(a)** The contents of individual packages in the lot, based on sample inspection, are subject to the following limitations: *Provided*, That the averages for the entire lot are within the tolerances specified:

**(1)** For packages which contain 20 specimens or more and a tolerance of 10 percent or more is provided, individual packages in any lot may contain not more than one and one-half times the tolerance specified. For packages which contain 20 specimens or more and a tolerance of less than 10 percent is provided, individual

packages may contain not more than double the tolerance specified except that at least one defective and one off-size specimen may be permitted in any package; and,

(2) For packages which contain less than 20 specimens, individual packages in any lot may contain not more than double the tolerance specified, except that at least one defective and one off-size specimen may be permitted in any package: *Provided*, That for packages which contain 6 specimens or less, individual packages in any lot are not restricted as to the percentage of defects: *And provided further*, That not more than one specimen which is affected by decay or otherwise seriously damaged and one off-size specimen may be permitted in any package.

**For packages which contain 20 or more specimens**

	<u><b>U.S. Extra No. 1, U.S. No. 1, U.S. No. 2</b></u>
Total defects	10% x 1-1/2 = <b>15%</b>
Including soft rot	2% x 2 = <b>4%</b>
Minimum length stalks	5% x 2 = <b>10%</b>
Minimum average midrib length	5% x 2 = <b>10%</b>

**For packages which contain less than 20 specimens**

	<u><b>U.S. Extra No. 1, U.S. No. 1, U.S. No. 2</b></u>
Total defects	10% x 2 = <b>20%</b>
Including soft rot	2% x 2 = <b>4%</b>
Minimum length stalks	5% x 2 = <b>10%</b>
Minimum average midrib length	5% x 2 = <b>10%</b>

## For packages which contain 6 specimens or less

No restriction as to the percentage of defects, except that not more than 1 specimen which is affected by decay or serious damage and one off-size specimen may be permitted in any package.

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## 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.

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### Product

The common name "Celery" shall be used to describe this commodity in the product heading. Type may be reported in conjunction with "Celery" or may be reported in the "Product/Variety" section on the shipping point inspection certificates or in the "Lot ID" section on market notesheet and certificate.

Celery that is clipped to 7 to 10 inches in length and packed 2 or 3 stalks (bunches) to a film bag in 12 and 18 count cartons commonly referred to as celery hearts by the industry, shall be reported as "Celery, clipped."

### Terms For Describing Celery

The following terms are used in describing celery:

**Stalk** means an individual plant consisting of branches, heart, and leaves.

**Branch** means the sub-division of a stalk that consists of the edible stem-like portion including the midrib and the tops or leaves.

**Midrib** is the portion of a branch between the point of attachment to the roots and the first node.

**Node** is the joint of the leaf stem to the main stem or branch.

**Bunch** means a number of stalks tied into a bundle.

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## **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.

Celery is usually packed and shipped in 24, 30, and 36 count wax cartons.

“Celery, clipped,” commonly referred to as celery hearts by the industry are typically clipped to 7 to 10 inches in length and are packed 2 or 3 stalks to a film bag in 12 and 18 count cartons.

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## **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.

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## **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 celery is grown.

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## CONDITION OF PACK

Celery is generally packed in cartons. The following terms shall be used to describe the tightness of the pack:

**Very tight** means a condition that is too tight for best results and in which stalks may become damaged or severely bruised.

**Tight** means that the containers are completely filled and so tightly packed that additional stalks cannot be included without damage to the contents.

**Fairly tight** means that the containers are apparently full, but additional stalks can be inserted without damage to the contents.

**Slack** means the container is not sufficiently filled to prevent the movement of the stalks. Whenever the term slack is used, it should be described in fractions of an inch or inches.

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## 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. The location in the lot and/or load must be specified in greater detail when additional temperatures are taken.

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## SIZE

The length of the stalk and the average midrib length shall be reported under the "Size" section of the scoresheet, and in the "Other" section of the FV-300 certificate, or the "Lot Description" section of an electronic FV-300 certificate.

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## Length of Stalks

**§51.579 "Length of stalk" means the distance from where the root is cut off to a point which represents the average length of the longest branches.**

**§51.560 U.S. Extra No. 1, §51.561 U.S. No. 1, and §51.562 U.S. No. 2...(b) Unless otherwise specified in connection with the grade, stalks shall be of such length as to extend from one side, end or bottom of the container to within 1-1/2 inches of the corresponding opposite side, end or top of the container. Such measurement shall not include the bulge. In any container when stalk length is specified, it shall be the minimum length in terms of whole inches of even number, as 12 inches, 14 inches, etc., in accordance with the facts.**

If the requirement for length specified in the standards is met, it will not be necessary to report the stalk length in connection with the grade. However, if this requirement is not met, the lot should be reported either failing to grade account under length stalks or as meeting a specified stalk length other than that normal to the container.

**Example:** U.S. No. 1, 14-inch stalks; or

**Example:** Fails to grade U.S. No. 1, 8-inch stalks account under length stalks.

If the applicant specifies a stalk length, it shall be reported in connection with the grade.

## Celery Hearts

Celery hearts are celery stalks that are clipped below the node and packaged in film bags containing from 2 to 3 bunches per bag. Celery hearts may be shipped in various size containers. There may be little relation between the stalk length and the size of the container. In such case the stalk length shall be specified in connection with the grade.

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## Average Midrib Length

**§51.577 "Average midrib length" means the average length of all the branches in the outer whorl measured from the point of attachment at the base to the first node.**

**§51.560 U.S. Extra No. 1...(a)** The average midrib length of the outer whorl of branches shall be not less than 7 inches.

**§51.561 U.S. No. 1...(a)** Unless otherwise specified, the average midrib length of the outer whorl of branches shall be not less than 6 inches.

**§51.562 U.S. No. 2...(a)** Unless otherwise specified, the average midrib length of the outer whorl of branches shall be not less than 4 inches.

<b>GRADE</b>	<b>AVERAGE MIDRIB LENGTH</b>
U.S. Extra No. 1	7 inches minimum average
U.S. No. 1	6 inches minimum average UOS*
U.S. No. 2	4 inches minimum average UOS*

\*UOS (unless otherwise specified)

Average midrib length is specified in the standards and must be determined when performing a quality and condition inspection.

When the midrib length is “otherwise specified” it must be reported in connection with the grade statement.

**Example:** U.S. No. 1, 4-inch midrib.

**Example:** Fails to grade U.S. No. 1, 4-inch midrib account under length midribs.

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### **Count of Stalks Per Container**

**§51.564 Requirements as to count. (a)** The number of stalks of celery in the container may be specified by numerical count or in terms of dozens or half-dozens. Variations from the number specified shall be permitted as follows: *Provided*, That the average for the lot is not less than the number specified:

<b>Specified number per individual package</b>	<b>VARIATIONS PERMITTED IN INDIVIDUAL PACKAGES</b>
<b>24 stalks or less</b>	<b>1 stalk variation.</b>
<b>25 to 50 stalks, inclusive</b>	<b>3 stalk variation.</b>
<b>51 to 70 stalks, inclusive</b>	<b>4 stalk variation.</b>
<b>More than 70 stalks</b>	<b>5 stalk variation.</b>

The count of stalks per container must be certified when the count is marked on the container or at applicants request. If a lot is found to conform to the requirements for count, it will not be necessary to make a statement in connection with the grade unless specifically requested to do so by the applicant, in which case a statement "Conforms to marked count" may be made. If an individual carton varies in count, either more or less, from the permitted variations, the carton must be reported as not conforming to count marked even though the entire lot would average within the counts marked. Use general terms to describe cartons that do not conform to marked count in relation to cartons that conform to marked count on the notesheet and certificate. For example: report in the "Other" section of the FV-300 certificate, or the "Lot Description" section of an electronic FV-300, as "Most cartons conform to marked count, many cartons 5 to 7 stalks more than marked count."

If the lot averages **less** than the marked count the lot fails to meet the requirements as to marked or specified count, and this fact must be reported in connection with the grade statement. If the lot averages **more** than the specified count per carton the lot would "conform to marked count."

**Example:** U.S. No. 1. Lot fails to meet count as marked.

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### **Offsize Specimens Which Are Also Defective**

It should be remembered that undersized stalks which are also defective may be scored three times; first for stalk length, second for midrib length, and third for grade defects. The grades have separate tolerances for each factor. Generally the percentage of off-size specimens that are also defective will be negligible, and will make no material difference in the grade certification. When the percentage of off-size specimens that are also defective amounts to 1% or more, the percentage of defective stalks which are also undersize must be reported. Report this information in the "Other"

section on market certificates and in the "Description of Product" section on shipping point certificates.

**Example:** 3% undersize included in 8% quality defects.

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## 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.

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### Bitterness (Q)

Celery, by nature, has a slight bitter taste. Though the bitterness has been bred out of celery over the years, celery with a decidedly bitter flavor may be encountered. Celery with an offensive bitter taste can be objectionable from an edible standpoint.

### Scoring Guide

Celery that has an offensively bitter taste shall be described as "bitter stalks" and scored against the total tolerance for the grade that is being applied.

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### Blackheart (C)

Blackheart is caused by a calcium deficiency generally resulting from a lack of water. It is first manifested by the margins of some of the heartleaves showing yellowish-brown, water soaked, translucent areas. In the more advanced stages many leaves, or the entire area of the heartleaves become affected. Later these areas become brown to black in color.

## Scoring Guide

\*\*\*\* Celery is required to be free from blackheart and any amount shall be scored as serious damage.

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### Blight (C)

Early and Late Blight are caused by two closely related, but different types of fungi. Celery grown in fields that have had blight in previous years, or from seed that has been infected with the fungi is susceptible to blight.

#### Early Blight

Early Blight appears as spots that are slate gray to tan in color with the outer edges darker. Generally only the leaf area is affected, rarely the branches. Early Blight can be spread in the field from infected plants to healthy ones by air or splashing water. Development of Early Blight is more favorable during periods with high temperatures and high humidity.

#### Scoring Guide

Score stalks as damage when the tops of more than one branch is slightly affected or when any midrib is more than slightly affected. Score as serious damage when the tops of more than two braches are slightly affected.

#### Late Blight

Late Blight is readily distinguished by the fact that the characteristic discolored spots are smaller and shiny black dots or pimples (pycnidia) occurring on the affected areas. The spots vary from dark green to brown in color. Development of Late Blight is more favorable during rainy, wet growing seasons.

#### Scoring Guide

Score stalks as damage when the tops of more than one branch are slightly affected or when any midrib is more than slightly affected. Score as serious damage when the tops of more than two branches are slightly affected.

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### Brown Stem (C)

Brown stem occurs as a browning and pitting of the tissues immediately beneath the epidermis of the outer leaf stalks.

## Scoring Guide

**§51.573 *Damage... (g) Disease: (1) Brown stem...when materially affecting more than 2 branches, or when the aggregate area exceeds two-thirds of a square inch on the branches;***

**§51.586 *Serious damage... (g) Disease: (1) Brown stem...when seriously affecting more than 4 branches, or when the aggregate area exceeds 1 square inch on the branches;***

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## Celery Mosaic (Q)

Celery mosaic is caused by plant viruses that are spread from plant to plant by feeding insects. Celery mosaic appears on the leaf stalks as brownish or buff-colored, sunken, translucent spots contrasting with the rest of the stalk. Celery mosaic may also cause the stalk to be stunted and/or otherwise deformed.

## Scoring Guide

Score stalks as damage when more than one square inch is affected on any branch or branches. Score as serious damage when more than 3 square inches is affected on any branch or branches.

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## Cleanness (Q)

**U.S. Extra No. 1** is required to be “Clean.”

**U.S. No. 1** is required to be “Free from damage caused by dirt.”

**U.S. No. 2** is required to be “Free from serious damage caused by dirt.”

**§51.570 “Clean” means that the stalk is practically free from dirt or other foreign material. Stalks shall be permitted to have a small amount of dirt on the inside of the branches or in the heart branches which cannot be removed by good commercial methods of washing.**

## Scoring Guide

**§51.573 *Damage... (e) Dirt when there is caked dirt on the stalk, or when dirt is present between the branches to the extent that the appearance is materially affected;***

**§51.586 *Serious damage...*(e) Dirt when dirt is badly caked on the stalk;**

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**Color of Midribs (Q)**

All of the celery grades require that the midribs shall be green color unless they are specified as “Fairly Well Blanched” or “Mixed Blanch.” If the midrib color of the stalk is not lighter than light green, the stalk shall be considered as meeting the color required of green celery. The following terms shall be used to describe the color of midribs:

**§51.574 “Green” means that the middle portions of the outer branches on the stalk are generally green to light green color.**

**§51.575 “Fairly well blanched” means that the midrib portions of the outer branches on the stalk are generally of a creamy white to pale green color.**

**§51.576 “Mixed blanch” consists of green and fairly well blanched stalks of celery in the same container.**

**Scoring Guide**

Score as damage when the stalks are lighter than light green, unless the lot is specified as “Fairly Well Blanched” or “Mixed Blanch.”

If certifying “Mixed Blanch” the midrib color shall be reported in general terms.

**Example:** Most celery green, some fairly well blanched.

The proportion of the cartons with the various stalk color shall be reported in general terms.

**Example:** Most cartons celery is green, some cartons mixed blanch.

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**Color of Tops or Leaves (C)**

Yellow leaves or tops, which frequently develop during the blanching process in the field, or in storage and transit, should not be considered as damage. The following terms shall be used to describe the color of the tops:

- **Green** means that the leaves have a good shade of green color.

- **Light Green** means that the leaves show a light shade of green color.
- **Turning Yellow** means that the leaves are showing some yellow.
- **Yellow** means that the leaves are yellow.

### Scoring Guide

Brown dead leaves shall be scored as damage when materially affecting the appearance of the stalk. Score as serious damage when seriously affecting the appearance of the stalk.

**Note:** Discoloration of the tops or leaves associated with early blight, late blight, or spotted wilt shall be scored using the scoring guide for that particular defect.

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### Compactness (Q)

Compactness describes the closeness of the stalks throughout the length of the branches in the stalk.

**U.S. Extra No. 1** requires branches to be compact.

**U.S. No. 1** requires branches to be fairly compact.

**U.S. No. 2** has no requirement for this factor.

**§51.572 “Compact” means that the branches on the stalk are fairly close together throughout most of their length.**

**§ 51.582 “Fairly compact” means that the branches on the stalk are reasonably close together throughout most of their length.**

### Scoring Guide

U.S. Extra No. 1 celery that does not meet the requirements of “compact” shall be reported as “not compact” and scored as damage. If branches of average length, at or near the first nodes, are approximately 4 times as wide as the widest portion of the stalk, measured at a point approximately 3 to 4 inches above the point of attachment of the branches to the root, the stalk shall be reported as “badly spread,” and scored as serious damage.

U.S. No. 1 celery that does not meet the requirements of “fairly compact” shall be reported as “not fairly compact” and scored as damage. If branches of average length, at or near the first nodes, are approximately 4 times as wide as the widest portion of the stalk, measured at a point approximately 3 to 4 inches above the point of attachment of

the branches to the root, the stalk shall be reported as “badly spread,” and scored as serious damage.

Refer to visual aids, Illustrations CEL 8 and CEL 9 located in the standards, for sketches illustrating compactness.

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### **Growth Cracks (Q)**

Growth cracks are vertical cracks generally occurring at the point of attachment of the branch to the butt of the stalk. Growth cracks are believed to be caused by very rapid growth of the celery.

#### **Scoring Guide**

**§51.573 *Damage...*(a) Growth cracks when more than 2 branches are affected by growth cracks which are over one-half inch in length, or when more than 6 branches have growth cracks;**

**§51.586 *Serious damage...*(a) Growth cracks when more than 4 branches are affected by growth cracks which are over one-half inch in length, or when more than 8 branches have growth cracks;**

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### **Horizontal Cracks (Q)**

Horizontal cracks are often found on the midribs of branches. These cracks are usually small and cause no waste. However, they can also be large or numerous enough to affect appearance.

#### **Scoring Guide**

**§51.573 *Damage...*(b) Horizontal cracks when more than 3 branches have horizontal cracks which are over one-half inch in length, or when more than 6 branches have horizontal cracks;**

**§51.586 *Serious damage...*(b) Horizontal cracks when more than 5 branches have horizontal cracks which are over one-half inch in length, or when more than 8 branches have horizontal cracks;**

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## Cracked Stem (Q)

Cracked stem can appear on either the inside or outside part of the branch as a cracked area that either has a corked over appearance, which generally occurs on the inside of the branch, or as small cracks between ribs that appear with the tissue curling back and turning brown, which only occurs on the outside of the branch.

### Scoring Guide

**§51.573 *Damage... (g) Disease: (1)...cracked stem...when materially affecting more than 2 branches, or when the aggregate area exceeds two-thirds of a square inch on the branches;***

**§51.586 *Serious damage... (g) Disease: (1)...cracked stem...when seriously affecting more than 4 branches, or when the aggregate area exceeds 1 square inch on the branches;***

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## Cracked Branches (Q)

Cracks on the branches of the stalk, either lengthwise or crosswise, and generally occurring on the inner side of the midrib, may damage the appearance of the stalk. This condition is believed to be due to an improper supply of some element in the soil such as boron or some other mineral.

### Scoring Guide

The number of cracks, their location, depth, and the area affected, as well as the number of branches affected must be considered in determining when a stalk is damaged or seriously damaged. Score as damage when more than 2 branches show material cracking. Score as serious damage when more than 4 branches are seriously affected.

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## Crater Blotch (Q)

Crater Blotch first appears as small, soft, watery, straw colored to brownish spots on the inside of the branches. Later the affected tissues dry out and collapse resulting in concave, crater-like depressions, or sunken pits that are dark brown in color with usually sharply defined edges.

## Scoring Guide

**§51.573 *Damage... (g) Disease: (1)...* crater blotch when materially affecting more than 2 branches, or when the aggregate area exceeds two-thirds of a square inch on the branches;**

**§51.586 *Serious damage... (g) Disease: (1)...* crater blotch when seriously affecting more than 4 branches, or when the aggregate area exceeds 1 square inch on the branches;**

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### Development of Stalks (Q)

Development of stalks refers to the width and thickness of the branches in relation to the length of the midribs and type of celery and also as to heart formation.

**U.S. Extra No. 1** is required to be “Well developed.”

**U.S. No. 1** is required to be “Fairly well developed.”

**U.S. No. 2** is required to be “Reasonably well developed.”

**§51.568 “Well developed” means that the branches are of good width and thickness in relation to the length of midribs and type of celery and that the heart branches are of reasonable number, length and stockiness.**

**§51.580 “Fairly well developed” means that the branches are of fairly good width and thickness in relation to the length of midribs and type of celery and that there is not excessive open space in the center of the stalk.**

Fairly well developed require no heart branches provided the inner branches are close together.

**§51.583 “Reasonably well developed” means that the branches are of reasonable width and thickness in relation to the length of midribs and type of celery.**

Reasonably well developed require no heart formation and open space may occur at the center of the stalk.

## Scoring Guide

U.S. Extra No. 1 celery that fails to meet the requirements of “Well developed” shall be scored as “Not well developed” against the total tolerance for the grade.

U.S. No. 1 celery that fails to meet the requirements of “Fairly well developed” shall be scored as “Not fairly well developed” against the total tolerance for the grade.

U.S. No. 2 celery that fails to meet the requirements of “Reasonably well developed” shall be scored as “Not reasonably well developed” against the total tolerance for the grade.

Refer to visual aids, Illustrations CEL 6 and CEL 7 located in the standards, for sketches illustrating development.

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## Discoloration (Q)

Discoloration occurs as lines on the vascular ridges on the outer side of the branches and as blotched or solid areas on the inner side. It ranges from barely visible to a dark shade of brown. Only the distinctly discolored areas and lines are to be considered.

## Scoring Guide

**§51.573 *Damage...*(2) Discoloration when each of more than 2 branches or 1/4 of the branches of the stalk, whichever is less, has more than 3 distinct hair-like lines more than 3 inches long occurring on the outer side of the branch or an aggregate area of more than 1/4 by 1 inch of blotch or solid type discoloration occurring on the inner side;**

**§51.586 *Serious damage...*(2) Discoloration when each of more than 5 branches or 1/2 of the branches of the stalk, whichever is less, has more than 3 distinct hair-like lines more than 3 inches long occurring on the outer side of the branch or an aggregate area of more than 1/4 by 1 inch of blotch or solid type discoloration occurring on the inner side;**

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## Discoloration of Butt (Q)

Butt discoloration appears as a dark grayish brown to black area in the center of the trimmed end of the butt and often will extend up towards the crown a short distance. This discoloration is due to absorption of soil stain in excessively wet growing conditions.

## **Scoring Guide**

Butt discoloration rarely affects the shipping or edible quality of the celery. It shall be scored as damage when the discoloration seriously affects the appearance of the stalk.

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## **Doubles (Q)**

Doubles are two separate stalks of celery that are still connected at the base.

## **Scoring Guide**

Doubles are to be scored as damage when they are not separated and when the appearance of the stalk is materially affected; or, if separated and either of the stalks is badly curved. Score as serious damage if the inner branches are not fairly well protected.

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## **Field Freezing (Blistering and Peeling) (Q)**

The injury caused by field freezing may vary from slight to severe. Severe freezing may cause the branches to have a dark, discolored, water-soaked appearance or to become pithy. Freezing damage of a lesser degree may appear as a blistering of the epidermis with no dark discoloration.

## **Scoring Guide**

Score as damage when the midribs of more than 2 branches are severely blistered or the midrib of more than 1 branch is materially discolored and describe the defect as blistering and peeling and/or discolored according to the facts. Score as serious damage when the midribs of more than 4 branches show severe blistering or the midribs of more than 2 branches are materially discolored.

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## **Freezing and Freezing Injury (C)**

The term “frozen” should only be used when ice crystals are present. Frozen celery will be “dull, glassy, and translucent” in comparison to unaffected celery.

“Freezing injury” is the term that should be used when it is evident that the celery has been frozen, but are not in a frozen condition at the time of inspection. The affected celery may be flabby, watery, and/or translucent.

Use the following procedures when reporting freezing or freezing injury:

- Record pulp temperatures taken at various locations.

- Determine and record extent of the injury in the load.
- Determine and record extent of the injury in the containers.
- Determine and record the degree to which individual specimens are affected.
- Describe the pattern of freezing or freezing injury in clear, concise terms.

When the location of injury indicates where or when the freezing occurred, this is to be stated. For example: “Freezing injury so located as to indicate freezing occurred after packing but not in present location.”

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### **Freshness (C)**

Celery is generally fresh and crisp unless it has been left in a warm place for an extended period, or it has been in storage for an excessive length of time.

The U.S. Extra No. 1 and U.S. No. 1 grades are required to be free from damage by wilting.

The U.S. No. 2 grade is required to be free from serious damage by wilting.

### **Scoring guide**

Celery that has lost freshness to the point of becoming wilted shall be reported as “wilted,” and scored as damage. Celery that has become flabby shall be reported as “flabby,” and scored as serious damage.

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### **Hollow Crown (Q)**

Hollow crown occurs as a cavity in the main root and is quite prevalent in fields where water has stood for some time following heavy rains. The walls of the cavity are usually calloused and brown like a growth crack.

### **Scoring Guide**

Score as damage when the cavity is large or extends into the heart area of the stalk. These cavities should be checked carefully to determine if soft rot is also present. If soft rot is found, it should be scored against the tolerance for soft rot.

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### **Insects and Worms (Q or C)**

Various types of insects can affect celery in a variety of ways. Different types of worms may feed on the celery by chewing or burrowing into the branches, causing the

celery to have an undesirable appearance. Aphids may also affect the top and heart leaves of the celery causing the appearance to be affected.

**Aphids:** They do not appear on the stalks as do worms or chew on the midribs. However, when present in material amounts, they are objectionable. When aphids are a factor, it is especially important the inspection be made where ample light is present.

**Leaf Miners:** Small yellowish larvae that mine just beneath the epidermis, producing channels of dead tissue that show up as white trails, tunnels, or blisters on the leaves, leaf petioles, and/or midribs. On the midribs it is seen on both the inner and outer surfaces. Leaves have a blistered appearance.

**Worms:** The most common are the tier worm and the cutworm. The tier worm will typically affect the upper branches and is indicated by the presence of small webs spun among the leaves. The cutworm will typically affect the lower branches. To detect the cutworm it is usually necessary to spread the branches apart.

### Scoring Guide

**§51.573 *Damage... (h)* Insects when worms are present, or when insect injury occurs on heart branches, or when insect injury affects the midrib portion of more than 2 branches, or when injury on other portions materially affects the appearance of the stalk;**

**§51.586 *Serious damage... (h)* Insects when worms are present, or when insect injury affects the midrib portion of more than 4 branches, or when injury on other portions seriously affects the appearance of the stalk;**

Live insects or worms shall be reported as condition; if dead, report as quality. If you have both live and dead insects or worms, report all as condition.

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### **Mechanical Injury (Crushed or Broken) (Q or C)**

Mechanical injury generally refers to crushed, broken, or bruised branches caused by rough handling in the packing operations. It may also be caused by the root being cut off too close leaving the branches without support.

### Scoring Guide

**§51.573 *Damage... (i)* Mechanical injury when the root has been cut off too closely leaving the branches without support; when more than 2 branches are materially scuffed or bruised; when the branches have been broken above the first node to an extent which materially affects the appearance; or when more than 2 branches are**

broken below the first node except that all branches may be cut below the first node provided the stalk is of the length specified.

**§51.586 *Serious damage...*(i)** Mechanical injury when the root has been cut off too closely leaving the branches without support; when more than 4 branches are materially scuffed or bruised; when the branches have been broken above the first node to an extent which seriously affects the appearance; or when more than 4 branches are broken below the first node except all branches may be cut below the first node provided the stalk is of the length specified.

**Note:** Freshly broken, crushed, or bruised stalks shall be scored as a condition factor en route or at destination.

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### **Pithy Branches (Q or C)**

A branch that is pithy cannot be determined externally; the branches must be cut or broken in order to determine the degree of pithiness on the inside of the branch. Branches also may be soft and collapse when squeezed. Pithy branches have an open internal texture with distinct air spaces. Pithiness may be caused by a number of factors; including freezing in the field, and often develops very rapidly after the celery has thawed out.

### **Scoring Guide**

**§51.573 *Damage...*(c)** Pithy branches when more than 2 are pithy in that portion of the midrib between a point 1-1/2 inches above the point of attachment to the base and the first node, or between a point 1-1/2 inches below the first node and the point of attachment to the base, or when pith occurs at both ends of the midrib and more than a total of 1-1/2 inches is affected: *Provided*, That stalks having 6 outer branches or less shall have not more than one-third of the outer branches affected by pith as described above;

**§51.586 *Serious damage...*(c)** Pithy branches when more than 4 are pithy in that portion of the midrib between a point 1-1/2 inches above the point of attachment to the base and the first node, or between a point 1-1/2 inches below the first node and the point of attachment to the base, or when pith occurs at both ends of the midrib and more than a total of 1-1/2 inches is affected: *Provided*, That stalks having 6 outer branches or less shall have not more than one-half of the outer branches affected by pith as described above;

Pithy branches are generally scored as a condition factor; however, they may be considered a quality factor if there is reason to believe that the pithiness did not develop after packing.

Refer to visual aid, Illustration of Definition of Pithy Branch, located in the standards.

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### **Scarred Branches (Q)**

Scarred branches may affect the appearance of the stalk. The number of scars and their location, texture, and the area affected, as well as the number of branches affected must be considered in determining when a stalk is damaged or seriously damaged.

#### **Scoring Guide**

Score scarring as damage when more than 2 branches show material scarring. Score as serious damage when more than 4 branches are seriously affected.

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### **Scuffed and Discolored (C)**

Scuffing of branches followed by discoloration sometimes occurs due to rough handling. It appears as flattened, discolored, or bruised areas on the outer midribs as a result of rubbing or pressure. This condition is often not readily apparent at time of packing, but may later show discoloration ranging from gray to black.

#### **Scoring Guide**

Score as damage when more than 2 branches are materially scuffed or bruised so that the appearance of the stalk is damaged. Score as serious damage when seriously affecting the appearance of the stalk.

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### **Seedstems (Q)**

In normal stalks of celery in which seedstems have not developed, the branches all originate at one point on the base of the plant. When seedstems develop, the branches have a tendency to grow out of the center at points above the base; this condition is apparent only when the seedstems are well advanced.

The length of the seedstem shall be measured from the point of attachment of outer branches at the base of the stalk to the top of the actual seedstem exclusive of any leaves or leafstems attached to the top of the seedstems.

## Scoring Guide

**§51.573 *Damage...*(d) Seedstems when the length of seedstem exceeds twice the diameter of the stalk or 8 inches in length (see §§51.587 and 51.588);**

**§51.586 *Serious damage...*(d) Seedstems when the length of seedstem exceeds 3 times the diameter of the stalk (see §§51.587 and 51.588);**

Refer to visual aids, photographs CEL-1-Ident and CEL-2-Ident on seedstems.

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## Shape of Stalks (Q)

**U.S. Extra No. 1** is required to be “Well formed.”

**U.S. No. 1** is required to be “Fairly well formed.”

**U.S. No. 2** is required to be “Reasonably well formed.”

**§51.569 “Well formed” means that the branches are fairly straight and not more than slightly curved or twisted.**

**§51.581 “Fairly well formed” means that the branches are reasonably straight and not more than moderately curved or twisted.**

**§51.584 “Reasonably well formed” means that the branches are not crooked, curved or twisted to the extent that the appearance of the stalk is seriously affected.**

## Scoring Guide

U.S. Extra No. 1 celery that does not meet the requirements of “well formed” shall be reported as “not well formed,” and scored against the total tolerance for the grade.

U.S. No. 1 celery that does not meet the requirements of “fairly well formed” shall be reported as “not fairly well formed,” and scored against the total tolerance for the grade.

U.S. No. 2 celery that does not meet the requirements of “reasonably well formed” shall be reported as “not reasonably well formed,” and scored against the total tolerance for the grade.

Refer to visual aids, Illustrations CEL 1 to CEL 5 located in the standards, for sketches illustrating form.

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### **Similar Varietal Characteristics (Q)**

All three grades require celery to be of “Similar varietal characteristics.”

**§51.567 “Similar varietal characteristics” means that the stalks in any package have the same general appearance and character of growth.**

Celery of distinctly different color such as Pascal (green) and self-blanching (yellow) should not be mixed and neither should celery with different types of growth such as the short, flaring type and the long, compact straight type of stalks.

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### **Spotted Wilt (Q)**

Spotted wilt is caused by a virus and occurs as necrotic areas on the midribs and as yellow, rust colored or dark brown spots on the leaves. Spotted wilt is spread by infected thrips that feed on celery at the field level.

### **Scoring Guide**

Score as damage when materially affecting the appearance of the tops, or when the aggregate area affected on the midribs exceeds 2/3 of a square inch. Score as serious damage when seriously affecting the appearance of the tops, or when the aggregate area affecting the midribs exceeds one square inch.

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### **Suckers (Q)**

Suckers are slender branches growing in between well-developed branches.

### **Scoring Guide**

When suckers are so numerous as to materially affect the appearance, they shall be scored as damage. Stalks will rarely be seriously damaged by suckers; however, should the suckers be large and very numerous they shall be scored as serious damage.

Refer to visual aid, photographs CEL-1-Ident suckers.

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### **Trimming (Q)**

**U.S. Extra No. 1 and U.S. No. 1** are required to be “Well trimmed.”

**U.S. No. 2** is required to be “Fairly well trimmed.”

**§51.571 “Well trimmed”** means that not more than 2 relatively thin, short or spindly, or coarse and fibrous outer branches remain; that the main root has been cut off so as not to extend more than 1-1/2 inches below the point of attachment of the lowest outer branch; that secondary rootlets are not of such number or length as to materially affect the appearance of the stalk; and, that the appearance is not materially affected by the presence of discolored leaves or by excessive removal of leaves or portions of leaves.

**§51.585 “Fairly well trimmed”** means that the main root has been cut off so that it does not extend more than 3 inches below the point of attachment of the lowest outer branch, and that secondary rootlets are not of such number or length as to seriously affect the appearance of the stalk.

### **Scoring Guide**

U.S. Extra No. 1 and U.S. No. 1 celery that fails to meet the requirements of “well trimmed” shall be reported as “not well trimmed,” and scored against the total tolerance for the grade.

U.S. No. 2 celery that fails to meet the requirements of “fairly well trimmed” shall be reported as “not fairly well trimmed,” and scored against the total tolerance for the grade.

Refer to visual aid, Illustration CEL 10 located in the standards, for a sketch illustrating trimming.

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### **Soft Rot (C)**

There are several types of soft rot that affect celery. The most common types are Watery Soft Rot, Bacterial Soft Rot, Gray Mold Rot and Phoma Rot. Soft rot may be found in any part of the celery stalk but is most commonly found in the midribs and tops. All soft rot is scored against the 2% tolerance for soft rot regardless of where it is found in the stalk. It is often found in the hearts following blackheart or in the leaves or leaf stems. The type of soft rot is not to be reported on the certificate. However, when soft rot is in excess of the tolerance, report the degree and advancement in general terms as: early, moderate, or advanced stages.

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# APPENDIX I -- U. S. GRADE STANDARDS

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## United States Standards For Grades Of Celery<sup>1</sup>

Effective April 7, 1959

### GRADES

51.560 U.S. Extra No. 1.

51.561 U.S. No. 1.

51.562 U.S. No. 2.

### UNCLASSIFIED

51.563 Unclassified.

### COUNT

51.564 Requirements as to count.

### APPLICATION OF TOLERANCES

51.565 Application of tolerances.

### DEFINITIONS

51.566 Stalk.

51.567 Similar varietal characteristics.

51.568 Well developed.

51.569 Well formed.

51.570 Clean.

51.571 Well trimmed.

51.572 Compact.

51.573 Damage.

51.574 Green.

51.575 Fairly well blanched.

51.576 Mixed blanch.

51.577 Average midrib length.

51.578 Branch.

51.579 Length of stalk.

51.580 Fairly well developed.

51.581 Fairly well formed.

51.582 Fairly compact.

51.583 Reasonably well developed.

51.584 Reasonably well formed.

51.585 Fairly well trimmed.

51.586 Serious damage.

51.587 Diameter.

51.588 Length of seedstem.

### GRADES

#### §51.560 U.S. Extra No. 1.

"U.S. Extra No. 1" consists of stalks of celery of similar varietal characteristics which are well developed, well formed, clean, well trimmed, compact, and which are free from blackheart, brown stem, soft rot, doubles and free from damage caused by freezing, growth cracks, horizontal cracks, pithy branches, seedstems, suckers, wilting, blight, other disease, insects or mechanical or other means. Stalks shall be green unless specified as fairly well blanched, or mixed blanch.

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<sup>1</sup>Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug and Cosmetic Act, or with applicable State laws and regulations.

- (a) The average midrib length of the outer whorl of branches shall be not less than 7 inches.
- (b) Unless otherwise specified in connection with the grade, stalks shall be of such length as to extend from one side, end or bottom of the container to within 1-1/2 inches of the corresponding opposite side, end or top of the container. Such measurement shall not include the bulge. In any container when stalk length is specified, it shall be the minimum length in terms of whole inches of even number, as 12 inches, 14 inches, etc., in accordance with the facts.
- (c) In order to allow for variations incident to proper grading and handling, the following tolerances shall be permitted:
- (1) **For defects.** 10 percent, by count, in any lot for stalks which fail to meet the requirements of the grade, including therein not more than 2 percent for soft rot;
- (2) **For off-length stalks.** 5 percent, by count, in any lot for stalks which fail to meet the minimum length required or specified; and,
- (3) **For off-length midribs.** 5 percent, by count, in any lot for stalks which fail to meet the requirements as to average midrib length.

**§51.561 U.S. No. 1.**

“U.S. No. 1” consists of stalks of celery of similar varietal characteristics which are fairly well developed, fairly well formed, well trimmed, fairly compact, and which are free from blackheart and soft rot and free from damage caused by freezing, growth cracks, horizontal cracks, pithy branches, seedstems, suckers, dirt, doubles, wilting, blight, other disease, insects or mechanical or other means. Stalks shall be green unless specified as fairly well blanched, or mixed blanch.

- (a) Unless otherwise specified, the average midrib length of the outer whorl of branches shall be not less than 6 inches.
- (b) Unless otherwise specified in connection with the grade, stalks shall be of such length as to extend from one side, end or bottom of the container to within 1-1/2 inches of the corresponding opposite side, end or top of the container. Such measurement shall not include the bulge. In any container when stalk length is specified, it shall be the minimum length in terms of whole inches of even number, as 12 inches, 14 inches, etc., in accordance with the facts.
- (c) In order to allow for variations incident to proper grading and handling, the following tolerances shall be permitted:
- (1) **For defects.** 10 percent, by count, in any lot for stalks, which fail to meet the requirements of the grade, including therein not more than 2 percent for soft rot;
- (2) **For off-length stalks.** 5 percent, by count, in any lot for stalks which fail to meet the minimum length required or specified; and,
- (3) **For off-length midribs.** 5 percent, by count, in any lot for stalks which fail to meet the requirements as to average midrib length.

**§51.562 U.S. No. 2.**

“U.S. No. 2” consists of stalks of celery of similar varietal characteristics which are reasonably well developed, reasonably well formed, fairly well trimmed and are free from blackheart and soft rot and free from serious damage caused by freezing, growth cracks, horizontal cracks, pithy branches, seedstems, dirt, doubles, wilting, blight, other disease, insects or mechanical or other means. Stalks shall be green unless specified as fairly well blanched, or mixed blanch.

- (a) Unless otherwise specified, the average midrib length of the outer whorl of branches shall be not less than 4 inches.
- (b) Unless otherwise specified in connection with the grade, stalks shall be of such length as to extend from one side, end or bottom of the container to within 1-1/2 inches of the corresponding opposite side, end or top of the container. Such measurement shall not include the bulge. In any container when stalk length is specified, it shall be the minimum length in terms of whole inches of even number, as 12 inches, 14 inches, etc., in accordance with the facts.
- (c) In order to allow for variations incident to proper grading and handling, the following tolerances shall be permitted:
- (1) **For defects.** 10 percent, by count, in any lot for stalks, which fail to meet the requirements of the grade, including therein not more than 2 percent for soft rot;
- (2) **For off-length stalks.** 5 percent, by count, in any lot for stalks which fail to meet the minimum length required or specified; and,
- (3) **For off-length midribs.** 5 percent, by count, in any lot for stalks which fail to meet the requirements as to average midrib length.

**UNCLASSIFIED**

**§51.563 Unclassified.**

“Unclassified” consists of stalks of celery which have not been classified in accordance with any of the foregoing grades. The term “unclassified” is not a grade within the meaning of these standards but is provided as a designation to show that no grade has been applied to the lot.

**COUNT**

**§51.564 Requirements as to count.**

(a) The number of stalks of celery in the container may be specified by numerical count or in terms of dozens or half-dozens. Variations from the number specified shall be permitted as follows:

**Provided**, that the average for the lot is not less than the number specified:

<b>Specified number per package:</b>	<b>Variations Permitted in individual packages</b>
24 stalks or less	1 stalk variation.
25 to 50 stalks, inclusive	3 stalk variation.
51 to 70 stalks, inclusive	4 stalk variation.
More than 70 stalks	5 stalk variation.

**APPLICATION OF TOLERANCES**

**§51.565 Application of tolerances.**

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

(1) For packages which contain 20 specimens or more and a tolerance of 10 percent or more is provided, individual packages in any lot may contain not more than one and one-half times the tolerance specified.

For packages which contain 20 specimens or more and a tolerance of less than 10 percent is provided, individual packages may contain not more than double the tolerance specified except that at least one defective and one off-size specimen may be permitted in any package; and,

(2) For packages which contain less than 20 specimens, individual packages in any lot may contain not more than double the tolerance specified, except that at least one defective and one off-size specimen may be permitted in any package: **Provided**, That for packages which contain 6 specimens or less, individual packages in any lot are not restricted as to the percentage of defects: **And provided further**, That not more than one specimen which is affected by decay or otherwise seriously damaged and one off-size specimen may be permitted in any package.

**DEFINITIONS**

**§51.566 Stalk.**

“Stalk” means an individual plant.

**§51.567 Similar varietal characteristics.**

“Similar varietal characteristics” means that the stalks in any package have the same general appearance and character of growth.

**§51.568 Well developed.**

“Well developed” means that the branches are of good width and thickness in relation to the length of midribs and type of celery and that the heart branches are of reasonable number, length and stockiness.

**§51.569 Well formed.**

“Well formed” means that the branches are fairly straight and not more than slightly curved or twisted.

**§51.570 Clean.**

“Clean” means that the stalk is practically free from dirt or other foreign material. Stalks shall be permitted to have a small amount of dirt on the inside of the branches or in the heart branches which cannot be removed by good commercial methods of washing.

**§51.571 Well trimmed.**

“Well trimmed” means that not more than 2 relatively thin, short or spindly, or coarse and fibrous outer branches remain; that the main root has been cut off so as not to extend more than 1-1/2 inches below the point of attachment of the lowest outer branch; that secondary rootlets are not of such number or length as to materially affect the appearance of the stalk; and, that the appearance is not materially affected by the presence of discolored leaves or by excessive removal of leaves or portions of leaves.

**§51.572 Compact.**

“Compact” means that the branches on the stalk are fairly close together throughout most of their length.

**§51.573 Damage.**

“Damage,” unless otherwise specifically defined in this section, means any defect which materially affects the appearance, or the edible or shipping quality of the celery stalk or the general appearance of the stalks in the container. Any one of the following defects, or any combination of defects the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as damage:

(a) Growth cracks when more than 2 branches are affected by growth cracks which are over one-half inch in length, or when more than 6 branches have growth cracks;

(b) Horizontal cracks when more than 3 branches have horizontal cracks which are over one-half inch in length, or when more than 6 branches have horizontal cracks;

(c) Pithy branches when more than 2 are pithy in that portion of the midrib between a point 1-1/2 inches above the point of attachment to the base and the first node, or between a point 1-1/2 inches below the first node and the point of attachment to the base, or when pith occurs at both ends of the midrib and more than a total of 1-1/2 inches is affected: **Provided**, That stalks having 6 outer branches or less shall have not more than one-third of the outer branches affected by pith as described above;

(d) Seedstems when the length of seedstem exceeds twice the diameter of the stalk or 8 inches in length (see §§51.587 and 51.588);

(e) Dirt when there is caked dirt on the stalk, or when dirt is present between the branches to the extent that the appearance is materially affected;

(f) Doubles when not separated and the appearance is materially affected, or when separated and either of the stalks is badly curved;

(g) Disease: (1) Brown stem, cracked stem and crater blotch when materially affecting more than 2 branches, or when the aggregate area exceeds two-thirds of a square inch on the branches; and,

(2) Discoloration when each of more than 2 branches or 1/4 of the branches of the stalk, whichever is less, has more than 3 distinct hair-like lines more than 3 inches long occurring on the outer side of the branch or an aggregate area of more than 1/4 by 1 inch of blotch or solid type discoloration occurring on the inner side;

(h) Insects when worms are present, or when insect injury occurs on heart branches, or when insect injury affects the midrib portion of more than 2 branches, or when injury on other portions materially affects the appearance of the stalk; and,

(i) Mechanical injury when the root has been cut off too closely leaving the branches without support; when more than 2 branches are materially scuffed or bruised; when the branches have been broken above the first node to an extent which materially affects the appearance; or when more than 2 branches are broken below the first node except that all branches may be cut below the first node provided the stalk is of the length specified.

**§51.574 Green.**

“Green” means that the middle portions of the outer branches on the stalk are generally green to light green color.

**§51.575 Fairly well blanched.**

“Fairly well blanched” means that the midrib portions of the outer branches on the stalk are generally of a creamy white to pale green color.

**§51.576 Mixed blanch.**

“Mixed blanch” consists of green and fairly well blanched stalks of celery in the same container.

**§51.577 Average midrib length.**

“Average midrib length” means the average length of all the branches in the outer whorl measured from the point of attachment at the base to the first node.

**§51.578 Branch.**

“Branch” means the leaf of a stalk and consists of the edible stem-like portion and the tops or leaf blades.

**§51.579 Length of stalk.**

“Length of stalk” means the distance from where the root is cut off to a point which represents the average length of the longest branches.

**§51.580 Fairly well developed.**

“Fairly well developed” means that the branches are of fairly good width and thickness in relation to the length of midribs and type of celery and that there is not excessive open space in the center of the stalk.

**§51.581 Fairly well formed.**

"Fairly well formed" means that the branches are reasonably straight and not more than moderately curved or twisted.

**§51.582 Fairly compact.**

"Fairly compact" means that the branches on the stalk are reasonably close together throughout most of their length.

**§51.583 Reasonably well developed.**

"Reasonably well developed" means that the branches are of reasonable width and thickness in relation to the length of midribs and type of celery.

**§51.584 Reasonably well formed.**

"Reasonably well formed" means that the branches are not crooked, curved or twisted to the extent that the appearance of the stalk is seriously affected.

**§51.585 Fairly well trimmed.**

"Fairly well trimmed" means that the main root has been cut off so that it does not extend more than 3 inches below the point of attachment of the lowest outer branch, and that secondary rootlets are not of such number or length as to seriously affect the appearance of the stalk.

**§51.586 Serious damage.**

"Serious damage," unless otherwise specifically defined in this section, means any defect which seriously affects the appearance, or the edible or shipping quality of the celery stalk or the general appearance of the stalks in the container. Any one of the following defects, or any combination of defects the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as serious damage:

- (a) Growth cracks when more than 4 branches are affected by growth cracks which are over one-half inch in length, or when more than 8 branches have growth cracks;
- (b) Horizontal cracks when more than 5 branches have horizontal cracks which are over one-half inch in length, or when more than 8 branches have horizontal cracks;
- (c) Pithy branches when more than 4 are pithy in that portion of the midrib between a point 1-1/2 inches above the point of attachment to the base and the first node, or between a point 1-1/2 inches below the first node and the point of attachment to the base, or when pith occurs at both ends of the midrib and more than a total of 1-1/2 inches is affected: **Provided**, That stalks having 6 outer branches or less shall have not more than one-half of the outer branches affected by pith as described above;
- (d) Seedstems when the length of seedstem exceeds 3 times the diameter of the stalk (see §§51.587 and 51.588);
- (e) Dirt when dirt is badly caked on the stalk;
- (f) Doubles when the inner branches are not fairly well protected;
- (g) Disease: (1) Brown stem, cracked stem and crater blotch when seriously affecting more than 4 branches, or when the aggregate area exceeds 1 square inch on the branches; and,  
(2) Discoloration when each of more than 5 branches or 1/2 of the branches of the stalk, whichever is less, has more than 3 distinct hair-like lines more than 3 inches long occurring on the outer side of the branch or an aggregate area of more than 1/4 by 1 inch of blotch or solid type discoloration occurring on the inner side;
- (h) Insects when worms are present, or when insect injury affects the midrib portion of more than 4 branches, or when injury on other portions seriously affects the appearance of the stalk; and,
- (i) Mechanical injury when the root has been cut off too closely leaving the branches without support; when more than 4 branches are materially scuffed or bruised; when the branches have been broken above the first node to an extent which seriously affects the appearance; or when more than 4 branches are broken below the first node except all branches may be cut below the first node provided the stalk is of the length specified.

**§51.587 Diameter.**

"Diameter" means the greatest dimension of the stalk measured at a point 2 inches above the point of attachment of the lowest outer branch to the base.

**§51.588 Length of seedstem.**

"Length of seedstem" means the distance from the base of the outer branches of the stalk to the top of the actual seedstem, exclusive of any leaves or leafstems attached to the top of the seedstem.



WELL FORMED  
LOWER LIMIT "BOWING"  
U.S. EXTRA NO. 1

Illustration CEL 1



FAIRLY WELL FORMED  
LOWER LIMIT "BOWING"  
U.S. NO. 1

Illustration CEL 2



WELL FORMED  
LOWER LIMIT "TWISTING"  
U.S. EXTRA NO. 1

Illustration CEL 3



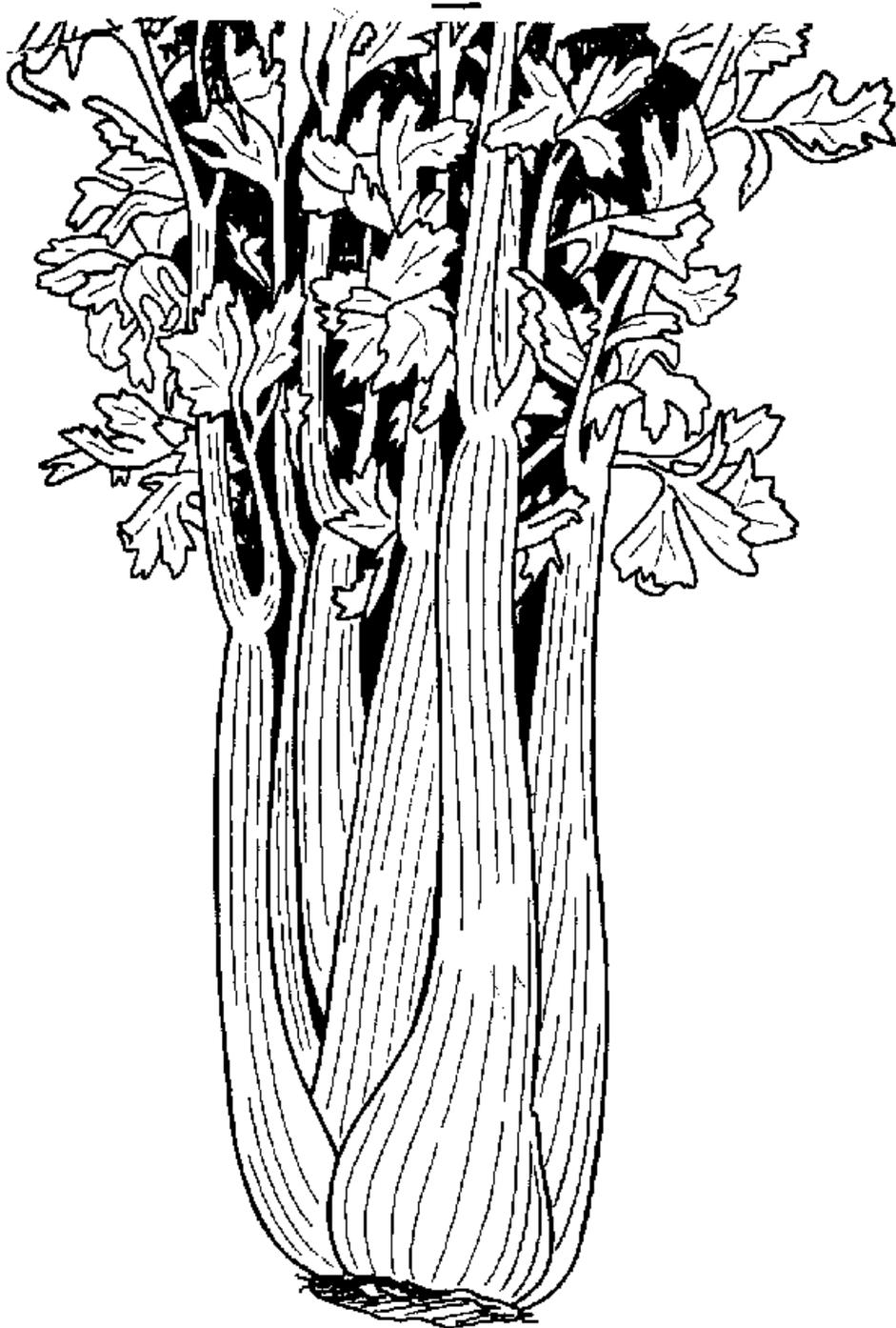
WELL FORMED  
LOWER LIMIT COMBINATION  
"BOWING" & "TWISTING"  
U.S. EXTRA NO. 1

Illustration CEL 4



FAIRLY WELL FORMED  
LOWER LIMIT "TWISTING"  
U.S. NO. 1

Illustration CEL 5



WELL DEVELOPED LOWER LIMIT  
WIDTH & THICKNESS OF MIDRIBS  
U.S. EXTRA NO. 1

Illustration CEL 6



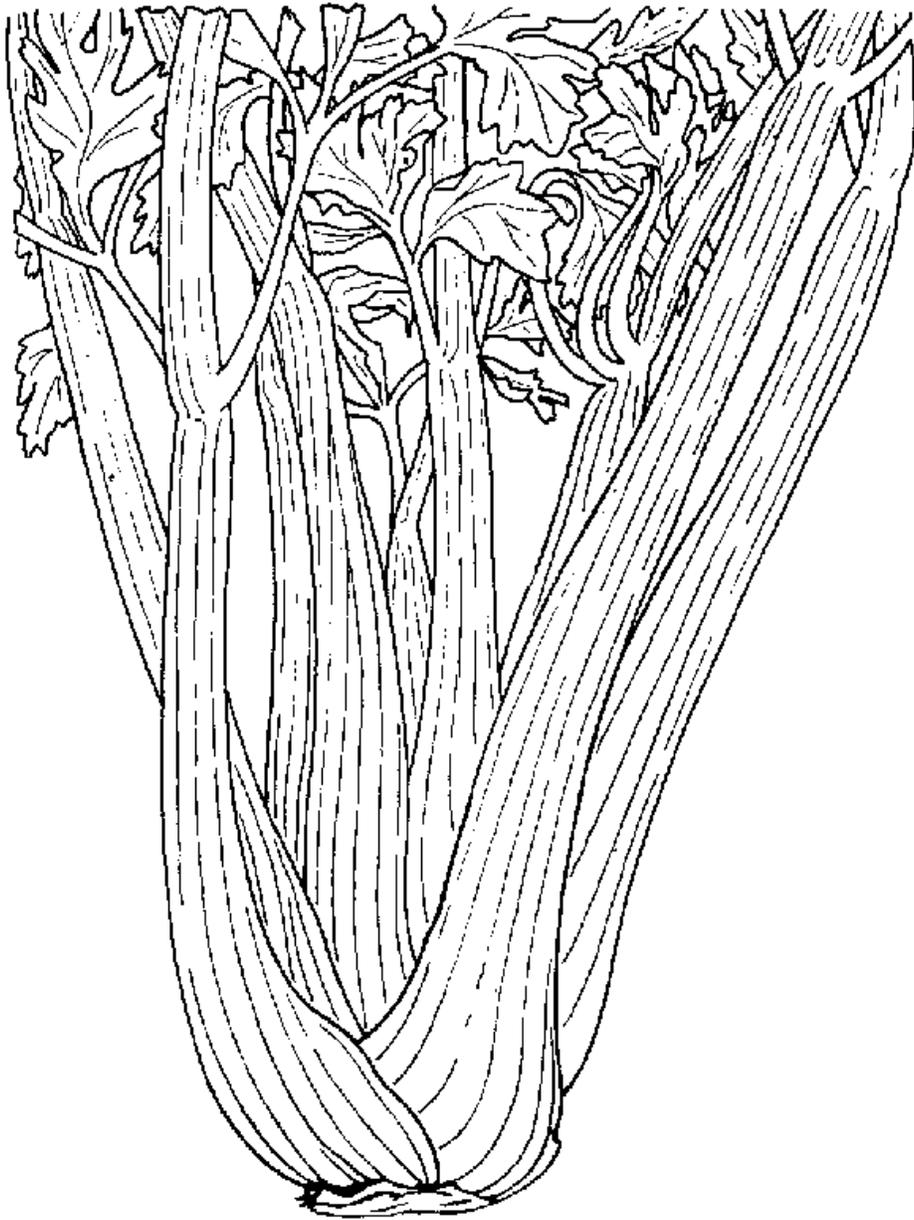
FAIRLY WELL DEVELOPED LOWER LIMIT  
WIDTH & THICKNESS OF MIDRIBS  
U.S. NO. 1

Illustration CEL 7



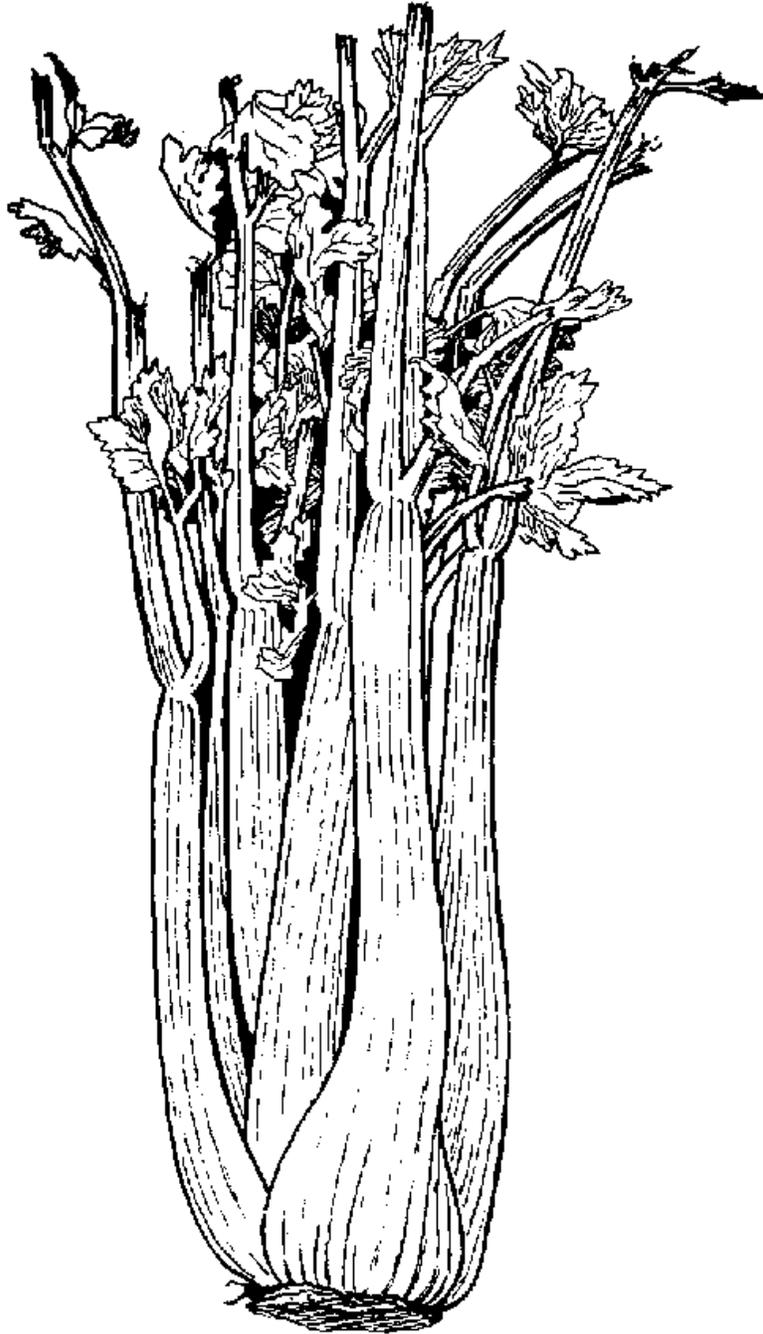
COMPACT - LOWER LIMIT  
U.S. EXTRA NO. 1

Illustration CEL 8



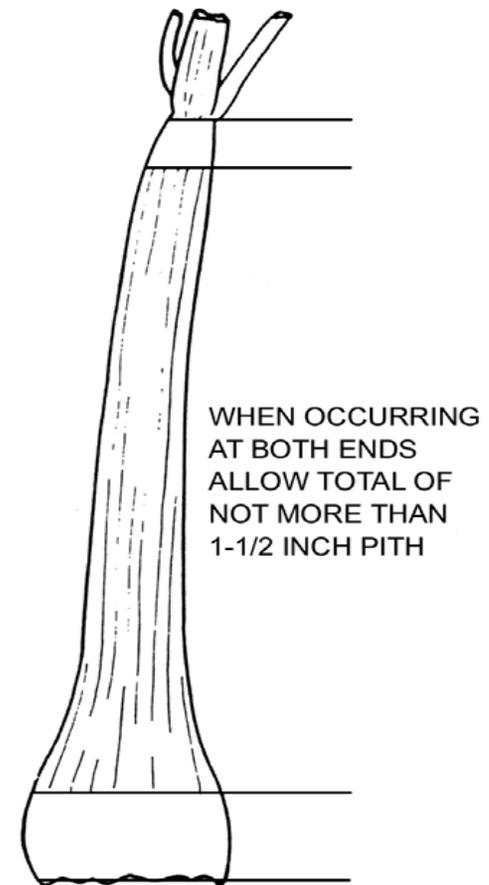
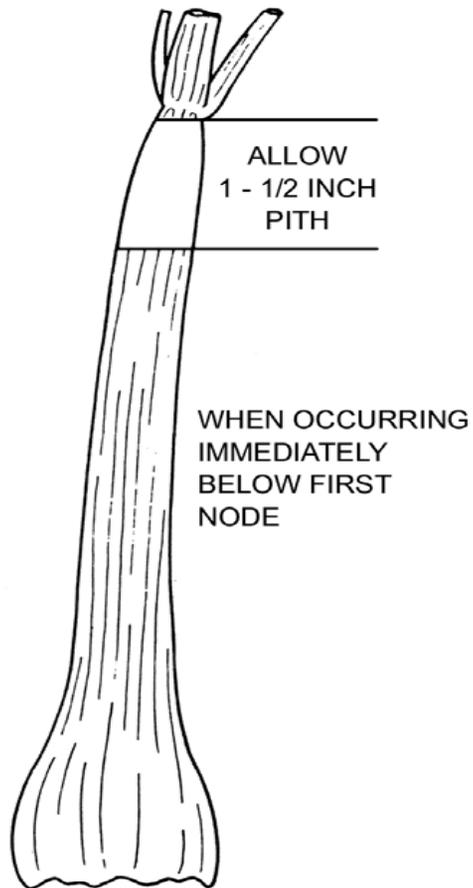
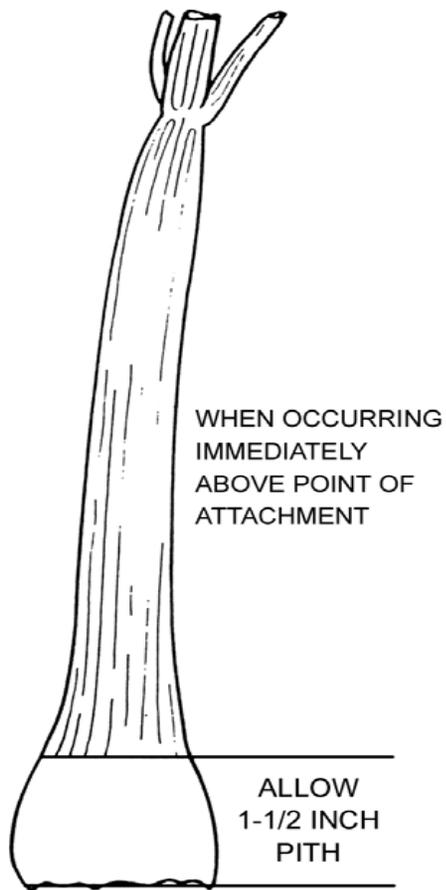
FAIRLY COMPACT - LOWER LIMIT  
U.S. NO. 1

Illustration CEL 9



WELL TRIMMED  
MAXIMUM EXTENT APPEARANCE MAY BE AFFECTED  
BY REMOVAL OF LEAVES OR PORTIONS OF LEAVES  
U.S. EXTRA NO. 1 & U.S. NO. 1

Illustration CEL 10



**ILLUSTRATION OF DEFINITION OF PITHY BRANCH**  
NO PITH PERMITTED IN SHADED PORTION BELOW FIRST NODE IN ANY EXAMPLE

# APPENDIX II NOTESHEET AND CERTIFICATE EXAMPLES

APPLICANT NUMBER: <b>21</b> QUANTITY: FULL <input type="checkbox"/> HALF <input type="checkbox"/> O.T. (hrs): <input type="checkbox"/> O.T. (hrs): <input type="checkbox"/> MILES: <input type="checkbox"/> MILES: <input type="checkbox"/> O.T. (hrs): <input type="checkbox"/> O.T. (hrs): <input type="checkbox"/> OTHER: <input type="checkbox"/> OTHER: <input type="checkbox"/>	D: NUMBER SIZE UNIT GRADE ACCOUNT C: NUMBER SIZE UNIT GRADE ACCOUNT B: NUMBER SIZE UNIT GRADE ACCOUNT A: NUMBER SIZE UNIT GRADE ACCOUNT DEFECT CODES	PURPOSE PRODUCT TYPE CWT A: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> B: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> C: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> D: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	REG. NO. M M O O Y Y HOUR UN AP M CONTAINERS: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	R EGRESSES/ ACTION FY-300 CERTIFICATE NUMBER S USHANS C ONTAINERS:
<b>CARRIER or LOT IDENTIFICATION:</b> PREFIX: <u>LOT</u> NUMBER: <u>1141</u> STATE: <u>CA</u> Carrier No. Stated by: <u>Applicant</u> Additional Lot ID.: _____ Carrier Type / Name: _____ Refrigeration Unit: <input type="checkbox"/> ON <input type="checkbox"/> OFF Doors: <input type="checkbox"/> OPEN <input type="checkbox"/> _____ Condition of Carrier: _____ Inspection Site: <u>Applicants Whse</u>		<b>INSPECTION NOTESHEET</b> U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE FRUIT & VEGETABLE DIVISION CERTIFICATE NUMBER: <u>Example</u> INSPECTION STARTED: m m d d y y Hour Min. A / P <u>09 28 05 09:00 A M</u> Inspection Completed: m m d d y y Hour Min. A / P <u>09 28 05 09:45 A M</u> APPLICANT: <u>Celecy Sales Co.</u> Address: <u>Anytown USA</u> SHIPPER: <u>R &amp; R Celecy</u> Address: <u>Stockton CA.</u>		
A: PRODUCT: <u>Celecy</u> NUMBER of CONTAINERS: <u>325 Cartons</u> INSP. COUNT: <u>4</u> TEMPERATURES: <u>36-37°</u>		BRANDS / MARKS: <u>"R &amp; R Brand Stockton CA Produce USA" MARKED "24 STALKS"</u>		
B: PRODUCT: _____ NUMBER of CONTAINERS: _____ INSP. COUNT: _____ TEMPERATURES: _____				
C: PRODUCT: _____ NUMBER of CONTAINERS: _____ INSP. COUNT: _____ TEMPERATURES: _____				
D: PRODUCT: _____ NUMBER of CONTAINERS: _____ INSP. COUNT: _____ TEMPERATURES: _____				
Condition of Load & Containers: <input checked="" type="checkbox"/> STACKED ON PALLETS AT ABOVE LOCATION ( ) INTACT THROUGH LOAD ( ) PARTLY UNLOADED				

FORM FV-300-N (3-93)



