



United States
Department of
Agriculture

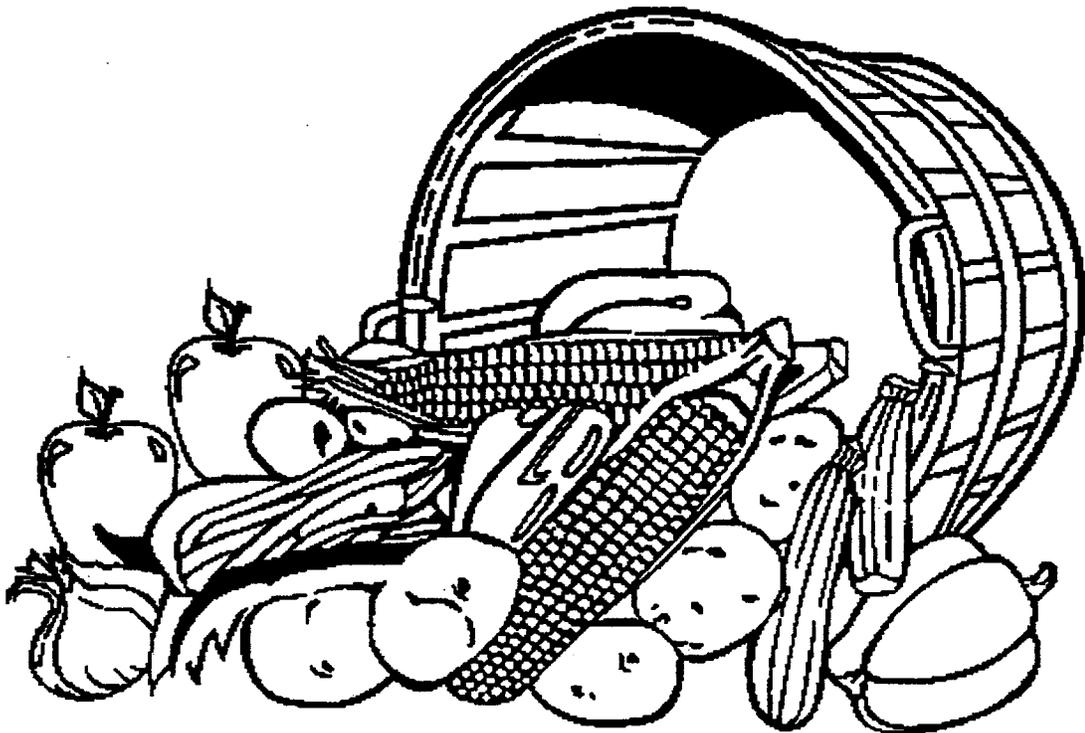
Agricultural
Marketing
Service

Fruit and
Vegetable
Programs

Fresh Products
Branch

Cauliflower

Shipping Point and Market Inspection Instructions



Shipping Point and Market Inspection Instructions for Cauliflower

These inspection instructions are specifically developed and designed by the Fresh Products Branch to assist officially licensed inspectors in the interpretation and application of the U.S. Standards for Grades of Cauliflower, Section 51.540.

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

Refer to General Inspection Instructions for additional information pertaining to date, inspection point, carrier, condition of carrier, lading, etc. not covered in these instructions. (Reference to "General Inspection Instructions" in all Fresh 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 a section number such as 51.— and followed with **bold print** is material copied directly from the U.S. standards. The U.S. Standards for Grades of Cauliflower are printed in the appendix of this instruction. All of the U.S. standards are available on the Internet under the USDA homepage.

January 2000

REPRINTED FEBRUARY 2009

This replaces Market Inspection Instructions for Cauliflower dated February 1970 and Shipping Point Inspection Instructions for Cauliflower dated July 1969.

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Defects noted with (C) are considered condition factors at market. Defects noted with (Q or C) may be considered as quality or condition depending on the circumstances. Factors with no notation are considered as quality only.

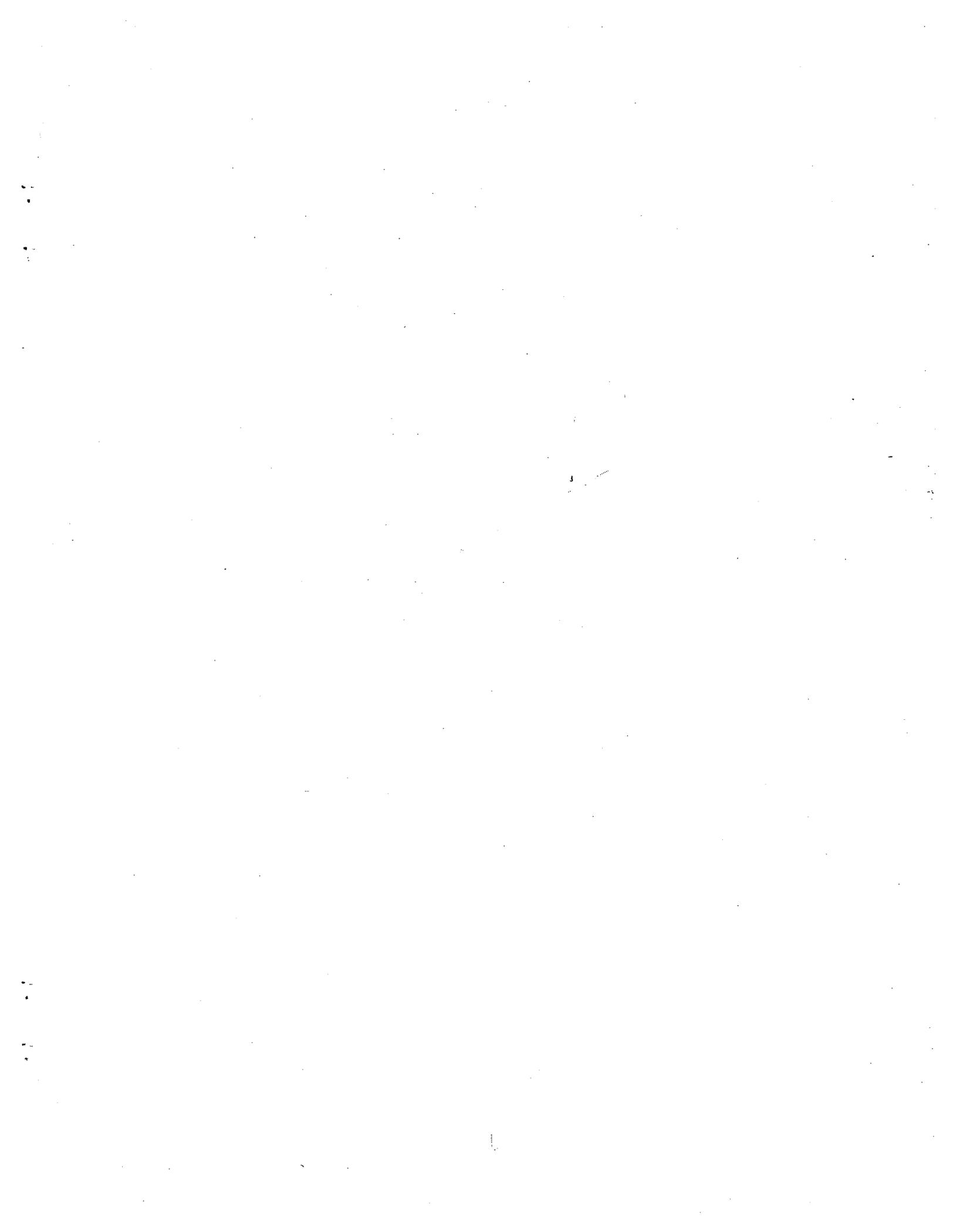
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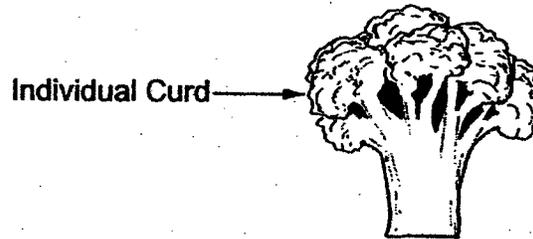
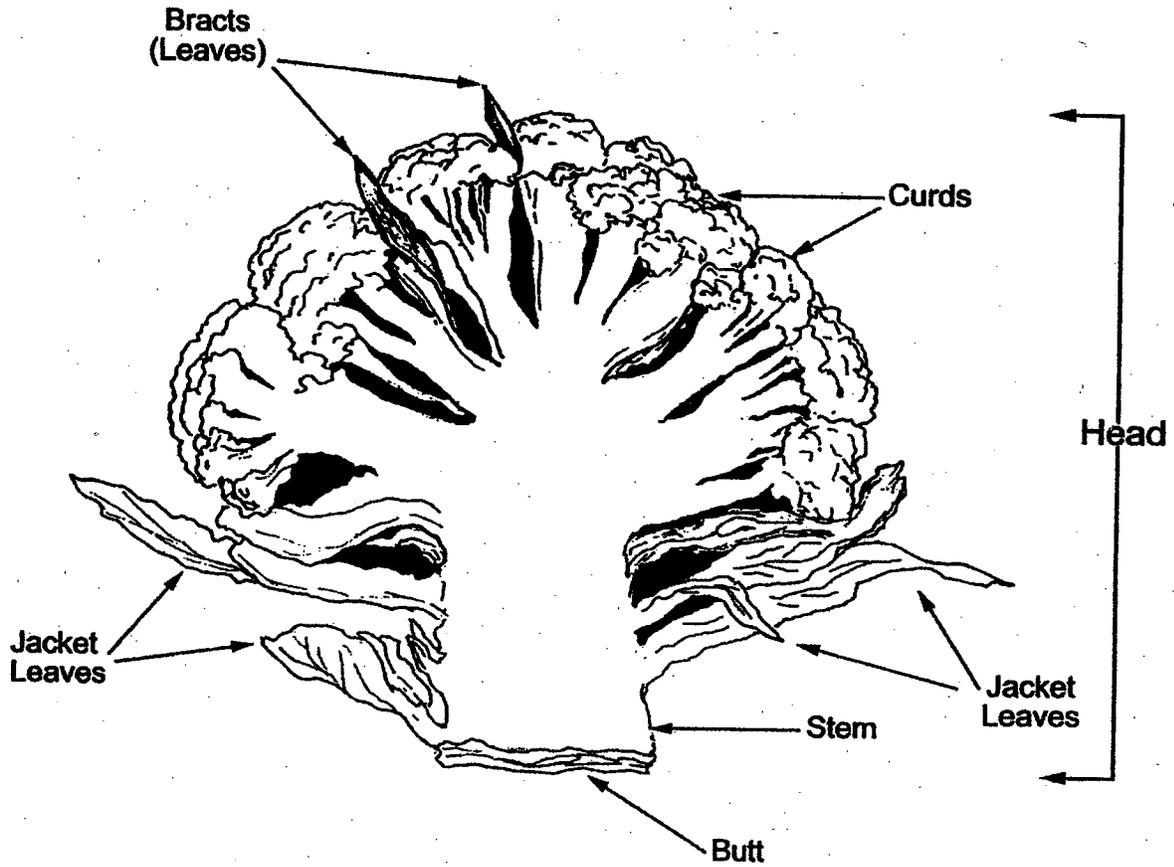
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CAULIFLOWER



(1) 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 load.

Size of Sample

The tolerances of the U.S. Standards for Grades of Cauliflower for quality and condition defects are determined on the basis of count. The **entire contents** of the container shall be the sample size; except when in bulk bins, the sample size shall be a **minimum of 25** heads of cauliflower.

Number of Samples

Due to potential variations in size, quality, condition, or all of these, no definite rule can be provided as to a required number of samples. A minimum of 1% of the load is recommended. It is the inspector's responsibility to examine enough samples to ensure an accurate description of the entire lot. However, for lots containing less than 100 cartons, a minimum of three samples shall be examined.

(2) TOLERANCES AND APPLICATION OF TOLERANCES

§51.543 Tolerances. In order to allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances, by count, are provided as specified:

- (a) *For defects.* (1) U.S. No. 1. 10 percent for heads of cauliflower in any lot which fail to meet the requirements of the grade, but not more than one-half of this tolerance, or 5 percent, shall be allowed for defects causing serious damage, including in this latter amount not more than 1 percent for soft or wet decay affecting the curd or butt. (See §51.544.)

(2) U.S. Commercial. 20 percent for heads of cauliflower in any lot which fail to meet the requirements of the grade, but not more than one-half of this tolerance, or 10 percent, shall be allowed for defects causing serious damage, including in this latter amount not more than 1 percent for soft or wet decay affecting the curd or butt. (See §51.544.)

(b) For off-size. 5 percent for heads of cauliflower smaller than the specified minimum curd size and 5 percent for heads of cauliflower larger than any specified maximum curd size. (See §51.544.)

	U.S. No. 1	U.S. Commercial
Total Defects	10%	20%
<i>including</i> Serious Damage	5%	10%
decay affecting curds or butts	1%	1%
Offsize		
Undersize	5%	5%
Oversize (when specified)	5%	5%

Note: Decay affecting jacket leaves is scored against the serious damage tolerance, not the decay tolerance.

Application of Tolerances

§51.544 Application of tolerances. The contents of individual packages in the lot, based on sample inspection, are subject to the following limitations:

(a) A package may contain not more than double any specified tolerance except that at least two defective and two off-size specimens may be permitted in any package: *Provided*, That not more than one specimen which is affected by soft or wet decay occurring on the curd or butt portion of the head may be permitted in any package: *And provided further*, That the averages for the lot are within the tolerances specified for the grade.

(3) NOTESHEET AND CERTIFICATE

Entries on the notesheet and certificate are to 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. When the inspection is complete, it is the responsibility of the inspector to ensure all information is properly recorded. Notations shall be recorded so anyone familiar with inspection procedures can interpret them and write a certificate.

Headings on Notesheets

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.

Handwritten Certificates

The handwritten certificate, (FV-184 at shipping point and FV-300 at market) should be written with great care since they are given to the applicant at the completion of the inspection.

Please refer to the FV-184 or FV-300 certificate handbooks and your immediate supervisor for complete instructions regarding the procedures to follow when writing certificates.

Product

"Cauliflower" shall be used to describe this commodity in the "Product" heading.

Number/Type of Containers

The number of containers shall always be reported. The count of large lots certified in a warehouse or on a platform may be reported on the authority of someone other than the inspector. However, the inspector is responsible for assuring that the approximate number of the containers reported in the lot are present. Small lots (100 containers or less) and lots that can be counted with accuracy are to be reported on the inspector's authority as "inspector's count."

Cauliflower is generally packed in open top cartons or trays. Occasionally "eastern" cauliflower will be seen in markets, which is generally packed in wirebound crates. The type of container shall always be reported under this heading.

Brands/Markings

The brand, variety, size, count, 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 pertinent information should appear in this section on the certificate.

Origin

The inspector should not make a positive statement on their own authority, but when container markings list the State or country of origin, it should be quoted in the appropriate space on notesheets and certificates. 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 cauliflower is grown. If packages are not marked, or the cauliflower is in bulk, refer to the General Inspection Instructions.

(4) CONDITION OF PACK

Cauliflower is generally film wrapped and packed in open top, single layer carton. The following terms are to be used to describe pack:

Very Tight. The head is packed so tightly that it usually results in bruising.

Tight. This is the most desirable pack and means that the container is sufficiently filled and that the heads are placed tight enough so that there is no movement within the container.

Fairly Tight. This pack allows for slight movement within the container, but not enough to cause bruising under normal handling conditions.

Slack. The container is not sufficiently full and free movement of the heads occurs. The amount of slackness shall be reported in inches or fractions of an inch.

(5) TEMPERATURE OF PRODUCT

Refer to the General Inspection Instructions for information not covered in this section.

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 read 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.

A minimum of three temperatures must be taken and recorded for each lot on the notesheet. More temperatures shall be taken if the lot is abnormally cold, heated, or there is a specific request for temperature.

(6) SIZE

The U.S. No. 1 and U.S. Commercial grades require the diameter of the head to be **not less than 4 inches**. Diameters less than 4 inches may **not** be specified. However, a larger minimum and/or maximum diameter may be specified. Any specified size must be reported in connection with the grade. There is a 5 percent tolerance for undersize. If a maximum diameter is specified there is a **separate** 5 percent tolerance for oversize.

Reporting Size

Diameter. This is the greatest dimension measured in a straight line which would pass through the center of the curd.

Size shall be reported in inches and fractions of inches. If there is a wide range in size, it is desirable to show the size of "most" of the specimens in order to give the general size impression of the lot. Size columns are to be kept on the notesheet to substantiate the size reported on the certificate. When size is "otherwise specified" it must to be reported in connection with the grade. For example "U.S. No. 1, 8 inch minimum diameter."

Uniformity

There is no requirement for uniformity of curd size; however, the degree of uniformity should be reported unless the range in diameter is reported in inches and fractions of an inch.

The following terms are to be used when describing uniformity:

Fairly uniform. Means that the size of the curd in the individual containers does not vary more than 2 inches in diameter.

Irregular. Means that the size of curds in the individual containers varies more than 2 inches in diameter.

Standard Sizing

Standard sizing is not a requirement of the grade(s), and shall only be determined when specifically requested by applicant.

§51.545 Standard sizing. (a) Any lot of cauliflower may be designated as meeting the requirements for standard sizing provided the variation in diameter of the curd in any individual package is not more than 1-1/2 inches.

(b) In order to allow for variations incident to proper packing not more than 10 percent of the containers in any lot may fail to meet the requirements for standard sizing.

Important points to remember when determining standard sizing.

- The application of tolerances does not apply to standard sizing. Not more than 10% of the containers in a lot may fail to meet the requirements of standard sizing.
- A lot of cauliflower can fail the requirements of standard sizing and still meet grade. The grade statement would be as follows: "U.S. No. 1. Fails to meet requirements of standard sizing."
- It is to be noted in the "Remarks" section of certificate and notesheet "Standard sizing reported at applicants request."

Marking as to Count

Cauliflower cartons are generally marked as to the count of heads. When containers are marked to count and do not conform to count, is to be reported in the "Other" section on market certificates and in the "Description of Products" section on shipping point certificates. Report the range and the average of heads per container as well as percentage of containers not conforming to count. For example: "Counts range from 10 to 12, average 11; 50% of cartons fail to meet count as marked." This may be a misbranding violation. For further instructions see PACA Ruling on Grade and Size Markings in the General Inspection Instructions.

(7) 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. Those factors noted with (C) shall be reported as **CONDITION** factors on market certificates. Those factors noted with (Q or C) may be considered as **QUALITY** or **CONDITION**, depending on the circumstances. Factors with no notation are considered as **QUALITY** only.

Cleanness

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

Curds - Clean.

Jacket Leaves - Fairly clean.

Definitions:

§51.546 Clean. "Clean" means that the curd is practically free from dirt or other foreign matter.

§51.551 Fairly clean. "Fairly clean" means the jacket leaves are not caked or badly smeared with dirt or other foreign matter.

Scoring Guide

When the appearance of the curd is materially affected by dirt or other foreign material the cauliflower shall be considered damaged by dirt. Cauliflower shall also be considered damaged when the jacket leaves are caked or badly smeared with dirt or other foreign material.

Cauliflower shall only be scored as serious damage when dirt or other foreign material seriously detracts from the appearance of the curd.

Trimming

The U.S. grades for cauliflower have the following requirement for trimming:

Closely trimmed, unless otherwise specified.

Definitions:

§51.550 *Closely trimmed.* "Closely trimmed" means that the butts are smoothly trimmed and jacket leaves do not exceed the number and length necessary for protection against bruising, and do not extend above the crown of the curd. No jacket leaves are required on heads which are individually wrapped, or packed with cushions, partitions or other protective means.

Cauliflower is generally shipped individually film wrapped in open faced single layer cartons. No jacket leaves are required in these types of pack or when they are packed with cushions or other protective means. However, when jacket leaves are present on heads in this type of pack, report number of jacket leaves in general terms in the "Other" section on market certificates and in the "Description of Products" section on shipping point certificates. For example; "Generally no jacket leaves, few heads show 3 to 5 jacket leaves extending 2 to 4 inches above curd."

It is not possible to establish a definite length or number of jacket leaves necessary to protect the curd against bruising. The size and coarseness of leaves needs to be taken into consideration. When the midribs are small, a greater number of leaves would be required for proper protection of the curd. In general, two thickness of coarse and large leaves are necessary to protect the curd. The midrib of jacket leaves should form a complete or continuous ring around the curd since it is the midribs which provide protection from bruising.

The applicant may specify other degrees of trimming, such as "tops clipped" to a specified length and/or the number of jacket leaves. When reporting degrees of trimming other than closely trimmed, the length of jacket leaves shall be reported in inches in connection with the grade. For example: "U.S. No. 1, jacket leaves range from 10 to 16 per head and extending 4 to 8 inches above the curd."

Enlarged Bracts

Enlarged bracts refer to the light green leaves that originate from the base of the main stem and grow up through the curd. In some cases, these enlarged bracts separate sections from the main part of the head. At other times these bracts can cover the curd.

Scoring Guide

§51.554 Damage. (d) Enlarged bracts when leaves growing up through and extending above the curd materially detract from the appearance of the head;

As a guide, enlarged bracts, which exceed 5 in number, are to be considered materially detracting from the appearance. Enlarged bracts, which exceed 10 in number, shall be considered serious damage.

Refer to official visual aids for Cauliflower, Photos No. 3, 4 and 5 for.

Small Bracts

In some lots of cauliflower, heads may be found which show numerous small white bracts, mostly from 1/8 inch to 1/2 inch in length, extending up through the curd. If the small bracts are so numerous that the appearance of the head is materially affected, score as damage. Score as serious damage when the bracts seriously detract from the appearance.

Hollow Stem

Under certain growing conditions, hollow spaces may appear in the butt of the head and extend up or through the length of the main central stem.

Scoring Guide

§51.554 Damage. (f) Hollow stem when the opening extends into the curd, or when the opening is more than slightly discolored or watersoaked;

Insect Injury (Q or C)

Several types of insects, one of the most common being the Aphid, may cause insect injury. The damage may be found on the curd and/or the jacket leaves.

Scoring Guide

§51.554 Damage. (g) Insects when any feeding injury on the curd is evident, or when the curd is more than slightly infested or the jacket leaves are more than moderately infested with aphids or other insects;

§51.555 Serious damage. (a) Insects when the curd is more than slightly infested or the jacket leaves badly infested with aphids or other insects, or when insect feeding injury seriously detracts from the appearance of the head;

When more than 5 insects are on the curd, it shall be considered "more than slightly infested," and scored as serious damage. When more than 5 insects are on the jacket leaves, it shall be considered "more than moderately infested," and score as damage; more than 15 insects on the jacket leaves, it shall be considered "badly infested," and scored as serious damage. Jacket leaves that are ragged because of insect feeding injury should be scored on an appearance basis.

In transit or at destination, if damage is fresh, or if live insect(s) are present or a combination of live and dead, report as a condition factor. Report as a quality factor when the damage is old or if the insect(s) are dead.

Bruising (Q or C)

When packing cauliflower, heads may be bruised or broken by rough handling if the packer does not use reasonable care. The curd is usually very tender and if pressure is applied, discolored, bruised spots will show on the curd. Bruising which occurs after packing, such as crushing of the flowers, indented or discolored spots, is a condition factor.

Scoring Guide

§51.554 Damage. (a) Bruising when the size or color of the affected area materially detracts from the appearance or marketing quality, or when more than a small portion of the curd has broken off;

When determining whether a bruised area materially detracts from the appearance of the head allow larger areas for lighter bruises. As a guide, score as damage, bruises which are dark brown or darker when the affected area exceeds 5/8 inch in diameter and as serious damage when the area affected exceeds 1-1/4 inches on a cauliflower 6 inches in diameter (correspondingly lesser or greater areas on smaller or larger heads).

When portions of the curd are broken, indented or crushed, score as damage. If the bruised area(s) seriously affects the appearance of the cauliflower, score as serious damage.

Cuts

At times, a cut or slice may be made in the curd during harvesting or when jacket leaves are being trimmed. (Portions of the curd that are indented or broken due to rough handling would be considered bruising [see bruising]).

Scoring Guide

§51.554 Damage. (b) Cuts when materially detracting from the appearance or marketing quality, or when any cut exposes the flower stem;

As a guide, score as damage when cuts exceed 5/8 inch in diameter, as serious damage when cuts exceed 1 inch in diameter on a cauliflower 6 inches in diameter (correspondingly lesser or greater areas on smaller or larger heads).

Score as damage when cuts expose the flower stem, as serious damage when the exposed area exceeds 5/8 inch in diameter.

Compactness (C)

Each grade requires cauliflower to be compact. When describing compactness the following terms are to be used:

Compact. The flower clusters are closely united and the curd is solid.

Spread. The growth of the stem has caused more than slight separation of the clusters.

Badly Spread. The clusters are widely separated and the head has a loose, open texture.

Cauliflower that is spread is scoreable against both grades.

Wilting of Curd

Heads that are more than slightly wilted will be spongy and rubbery. Wilted heads are undesirable and usually do not ship well. Score wilted heads under the general definition of damage and serious damage.

Curd Color (C)

The U.S. standards for cauliflower require the curd color to be **white, creamy white or cream.**

Definitions:

White. Means the curds show practically no cream color.

Creamy white. The general appearance of the curds are white, with a creamy cast.

Cream. The curds are a light to rich cream color, but the cream color does not detract from the fresh appearance of the curd.

Curd Discoloration (Q or C)

A purplish tint, is characteristic of some varieties and should not be scored as discoloration. This may be described on the certificate as not affecting grade at applicant's request

Scoring Guide

§51.554 Damage. (c) Discoloration when yellow or other abnormal color materially detracts from the appearance of the curd...

Curds that are noticeably yellow, purple or pink not characteristic of the variety, are to be scored as damage.

Score as damage, dark brown or black spots when a single spot exceeds 5/8 inch in diameter, as serious damage when the spot exceeds 1-1/4 inches in diameter on a cauliflower 6 inches in diameter (correspondingly lesser or greater areas on smaller or larger head).

Score numerous small (5/8 inch or less in diameter) dark brown or black spots as damage or serious damage when they detract from the appearance to a greater extent than that allowed for a single spot.

Any other shades of discoloration lighter than dark brown or black shall be scored as damage or serious damage when the appearance is affected to a greater extent than that permitted for dark brown or black discoloration.

Jacket Leaf Freshness (C)

The U.S. standards require jacket leaves to be fresh. The following terms are to be used to describe freshness:

Fresh. The leaves are of normal color, succulence and turgidity.

Wilted. The leaves have lost their normal crispness.

Wilted jacket leaves shall be scored as damage.

Jacket Leaf Color (C)

The standards do not have color requirements for jacket leaves. However, green leaves are the most desirable color. The following terms are to be used to describe color:

Green. The leaves have a normal green color.

Turning yellow. The color is changing from green to yellow.

Yellow. The leaves are full yellow. (See below)

Jacket Leaf Discoloration

The yellowing of jacket leaves may be slight or full yellow color and affect only a few outer leaves to all leaves surrounding the curd. In most cases, yellowing is due to aging or deterioration of the plant, although in some cases it is due to poor growing conditions, freezing injury or disease.

Scoring Guide

§51.554 Damage. (c) Discoloration when yellow or other abnormal color materially detracts from the appearance of the curd, or of the jacket leaves of closely trimmed cauliflower, or seriously detracts from the appearance of the jacket leaves of cauliflower not closely trimmed;

Discoloration of jacket leaves on heads of closely trimmed cauliflower will be scored as damage when yellow or other abnormal color materially detracts from the appearance. Discoloration of jacket leaves on cauliflower that is not closely trimmed must **seriously** detract from the appearance before scoring as damage.

Midrib Discoloration

Occasionally jacket leaves will have discoloration affecting the midribs only. This is thought to be caused by field freezing. However, since this cannot be verified, a description of the defect should be given rather than identifying it as field freezing.

Scoring Guide

Score as damage when the midribs of more than two jacket leaves are **light brown or darker** in color for their **entire length**. If only portions of the midribs are affected, score when the equivalent of more than two entire midribs are affected by discoloration.

Discolored Inner Leaves

The smaller inner leaves, which are pale in color or blanched, should be disregarded. At times small tender leaves nearest the curd will show marginal discoloration. The exact cause is not known although it is thought that a late heavy application of fertilizer may contribute to this condition.

Scoring Guide

Inner leaves which show a **distinct brown to black** marginal discoloration are to be scored as damage when materially detracting from the appearance.

There are various diseases affecting cauliflower leaves that also cause discoloration. The following diseases are described for informational purposes; all discoloration is to be described on notesheets and certificates rather than naming the disease.

Alternaria Leaf Spot

Alternaria Leaf Spot is also known as Black Leaf Spot. It has been reported as causing Black Mold Rot under favorable conditions. The first symptoms appear as small, grayish brown to black specks, which soon enlarge and become sunken and black. Spots vary in size from 1/20 of an inch to 1 inch or more in diameter. They may remain single but frequently coalesce, especially in storage or transit. The spots may be marked by concentric brown zones or may be covered by moldy growth until the leaves turn yellow or shed.

Bacterial Leaf Spot

This is a minor disease of cauliflower characterized by abundant speckling, spotting and blotching of the leaves. The spots first appear water-soaked and then brownish to purplish gray. The lesions are usually very small and are circular when in early stages, but soon take on an angular appearance and often coalesce.

Ring Spot

Ring Spot first appears as small circular spots having a dark center surrounded by a greenish-yellow water-soaked border. The spots are visible on both sides of the leaves. As the spots enlarge, they usually maintain the circular outline and have light brown to grayish-brown centers surrounded by a narrow olive-green or olive-gray border. The leaves eventually turn yellow and the spots retain their greenish border and become very conspicuous against the yellow background. The black pycnidia (pimples) may appear in concentric rings towards the center part or the central region or be scattered over it. The pycnidia are sometimes so abundant that the whole spots appear black.

Virus Mottling

Virus mottling greatly reduces the yield and apparently is responsible for some of the excessive yellowing of the jacket leaves during transit and marketing.

Fuzziness (C)

Fuzziness is caused by the lengthening of the leafy floral bracts of the bud or flower giving the surface of the curd a velvety or hairy appearance. It frequently develops around the edges of the curd before appearing on other portions.

Scoring Guide

Score as damage when more than one-third of the head has a distinctly fuzzy appearance. Score as serious damage when two-thirds of the head has a distinctly fuzzy appearance.

Riciness (C)

Riciness is caused by the elongation of the branches of the curd, which gives it a granular appearance. The curds also tend to lose their compactness. Riciness is an indication of over-maturity and shall be scored when causing the surface of the curd to be abnormally rough and granular.

Scoring Guide

As a guide, score as damage by riciness when the curd has an abnormally rough and granular appearance and more than 25% of the surface is affected. Score as serious damage when the curd has an abnormally rough and granular appearance and more than 50% of the surface is affected.

Mold (C)

One of the more common defects to affect cauliflower is surface mold. When mold is found on the curd it appears as small, grayish to black spots.

Scoring Guide

Score as damage when any single spot exceeds 1/8 inch in diameter or if any spots aggregate more than 3/8 inch in diameter. Score as serious damage when any single spot exceeds 3/8 inch in diameter or if any spots aggregate more than 5/8 inch in diameter. If any spot of mold shows wet or soft breakdown, score as decay.

Freezing and Freezing Injury (C)

The term "frozen" should only be used when ice crystals are present. Frozen cauliflower or portions of the head in a frozen state will be darker and glassy in comparison to the rest of the head, with a distinct line of demarcation between the affected and the unaffected portion.

"Freezing injury" is the term that should be used when it is evident that the cauliflower has been frozen, but is not in a frozen condition at the time of inspection. The cauliflower may be discolored, watersoaked and dull in appearance.

When reporting freezing or freezing injury, it is important to give the following information:

- 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 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 occurred after packing but not in present location."

Decay (C)

There are various types of decay that affect cauliflower, such as Bacterial Soft Rot, Gray Mold Rot and Watery Soft Rot. All grades require that cauliflower be free from decay. Each grade contains a tolerance of 1% for soft or wet decay affecting the **curds or butts**. Decay affecting only the **jacket leaves** shall be scored against the restrictive tolerance for **serious damage**. The type of decay is not to be reported on the certificate. However, when the decay is in excess of the tolerance, report the degree of advancement as; early, moderate or advanced. Decay affecting the curd or butt portion must be recorded and reported separately from decay affecting jacket leaves.

Appendix I

U. S. Standards







**United States
Department of
Agriculture**

**Agricultural
Marketing
Service**

**Fruit and
Vegetable
Programs**

**Fresh
Products
Branch**

United States Standards for Grades of Cauliflower

Effective March 15, 1968
(Reprinted - January 1997)

United States Standards for Grades of Cauliflower¹

Grades

51.540 U.S. No. 1.

51.541 U.S. Commercial.

Unclassified

51.542 Unclassified.

Tolerances

51.543 Tolerances.

Application of Tolerances

51.544 Application of tolerances.

Standard Sizing

51.545 Standard sizing.

Definitions

51.546 Clean.

51.547 Compact.

51.548 Diameter.

51.549 Fresh.

51.550 Closely trimmed.

51.551 Fairly clean.

51.552 Curd.

51.553 Soft or wet decay.

51.554 Damage.

51.555 Serious damage.

Metric Conversion Table

51.556 Metric conversion table.

Grades

§51.540 U.S. No. 1.

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

(a) Basic requirements for curds:

(1) Clean;

(2) Compact;

(3) Color -- white, creamy white, or cream;

(4) Size -- not less than 4 inches in diameter.

(b) Basic requirements for jacket leaves:

(1) Fresh;

(2) Closely trimmed, unless otherwise specified;

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

- (3) Fairly clean.
- (c) Free from:
 - (1) Soft or wet decay.
- (d) Free from damage caused by:
 - (1) Bruising;
 - (2) Cuts;
 - (3) Discoloration;
 - (4) Enlarged bracts;
 - (5) Fuzziness;
 - (6) Hollow stem;
 - (7) Insects;
 - (8) Mold;
 - (9) Riciness;
 - (10) Wilting; and,
 - (11) Other means.
- (e) Free from serious damage by any cause.
- (f) For tolerances (see §51.543).

§51.541 U.S. Commercial.

"U.S. Commercial" consists of heads of cauliflower which meet the requirements for the U.S. No. 1 grade except for the increased tolerances for defects specified in §51.543.

Unclassified

§51.542 Unclassified.

"Unclassified" consists of cauliflower which has not been classified in accordance with either 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.

Tolerances

§51.543 Tolerances.

In order to allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances, by count, are provided as specified:

(a) **For defects** – (1) **U.S. No. 1.** 10 percent for heads of cauliflower in any lot which fail to meet the requirements of the grade, but not more than one-half of this tolerance, or 5 percent, shall be allowed for defects causing serious damage, including in this latter amount not more than 1 percent for soft or wet decay affecting the curd or butt. (See §51.544.)

(2) **U.S. Commercial.** 20 percent for heads of cauliflower in any lot which fail to meet the requirements of the grade, but not more than one-half of this tolerance, or 10 percent, shall be allowed for defects causing serious damage, including in this latter amount not more than 1 percent for soft or wet decay affecting the curd or butt. (See §51.544.)

(b) **For off-size.** 5 percent for heads of cauliflower smaller than the specified minimum curd size and 5 percent for heads of cauliflower larger than any specified maximum curd size. (See §51.544.)

Application of Tolerances

§51.544 Application of tolerances.

The contents of individual packages in the lot, based on sample inspection, are subject to the

following limitations:

(a) A package may contain not more than double any specified tolerance except that at least two defective and two off-size specimens may be permitted in any package: **Provided**, That not more than one specimen which is affected by soft or wet decay occurring on the curd or butt portion of the head may be permitted in any package: **And provided further**, That the averages for the lot are within the tolerances specified for the grade.

Standard Sizing

§51.545 Standard sizing.

(a) Any lot of cauliflower may be designated as meeting the requirements for standard sizing provided the variation in diameter of the curd in any individual package is not more than 1-1/2 inches.

(b) In order to allow for variations incident to proper packing not more than 10 percent of the containers in any lot may fail to meet the requirements for standard sizing.

Definitions

§51.546 Clean.

"Clean" means that the curd is practically free from dirt or other foreign matter.

§51.547 Compact.

"Compact" means that the flower clusters are closely united and the curd is solid.

§51.548 Diameter.

"Diameter" means the greatest dimension measured in a straight line which would pass through the center of the curd.

§51.549 Fresh.

"Fresh" means that the jacket leaves are of normal color and are not wilted.

§51.550 Closely trimmed.

"Closely trimmed" means that the butts are smoothly trimmed and jacket leaves do not exceed the number and length necessary for protection against bruising, and do not extend above the crown of the curd. No jacket leaves are required on heads which are individually wrapped, or packed with cushions, partitions or other protective means.

§51.551 Fairly clean.

"Fairly clean" means the jacket leaves are not caked or badly smeared with dirt or other foreign matter.

§51.552 Curd.

"Curd" means the edible portion of the head exclusive of the butt and any attached jacket leaves.

§51.553 Soft or wet decay.

"Soft or wet decay" means any soft or mushy breakdown of the curd, butt, or leaves.

§51.554 Damage.

"Damage" means any specific defect described in this section; or an equally objectionable variation of any one of these defects, any other defect, or any combination of defects, which materially detracts from the appearance, or the edible or marketing quality of the cauliflower. The following specific defects shall be considered as damage:

(a) Bruising when the size or color of the affected area materially detracts from the appearance or marketing quality, or when more than a small portion of the curd has broken off;

(b) Cuts when materially detracting from the appearance or marketing quality, or when any cut

exposes the flower stem;

(c) Discoloration when yellow or other abnormal color materially detracts from the appearance of the curd, or of the jacket leaves of closely trimmed cauliflower, or seriously detracts from the appearance of the jacket leaves of cauliflower not closely trimmed;

(d) Enlarged bracts when leaves growing up through and extending above the curd materially detract from the appearance of the head;

(e) Fuzziness when more than one-third of the curd surface has a distinct fuzzy appearance;

(f) Hollow stem when the opening extends into the curd, or when the opening is more than slightly discolored or watersoaked;

(g) Insects when any feeding injury on the curd is evident, or when the curd is more than slightly infested or the jacket leaves are more than moderately infested with aphids or other insects;

(h) Mold when the aggregate area of all spots exceeds that of a circle three-eighths inch in diameter, or when the area of any individual spot exceeds that of a circle one-eighth inch in diameter. Mold which causes disintegration of the curd is considered soft decay; and,

(i) Riciness when causing the surface of the curd to be abnormally rough or granular.

§51.555 Serious damage.

"Serious damage" means any specific defect described in this section, any other defect, or any combination of defects, which seriously detracts from the appearance, or the edible or marketing quality of the cauliflower. The following specific defects shall be considered as serious damage:

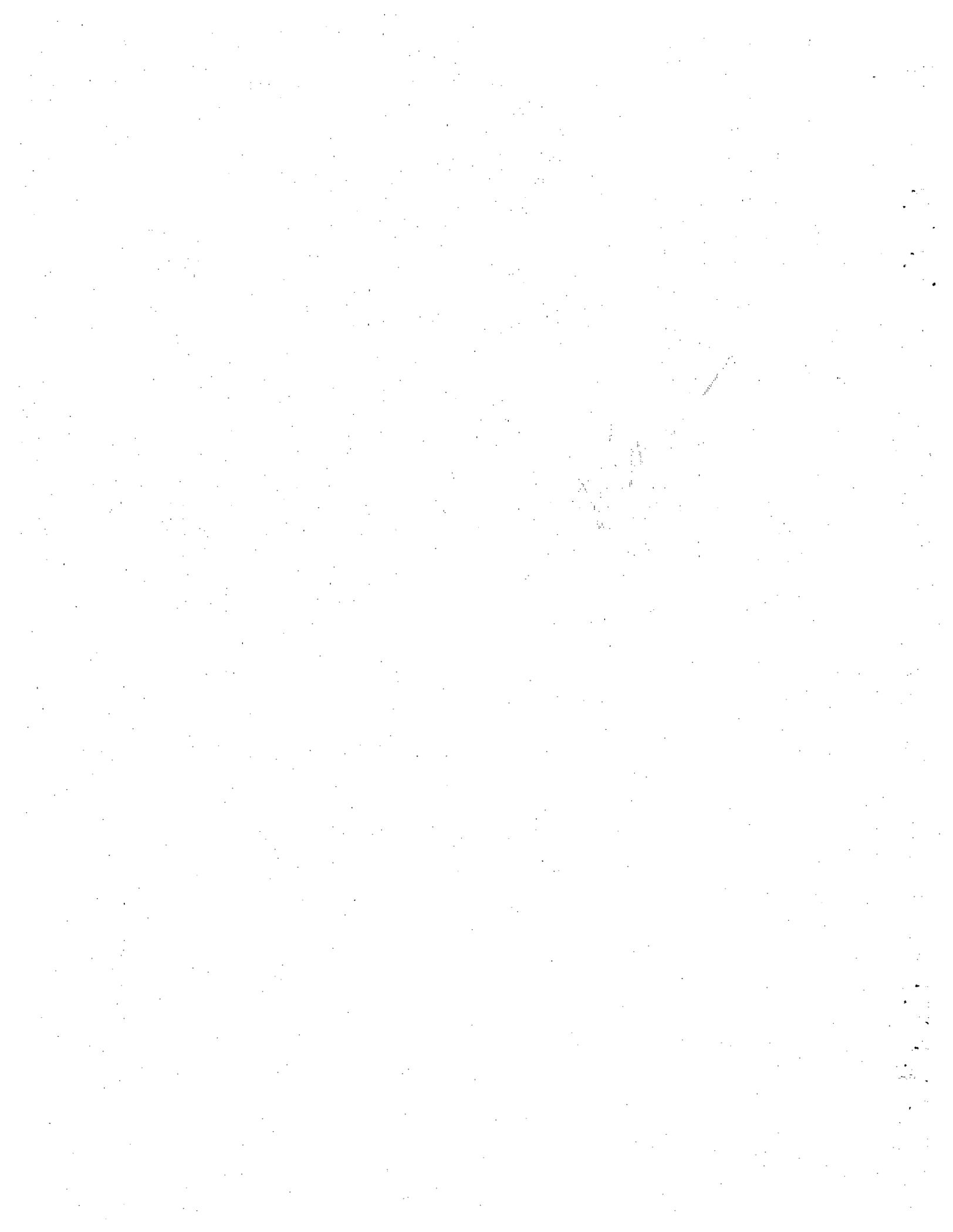
(a) Insects when the curd is more than slightly infested or the jacket leaves badly infested with aphids or other insects, or when insect feeding injury seriously detracts from the appearance of the head;

(b) Soft or wet decay affecting any portion of the head.

Metric Conversion Table

§51.556 Metric conversion table.

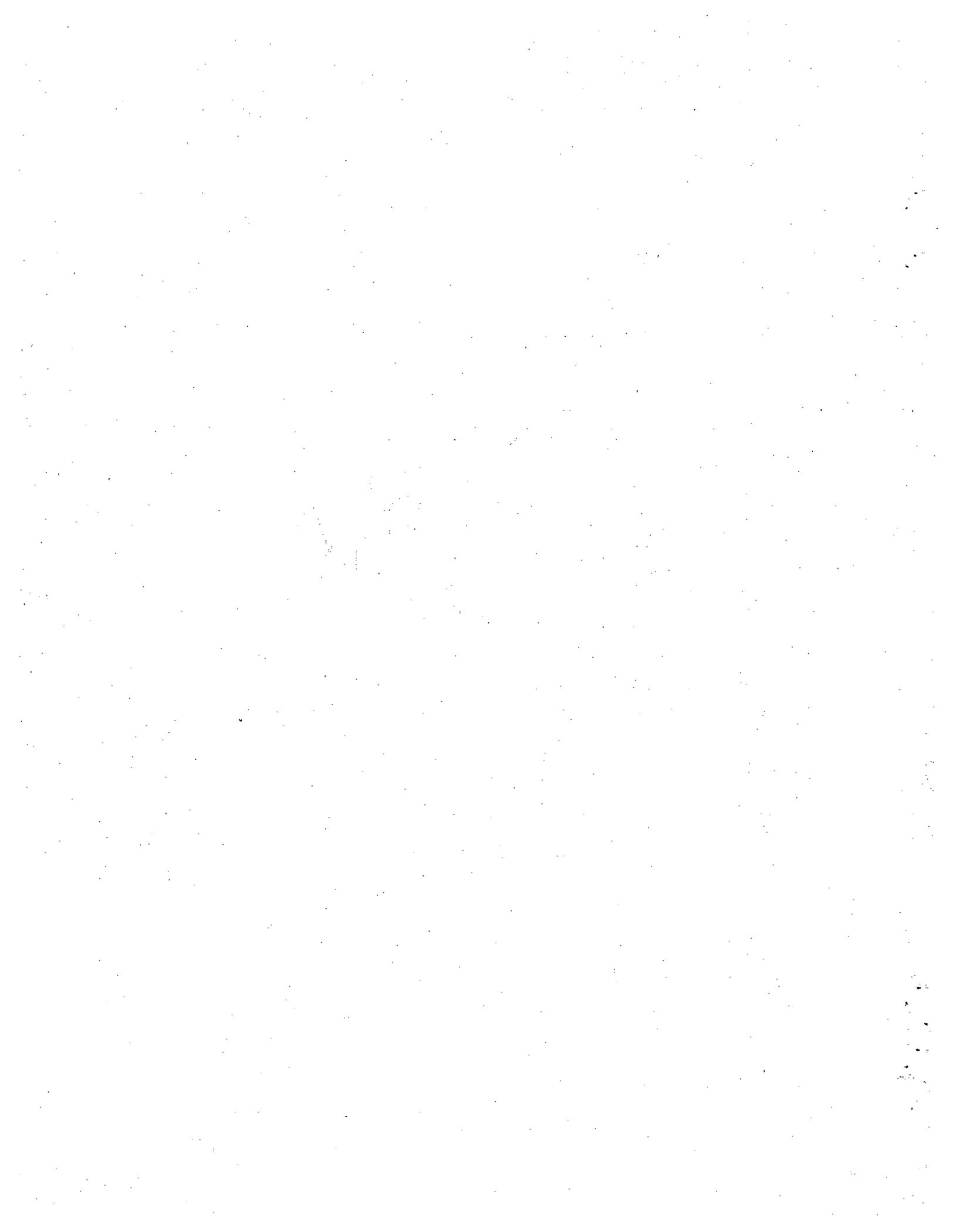
Inches	Millimeters (mm)
1/3 equals.....	3.2
1/4 equals.....	6.4
1/2 equals.....	12.7
3/4 equals.....	19.1
1 equals.....	25.4
1-1/2 equal.....	38.1
2 equals.....	50.8
3 equals.....	76.2
4 equals.....	101.6
5 equals.....	127.0
6 equals.....	152.4
7 equals.....	177.8
8 equals.....	203.2
9 equals.....	228.6



Appendix II

Notesheet & Certificate





INSPECTION STARTED: M M D D Y Y 0 1 1 5 0 0	HOUR: 1 1 5 5	AP: A M	WARNING: Any person who knowingly shall falsify name, brand, size, label, or commodity this memorandum report, or participate in any such action, is subject to a fine of not more than \$1,000 or imprisonment for not more than one year, or both.	U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE											
INSPECTION COMPLETED: M M D D Y Y 0 1 1 5 0 0	HOUR: 0 1 4 5	AP: P M		NS-EXAMPLE #1 FEDERAL STATE INSPECTION WORKSHEET REPORT											
APPLICANT: MIKE'S BEST PRODUCE			CITY/STATE: SANTA MARIA, CA	PAGE: 1	OF: 1										
INSPECTION: APPLICANT'S WAREHOUSE			FILE: FSL 115 710												
COMMERCE NO.: NIA			TYPE: NIA	OTHER ID: YXX											
Product: Variety, Description of Product (Brand, Markings, Size, etc.), Grade Marked, Number and Size of Containers: CANNIFLOWER, "MBP", PRODUCE OF USA, 12, 16 and 20 SIZE/COUNT 815 CARTONS															
GRADE: US No. 1		<input type="checkbox"/> MEETS HARVESTING ORDER <input checked="" type="checkbox"/> MEETS CANADIAN IMPORT REQUIREMENTS <input checked="" type="checkbox"/> MEETS EXPORT APPLE AND PEAR ACT <input checked="" type="checkbox"/> MEETS EXPORT ORANGE AND PLUM ACT <input checked="" type="checkbox"/> MEETS EXPORT GRAPE AND PLUM ACT (EXCEPT FOR EUROPE GREENLAND AND JAPAN) <input checked="" type="checkbox"/> MEETS US IMPORT REQUIREMENTS		At the request of the applicant, a certificate may be issued based upon information contained herein. I, the undersigned, a duly authorized inspector of the United States Department of Agriculture, do hereby certify that at the request of the applicant and on the date indicated, samples of the above product were inspected and the quality and/or condition as shown by said samples were as herein stated. INSPECTOR'S SIGNATURE: Jm. N. Inspector											
CWT: 204	FEE: \$	OT: \$	EXPENSES: \$	TOTAL: \$	REMARKS, ID, ETC.										
DEFECTS		SIZE		ADDITIONAL INFORMATION											
SAMPLE SIZE	TOTAL DEFECTS	DAMAGE (SEE 204)	PER. DAM. BY PER. DAM.	DECK/BOFT ROT	ADDITIONAL DEFECTS	DESCRIPTION OF DEFECTS	MIN. 4"	MAX.	JACKET LEAVE	CLEAN & COMPACT	COLOR	TRIM	JACKET LEAVE	PACK	
															% DAM
* 16	2			0	13	DUV EAB	0	5	0	6	76	0	Y	CL	CF
16	0			0			0	1	0	1	1	1	1	1	1
212 16 2	1			0	6	MEC	0	1	0	1	1	1	1	1	1
12	0			0			0	5 1/2	0	6 1/2	1	1	1	1	1
103-12 1/2	0			0			0	1	0	1	1	1	1	1	1
12	1			0	8	MEC	0	1	0	1	1	1	1	1	1
20 2 1	1			0	10 5	MEC	0	4 1/2	0	5 1/2	1	1	1	1	1
500 20 2	1			0	5	HOL	0	1	0	1	1	1	1	1	1
20	0			0			0	1	0	1	1	1	1	1	1
20	1			0	5	MEC	0	1	0	1	1	1	1	1	1
AVE %				0	47										
FILM WRAPPED HEADS		JACKET LEAVES: FRESH & GREEN, CLEAN HEADS: CLOSELY TRIMMED CURDS: CLEAN, GENERALLY COMPACT and WHITE COLOR.													
16 & 20 1/2 - A.S. For Export		16 1/2: CURDS GENERALLY COMPACT 12 1/2 & 20 1/2: CURDS COMPACT													



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

S-EXAMPLE #1

FEDERAL-STATE INSPECTION CERTIFICATE

SUBLOT

DATE: 01/15/00		TIME: 11:515 A	
DATE: 01/15/00		TIME: 01:415 P	
APPLICANT: MIKE'S BEST PRODUCE		CITY/STATE: SANTA MARIA, CA	FILE: FSL 115 710
INSPECTION POINT: APPLICANT'S WAREHOUSE		OTHER ID: XXX	
CONVEYANCE NO.: N/A		TYPE: A/A	NOTESHEET NO.: NS-EXAMPLE #1
CAULIFLOWER	212 CTNS	"MBP" 16 SIZE/COUNT (FILM WRAPPED)	US No. 1
JACKET LEAVES: FRESH, GREEN, CLEAN, CLOSELY TRIMMED.			
CURDS: CLEAN, GENERALLY COMPACT, WHITE COLOR.			
DEFECTS AVERAGE WITHIN TOLERANCE.			
NO DECAY.			
<small>ABOVE PRODUCTS MEET REQUIREMENTS OF MARKETING ORDER</small>			
<small>MARKETING ORDER PRODUCT OR NAME OF CONTAINER APPROVED BY THE APPLICANT AND IS NOT BEING CANCELLED BY THE INSPECTOR UNLESS OTHERWISE NOTED</small>			
FOR DATA ENTRY ONLY		REMARKS:	
1 0 0 0 0 0 0 0			
GWT: 153			
0 0 0			
OTHER: _____			
INSPECTOR'S SIGNATURE: Jim N. Inspector		DATE ISSUED: 1/15/00	FEE: \$
			O.T.: \$
			EXP: \$
			ESTIMATED TOTAL \$

FV-184 (10-83) (Previous versions may be used)

ORIGINAL



PACK: FT-40 T Film WRAP	PACK:	PACK:	PACK:
Mfg: Gen 71094 in diameter few 4 to 7 1/2	Mfg:	Mfg:	Mfg:

PLI Number	Color ID.	TEMP.	Count	D			SD			D			SD			JL DC	-4"
				None	1	2											
None		38	9	0	0	1	0	0	0	0	0	0	0	0	0	0	
"			9	1	0	0	0	0	0	0	0	0	0	0	0	0	
"		39	9	0	0	0	0	0	0	2	0	0	0	0	0	0	
"			9	0	0	0	0	0	0	1	0	0	0	0	0	0	
"			9	0	0	0	0	0	0	0	0	2	0	0	0	0	
"		40	9	0	0	0	2	1	0	0	0	0	0	0	0	0	
"			9	2	0	0	0	0	0	0	0	0	0	0	0	0	
"			9	1	0	0	0	0	1	0	0	0	0	0	0	0	
"		42	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
"			9	1	0	0	0	0	0	0	0	0	0	0	0	0	
"		38	9	2	0	0	0	0	0	0	0	0	0	0	0	0	
"			9	1	0	0	0	0	0	0	0	0	0	0	0	0	
"		40	9	0	0	0	0	0	0	0	0	0	0	0	0	0	
"			9	0	0	0	0	0	0	0	0	0	0	0	0	0	

6
1
2/1
3
2
6

Curd's Clean, Jacket leaves clean and closely-trimmed.

Curd's White Creamy white & compact
 Jacket leaves Gen. Fresh and green
 Dairy early stage

REMARKS / RESTRICTIONS / SP1 *Inspected during process of unloading*

CARLOT Basis: _____ HOURLY Basis: _____ TRAVEL Time: _____ EXPENSES: _____ EST. TOTAL: _____	REPORTED TO: <i>Bill</i> DATE: <i>01-16-00</i> TIME: <i>8:00 AM</i> REQUESTED BY: <i>Bill</i> DATE: <i>01-10-00</i> TIME: <i>6:00 AM</i>	INSPECTED BY: <i>Carl Smith</i> ASSISTED BY: _____
--	---	---

U.S. GPO: 1964-23-049787

GT 172233

LO

Carrier/lot ID stated by

Million Lot ID

Carrier type / name

Mech. Refrig

Registration unit

01

Per

Open

closed

Ins. site

28MT

01110000615A

Applicant Produce Center
Address C Veete, MA

Shipper
Address Arjo Inc
Sabinas CA

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
INSPECTION CERTIFICATE
EXAMPLE 1

AI: 38

AI: 42

Call/Phone

11921 SNAET "

CA

1347 CARTONS IN

Dr:

00

06

03

02

02

-1

14

00

00

00

01

-1

09

Under size

Quality (Hallowstem) (002296)

Yellow Discolored Tacket leaves (020296)

Tacket leaf Deas

Brown Card Disabration

Card Deas

Checksum

Cards mostly white, some
creamy white & compact.

Tacket leaves generally
black & green.

Card Deas

Many only stage.

GRADE: Fails to grade US NO. 1 only account condition

REMARKS: Inspected during process of unloading

WARNING: Any person who knowingly falsifies
marks, issue, size, weight, or count on this certificate,
or participates in any such actions, is subject to a fine
of not more than \$1,000 or imprisonment for not more
than one year, or both.

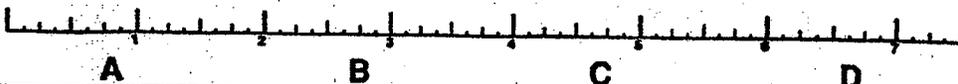
Inspected by: Carl Smith

Inspected by: Cravett MA

ESTIMATED TOTAL

\$ —

FORM PC-3011b-01 Revisions PC-3011b-01 and PC-3011b-02 which are identical



FACE Tight	FACE	FACE	FACE
SIZE Gen 6 to 8" in diameter 2406"	SIZE	SIZE	SIZE

PLI Number	Order ID	TEMP.	CT	60	OK	JL OK	% FUZ	0/100	4"
NONE		35	12	-	1	-	-	-	-
NONE		38	12	-	-	2	11-10	11-	-
NONE		36	12	-	-	-	-	-	-
NONE		12	-	-	-	4	4	31-	-
NONE		12	-	-	-	-	-	-	-
NONE		12	-	-	-	1	-	-	-
					(19%)	(41%)	(12%)	(41%)	
Cards clean Jacket leaves (clean) Easily clean									
Cards gen Creamy white, few clean gen compact. Jacket leaves gen fresh and green.									
Derag easy									

REMARKS / RESTRICTIONS / SPI

CARLOT Book: _____	REPORTED TO: Bobbie	INSPECTED BY:
HOURLY Book: _____	DATE: 08/1/00 TIME: 9:45am	Carly Blowers
TRAVEL Time: _____	REQUESTED BY: James	ASSISTED BY:
EXPENSES: _____	DATE: 3/1/00 TIME: 4:00am	Jordan French
EST. TOTAL: _____		

U.S. GPO: 1997-422-1348/157

