Sweet Corn
Shipping Point and Market Inspection Instructions
Shipping Point and Market Inspection Instructions for Sweet Corn

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 Sweet Corn, 7 CFR Section 51.835.

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

Any portion of these instructions beginning with a section number such as §51.— and followed by bold print are sections or portions of sections copied directly from U.S. standards.

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.)

June 1994

This replaces instructions dated January 1974

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**BLADE** - flat expanded part of the husk.
**COB** - that portion of ear that contains kernels.
**EAR** - the entire portion consisting of shank, cob, husks, and silks.
**HUSKS** - that portion of the ear that acts as a protective covering for the kernels.
**KERNELS** - the portion of the cob that is used for human consumption.
**SHANK** - the extended portion attaching the cob to the stalk and holding the husks in a protective position.
**SILKS** - thread-like emissions on the tip end of the cob.
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(1) Sampling

Representative Sampling

Representative sampling is just as important as correct interpretation of defects and other factors. Accurate determination of these factors 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 the less accessible layers or parts of a load.

Size of Sample

The tolerances in the U.S. Standards for Grades of Sweet Corn are determined on the basis of count. At least twenty-five (25) ears shall be examined from containers that contain 25 ears or more. Whenever a load and/or lot is out of grade because of defects exceeding the package tolerance, the entire contents of those packages shall be examined. However, the entire contents shall be examined in packages that contain less than 25 ears, regardless of quality or condition of the load and/or lot. For example: Sweet corn in consumer type tray packages, which are often packed within master containers, the individual consumer tray (whether it contains 2 ears or 6 ears, etc.) would be the sample and recorded separately on the notesheet.

In packages with 25 ears or more, the sample size may or may not be the total contents of the package. If the sample size is not the entire contents of the package, be sure to keep a separate column on the notesheet for "the number of ears in each package" and "the number of ears in each sample."

When the sample sizes are not uniform, the percentages shall be determined for each sample. To determine the average percentage for the lot, all percentages must be totaled and divided by the number of samples examined.

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. It is the inspector's responsibility to examine enough samples to ensure an accurate picture of the entire load and/or lot. However, for loads and/or lots containing less than 100 containers, a minimum of three samples shall be inspected. (Be sure to take a
(2) Tolerances

§51.840 Tolerances...In order to allow for variations incident to proper grading and handling, the following tolerances, by count, are provided as specified:

(a) For defects. 10 percent in any lot for ears of corn, which fail to meet the requirements of the grade, including therein not more than 2 percent for decay.

(b) For off-size. 5 percent in any lot for ears of corn which fail to meet the requirements as to length of cob.

Total Defects, 10%

including decay 2%

Off-size 5%

(3) Application of Tolerances

§51.842 Application of tolerances...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:

(a) For packages which contain 10 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 10 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,

(b) For packages which contain less than 10 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 5 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 with **10 specimens or more:**

Total Defects \[10\% \times 1-1/2 = 15\%\]  
including decay \[2\% \times 2 = 4\%\]  
Off-size \[5\% \times 2 = 10\%\]

**Except** that at least one defective and one off-size specimen may be permitted in any package.

For packages with **6 to 9 specimens:**

**Double** the tolerance specified

**Except** that at least one defective and one off-size specimen may be permitted in any package.

For packages with **5 specimens or less:**

**Not restricted to percentage of defects**

**Except** 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.

In the above section from the standards there are a few terms that are frequently mentioned. **Packages, individual packages and specimen(s) are defined as follows:**

**Specimen(s) means ear(s) of corn.**

**Individual packages** mean one of the smallest containers that constitute the load and/or lot. The containers may be cartons, crates, sacks or in the case of consumer type packages within master containers, the consumer package (i.e., film wrapped trays) would be the "individual package."

**Packages mean all** of the individual packages that constitute the load and/or lot. The containers may be cartons, crates, sacks or consumer packages (i.e., film wrapped trays) that are within master containers.
(4) Count

§51.841 Requirement as to count...The number of ears of corn in any package may be specified by count or in terms of dozens or half dozens. Variation from the number specified shall be permitted as follows: Provided, That the average for the lot is not less than the number specified nor more than two ears greater than the number specified:

<table>
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<th>Specified number per package:</th>
<th>Variation permitted in individual packages:</th>
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<tbody>
<tr>
<td>1 - 10</td>
<td>0</td>
</tr>
<tr>
<td>11 - 25</td>
<td>2 ears under count, 2 ears over count.</td>
</tr>
<tr>
<td>26 - 60 ears</td>
<td>3 ears under count 5 ears over count.</td>
</tr>
<tr>
<td>more than 60 ears</td>
<td>4 ears under count, 6 ears over count.</td>
</tr>
</tbody>
</table>

If count is marked on the container, in terms of number of ears or in terms of dozens or half dozens, the inspector must determine whether the markings are correct. If count is not marked on the container, no mention should be made of this fact, unless requested to do so by the applicant.

To determine whether the markings are correct, the inspector must count the entire contents of the package and record it on the notesheet. An appropriate column heading would be "number of ears per package." This may be different from the "number of ears per sample." Make sure a sufficient number of samples have been examined to accurately determine whether the requirement as to count for each load and/or lot has been met. The number of ears marked on the container will determine which line to use in the table above. For example, if the container is marked "1 dozen," go to the "specified number per package" column and use the "11 - 25" line, giving a variation of "2 ears under count and 2 ears over count" per individual package.

There are no tolerances for the number of packages that do not meet this specification. Therefore, if any container in a lot does not meet the variation permitted in individual packages, the lot fails to meet the requirements as to count.
Additionally, the average of all the packages in a load and/or lot must average at least the number specified but not more than two ears greater than the number specified. In the example used above, the average must be at least 1 dozen (12 ears per package) but not more than 14 ears per package to meet the requirements as to count.

If the packages meet all the requirements stated above, report on the certificate "Meets marked count" in the "OTHER" section on the market certificates and "Description of Product" on the shipping point certificate. However, if the packages fail to meet variations permitted in individual packages or fails to meet the average, then report a range and an average. For example: (Packages marked "1 dozen"), "Count ranges from 8 to 14, average 10 ears per carton, fails to meet marked count." Finally, if count is not marked on the container, but requested by the applicant, simply give a range and average, and under "REMARKS" state that count was determined and reported at applicant's request.

(5) Products Inspected

The following information shall be given:

- Commodity
- Type of Container
- Distinguishing Marks
- State or Country of Origin
- Quantity Inspected

Commodity

"Sweet CORN" shall be used to describe this commodity in the "PRODUCT" heading. Type, such as "yellow kernels," "white kernels," or "mixed colored kernels" may be used in conjunction with "Sweet CORN" or may be reported in the "Lot ID" section on market notesheets and certificates.

The Inspection Service does not certify variety. When variety is in question, the inspector should inform interested parties that only type may be certified. It may also be pointed out that when type is a factor in a load and/or lot of sweet corn, such as white kernels of corn in a lot of yellow kernels of corn, or ears of field corn in the sweet corn lot, it will be considered a defect. As a guide, corn showing a mixture of white and yellow kernels on the same ear should be scored as a quality defect if the appearance is more than slightly affected to the extent that more than 12 white kernels appear on a 6 inch cob of yellow corn or the same for yellow kernels on a white variety and greater or lesser amounts on larger or smaller ears.
Some varieties show a mixture of white and yellow kernels on the same cob. If the entire lot is of this type then it should be reported as "mixed colored kernels." Full yellow or white ears are a defect of this lot. In order to distinguish between field corn and sweet corn the inspector may have to taste the kernels. If the kernels have a "sweet" taste it is probably sweet corn. Field corn may have dented kernels, and the taste is generally starchy. The silks of field corn are generally a darker brown and the texture of the silks is coarser than the silks of sweet corn. The defect shall be reported as "dissimilar varietal characteristics."

Containers

Sweet Corn is most commonly packed in wirebound crates, cartons, sacks, or film wrapped consumer packages within master containers. The type of container shall always be reported under this heading.

Distinguishing Marks

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/Marks" section. Only the brand name and other pertinent information should appear in this section on the certificate. If the containers bear no brand it shall be stated "No Brand." See the General Inspection Instructions for more specific instructions.

State or Country of Origin

The inspector should not make a positive statement on his/her 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 two or three States. The inspector can certify only to the marks and has no means of knowing what State or country the sweet corn is grown. If packages are not marked or the sweet corn is in bulk, refer to the General Inspection Instructions.

Quantity Inspected

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, it is advisable in such instances for the inspector to make a rough check to determine that a substantial number of the containers reported in the lot are present.

Small lots (100 containers or less) that can be counted with accuracy shall be reported on the inspector's authority as "inspector's count."
(6) Condition of Pack

When sweet corn is packed in sacks or film wrapped trays, the "pack" heading should be crossed out. When sweet corn is packed in crates or cartons, the following terms shall be used to describe pack on the notesheet:

**Very Tight:** This means that the pack is too tight and too much bulge resulting in bruising of the ears in layers next to the cover or bottom.

**Tight:** This is the desirable condition of pack and means that the package is filled sufficiently to prevent any movement of the product within the package and it has the proper bulge without causing bruised kernels.

**Fairly Tight:** This means that the ears are in contact with the lid and practically no movement of the ears within the package, but no bulge is present.

**Slack:** This term is used when the package is not full and there is free movement of the product within the package. This term should be qualified in terms of inches or half inches below the lid.

If crushed ice is in or on the container, it should be mentioned on the notesheet. Finally, when requested to certify as to specified or marked net weight on both stationary lot sampling or on-line sampling, the procedures as described in the General Inspection Instructions must be followed.

(7) Temperature of Product

At shipping point, temperatures are not normally determined or reported. However, due to the importance of pulp temperature of fresh fruits and vegetables, 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. A minimum of three temperatures should be recorded on the notesheet. More temperatures shall be taken if the lot is abnormally cold, heated, or there is a specific request for temperature.

Refer to the General Inspection Instructions for information not covered in this section.
(8) Size

The **U.S. Fancy** grade requires each cob to be at least 6 inches in length. Clipped ears **cannot** grade U.S. Fancy.

The **U.S. Fancy Husked** and the **U.S. No. 1** grades require, unless otherwise specified, the length of each cob, clipped or unclipped, shall be not less than 5 inches.

The **U.S. No. 1 Husked** and the **U.S. No. 2** grades require, unless otherwise specified, the length of each cob, clipped or unclipped, shall be not less than 4 inches.

The U.S. Fancy Husked, U.S. No. 1, U.S. No. 1 Husked, and U.S. No. 2 grades permit clipped ears and unclipped ears in the same package, provided each cob meets the minimum specified length.

**Reporting Size**

When reporting size, the length of the cob shall be reported to the nearest half inch. The length of the cob means the overall length from the tip to the shank end of the cob. Measurement of the ear should include the cob only and not the shank. (See illustration, page ii.)

When reporting size and there is a wide range in the length of cobs in a load and/or lot, the range shall be followed by a “mostly” range, and a positive statement shall be made as to undersize. (For tolerances and application of tolerances see those sections.)

**Example:** Size: Cobs clipped. Generally 5 to 7 inches, mostly 5½ to 6 inches in length. Average 2% undersize. (Refer to the certificate examples in Appendix II for reporting procedures.)

(9) Quality and Condition

Statements pertaining to freshness, maturity, trimming, the amount and kind of quality defects, and the amount of decay is shown under the appropriate headings. Those factors noted with one asterisk (*) shall be reported as **CONDITION** factors on market certificates. Those factors noted with two asterisks (**) may be considered as **QUALITY** or **CONDITION**, depending on the circumstances. Factors with no asterisk are considered as quality only.
In order to determine whether an ear of corn has any defects affecting the kernels, it may be necessary to remove part or all of the husk.

The requirements for the U.S. Fancy and the U.S. Fancy Husked grades are the same, except as to the amount of covering, clipping, trimming, and length of cob. This is also true for the U.S. No. 1 and U.S. No. 1 Husked grades.

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**Trimming**

Trimming pertains to the appearance of the ear as it relates to the loose husks, silks and/or length of shank. Also, keep in mind this is one of the differences between the Husked grades and the non-Husked grades.

§51.843 Definitions..."Well trimmed" means that the ears are practically free from loose husks and that the shank shall be not more than 6 inches (152.4 mm) in length and not extend more than one inch (25.4 mm) beyond the point of attachment of the outside husk.

§51.843 Definitions..."Fairly well trimmed" means that the appearance of the individual ear of corn is not seriously affected by loose husks and that the shank shall not be more than 6 inches (152.4 mm) in length and not extend more than 2 inches (50.8 mm) beyond the point of attachment of the outside husk.

§51.843 Definitions..."Properly trimmed" means that the ear is not damaged by loose husks and silks and that the shank shall not extend more than 1 inch (25.4 mm) from the cob, when present.

The U.S. Fancy and U.S. No. 1 grades require that the ears be well trimmed. The U.S. No. 2 grade requires that the ears be fairly well trimmed. If the ears do not meet the requirements of well trimmed, but meet the requirements of fairly well trimmed, they are considered fairly well trimmed. Fairly well trimmed is a defect of the U.S. Fancy and U.S. No. 1 grades and scored against the total tolerance for either grade. If the ears do not meet the requirements of fairly well trimmed, they are poorly trimmed. Poorly trimmed ears are considered serious damage and scored against the U.S. Fancy, U.S. No. 1, and U.S. No. 2 grades.

The U.S. Fancy Husked and U.S. No. 1 Husked grades require that the ears be properly trimmed. If the ears do not meet the requirements of properly trimmed they are poorly trimmed. Poorly trimmed ears are considered defects and will be scored against the total tolerance for either grade. They are not scored as serious damage against the U.S. Fancy Husked or the U.S. No. 1 Husked grades.
Clipping

Clipping generally refers to the practice of removing worm injury, by cutting or snipping off the end of the ear. The U.S. Fancy grade states "ears shall not be clipped." Therefore, any clipped ears found in a load and/or lot of U.S. Fancy sweet corn shall be considered a defect and scored against the total tolerance for the grade.

§51.843 Definitions..."Properly clipped" means that the tip end of the cob, or the tip end of the cob and husk have been neatly removed approximately at a right angle to the longitudinal axis.

§51.843 Definitions..."Well clipped" means that one or both ends of the cob, or one or both ends of the cob and husk have been neatly removed approximately at a right angle to the longitudinal axis.

The U.S. No. 1 and U.S. No. 2 grades allow the ears to be clipped, but each clipped ear shall be properly clipped. Properly clipped means that the tip end of the cob, or the tip end of the cob and husk may be removed. Therefore, if both ends or the shank end is clipped it is not properly clipped. Ears that are not properly clipped shall be considered poorly clipped, a defect scored against the total tolerance for the grade.

The U.S. Fancy Husked and the U.S. No. 1 Husked grades allow the ears to be clipped, but each clipped ear must be well clipped. Well clipped means that one or both ends of the cob, or both ends of the cob or husk may be removed. Therefore, both ends of the cob may be clipped and not be considered a defect. However, if the ear has a jagged cut or not cut approximately at a right angle, it shall be considered not well clipped. Ears that are not well clipped shall be considered poorly clipped, a defect scored against the total tolerance for either grade.

(See illustrations on following page.)
PROPERLY CLIPPED

WELL CLIPPED
Development (Shape of Ears)

§51.843 Definitions... "Well developed" means that the ears are fairly straight and are not stunted. Nubbins are not well developed ears.

§51.843 Definitions... "Fairly well developed" means that the ears are not stunted to the extent that the appearance is seriously affected.

The U.S. Fancy, U.S. Fancy Husked, U.S. No. 1, and U.S. No. 1 Husked grades require that the ears be well developed. This means that the ears must be fairly straight and not stunted. Therefore, ears which are badly bent, crooked, irregular shaped, stunted, or otherwise ill formed are scored as defects against the total tolerances for the grade. This defect shall be reported as not well developed.

Sometimes ears have one or more undeveloped secondary cobs attached at the base and usually enclosed in the outer layers of husks. Often these small cobs have little or no effect on the shape of the entire ear. They come off easily with the husks, and are not scored. However, unhusked ears that show bulging or on which the secondary cobs cause spreading of the husk so as to expose the kernels on the main cob shall be scored as not well developed.

The U.S. No. 2 grade requires ears to be fairly well developed, which means that they are not stunted to the extent that the appearance is seriously affected. Ears that are not fairly well developed shall be reported as poorly developed. Poorly developed ears are considered serious damage against all grades.

Filling of Cobs

Use the following terms to describe filling of cobs:

Well filled: This is not a requirement of any grade, but when used means that the edible quality or appearance of an unclipped ear is not affected to a greater extent than that of an ear 6 inches in length which has ¾ inch at the tip end with poorly developed kernels or open spaces. When the ear has been clipped there shall be no poorly developed or open spaces.

§51.843 Definitions... "Fairly well filled" means that the rows of kernels show fairly uniform development, and that the appearance and quality of the edible portion of the ear are not materially affected by poorly developed rows. When the ear has not been clipped, not more than one-fourth of the length of the cob may have poorly developed or missing kernels at the tip. When the ear has been clipped, it shall have practically no poorly developed kernels at the tip of the cob. Missing or poorly developed kernels on other parts of the ear
shall not aggregate more than one square inch (6.5 cm²) on a cob 6 inches (152.4 mm) in length, and a proportionally greater area shall be permitted on a longer cob and a proportionally lesser area on a shorter cob.

§51.843 Definitions..."Moderately filled" means that the rows of kernels show fairly uniform development, and that the appearance and quality of the edible portion of the ear are not seriously affected by poorly developed rows. When the ear has not been clipped, more than one-fourth but less than one-third of the length of the cob has poorly developed or missing kernels at the tip. When the ear has been clipped it shall have not more than a slight amount of poorly developed kernels at the tip of the cob. Missing or poorly developed kernels on other parts of the ear shall not aggregate more than one and one-fourth square inches (10.1 cm²) on a cob 6 inches (152.4 mm) in length, and a proportionally greater area shall be permitted on a longer cob and a proportionally lesser area on a shorter cob.

§51.843 Definitions..."Poorly filled" means, on unclipped ears, that the edible quality or appearance is affected to a greater extent than that of an ear 6 inches (152.4 mm) in length which has one-third of the cob at the tip end and aggregate area 1½ inches square (14.5 cm²) on other portions of the ear with undeveloped kernels or open spaces; and means, on clipped ears, that the edible quality or appearance is affected to a greater extent than that of an ear 6 inches (152.4 mm) in length which has one inch (25.4 mm) at the tip end and an aggregate area 1½ inches square (14.5 cm²) on other portions of the ear with undeveloped kernels or open spaces.

The U.S. Fancy, U.S. Fancy Husked, U.S. No. 1, and U.S. No. 1 Husked grades require that the cobs be fairly well filled with plump and milky kernels. The U.S. No. 2 grade requires that the cobs be at least moderately filled with plump and milky kernels.

Ears that do not meet the requirements of fairly well filled, but meet the requirements of moderately filled will be considered defects of the U.S. Fancy, U.S. Fancy Husked, U.S. No. 1, and U.S. No. 1 Husked grades and reported as "not fairly well filled." They are scored against the total tolerance for the grade being applied. Ears that do not meet the requirements of moderately filled are reported as poorly filled. Poorly filled ears are considered serious damage against all grades.

The definitions of fairly well filled and moderately filled have separate guidelines for the following: ears which are not clipped and have poorly developed or missing kernels at the tip; ears that are clipped and have poorly developed or missing kernels at the tip; and, missing or poorly developed kernels on other parts of the ear.

Ears that are not clipped having missing or poorly developed kernels both at the tip of the cob, and on other parts of the cob shall have not more than what is allowable on either portion of the cob. For example: on an unclipped cob 6 inches in length, in order to meet the requirements of fairly well filled, could have not more
than 1½ inches at the tip of the cob with poorly developed or missing kernels; OR, not more than 1 square inch on other parts; OR, a combination on the tip and other portions of the ear which do not exceed the maximum permitted by any of the guidelines. If the cob has a combination of 1½ inches of poorly developed or missing kernels at the tip of the cob, AND any amount on other parts of the cob the ear would be considered "not fairly well filled." Also, if a cob 6 inches in length has 1 square inch of poorly developed or missing kernels on the center portion of the cob (and/or the shank end), AND any amount on the tip end of the cob the ear would be considered "not fairly well filled." (The same applies for moderately filled, except for the allowable amounts on the tip and other portions.)

(See illustrations on following page.)

Covering

The U.S. Fancy grade requires that the cobs be well covered. The U.S. No. 1 and U.S. No. 2 grades require the cobs be fairly well covered. The U.S. Fancy Husked and the U.S. No. 1 Husked grades require the cob to be husked.

§51.843 Definitions..."Well covered" means that the husk enclosing the ear is tight and undisturbed, except that a slight opening may have been made at the tip: Provided, That the disturbed part has been properly replaced so that the appearance of the ear is not more than slightly affected.

§51.843 Definitions..."Fairly well covered" means that the husk enclosing the ear is fairly tight and undisturbed except that an opening may have been made at the tip: Provided, That the disturbed part has been properly replaced so that the appearance of the ear is not materially affected.

§51.843 Definitions..."Husked" means that on the full length of the cob the equivalent of at least 3 rows of kernels are exposed up to the entire cob.

As a guide, if more than 1 inch by 1 inch square at the tip of the cob is exposed, it is considered "not well covered" and scored against the total tolerance for the U.S. Fancy grade. If more than 1 inch by 1½ inches at the tip of the cob is exposed, it is considered "not fairly well covered" and scored as a defect against the total tolerance for the U.S. No. 1 and U.S. No. 2 grades.

If an ear of U.S. Fancy Husked and U.S. No. 1 Husked does not have at least the equivalent of 3 rows of kernels exposed for the full length of the cob, up to the entire cob being exposed, it shall be considered "not husked." This shall be scored as a defect against the total tolerance of either husked grade.
Maturity (★★)

The maturity or age of kernels should be determined by pressing the kernels, about 1/3 the distance from the shank end to the tip of the cob, with sufficient force with the thumb nail to break the kernel(s). By observing the consistency of the kernel(s), the following definitions will assist you in determining the maturity of the ear.

§51.843 Definitions..."Plump and milky" means that the kernels are well developed and the contents have a milky, creamy, or clear jelly-like consistency.

Immature means that the kernels are small, watery, or lack plumpness and are of very little value for eating purposes. Score this defect as serious damage in all grades, and as a quality factor en route or at destination when the entire cob is affected. If it is only a few kernels or a portion thereof, use the definitions of filling of the cobs for the appropriate grades to determine if the cob is to be scored. [See section on Filling of Cobs.]

Overmature means that the kernels are tough and contain very little juice; the contents are mealy, of a thick creamy or starchy consistency; or are too hard or tough for table use. Score this defect as serious damage in all grades, and as a condition factor en route or at destination when the entire cob is affected. If it is only a few kernels or a portion thereof, use the definitions of filling of the cobs for the appropriate grades to determine if the cob is to be scored. [See section on Filling of Cobs.]

Freshness of Husk (★)

§51.843 Definitions..."Fresh" means that the husks have fairly good green color and are not badly wilted.

There are two requirements in the definition of "fresh," (1) husks must not be badly wilted and (2) husks have fairly good green color. Husks may be badly wilted and still have fairly good green color; also, husks may be yellow in color and not be badly wilted. Therefore, it is necessary to report freshness and color separately on the notesheet. However, if the ear is either badly wilted or not fairly good green color, it will be considered a defect and scored against the total tolerance for the grade. (Both requirements must be met.)

Terms used to describe color are as follows: good green, dark green, green, and light green (considered fairly good green color); turning yellow, yellow, turning brown, and brown (considered NOT fairly good green color and scored as a defect).

Terms used to describe the stages of wilting are as follows: fresh, slightly wilted, and wilted (considered not badly wilted); badly wilted (considered a defect).
Badly wilted means that most of the husks on an ear lack succulence, are weak and limp. The husks may be dry and papery.

Other Defects

Worms and Insects (★★)

§51.843 Definitions... "Insect or worm injury" means that insect or worm frass is present, or there is visible evidence of insect or worm injury.

§51.843 Definitions... "Damage" by worm injury on unclipped ears when extending more than ½ inches (38.1 mm) from the tip on an ear 6 inches (152.4 mm) in length (proportionately greater or lesser amounts permitted on longer or shorter ears, respectively), or when affecting the kernels on other parts of the ear or any worm injury on clipped ears.

§51.843 Definitions... “Serious damage" by worm injury on unclipped ears when extending more than 2 inches (50.8 mm) from the tip on an ear 6 inches (152.4 mm) in length (proportionately greater or lesser amounts permitted on longer or shorter ears, respectively), or when affecting more than 4 kernels on other parts of the cob, or any worm injury on clipped ears extending more than one-fourth inch (6.4 mm) from the tip.

Worms, Insects and Insect or Worm Injury. Ears of sweet corn may be attacked by several types of insects or worms. Generally the worms and/or insects attack the tip end of the ear and burrow through the silks to the tip of the cob. It is generally at the tip of the cob where they will begin to feed on the kernels. Insect or worm injury pertains to the feeding, frass or other visible evidence left behind by the worm and/or insect, but not the insect itself. The practice of clipping the cobs concerns the removal of worm or insect injury. Scoring the presence of worms, insects and/or worm or insect injury will depend upon the grade being applied to the load and/or lot of sweet corn.

In the U.S. Fancy and U.S. Fancy Husked grades the standards states “free from worms and free from insect or worm injury." Therefore, any worms or insects present must be scored as a defect against these grades. Also, all ears showing any amount of insect or wormy injury must be scored as a defect against the total tolerance for the grades.

The U.S. No. 1 and U.S. No. 1 Husked grades do not have any specific guidelines in the standards as to how to score the presence of worms and/or insects. Therefore, they will not be scored, but may be reported on the certificate as not affecting grade, reported at applicant's request. Even though the presence of worms and/or insects is not to be scored, a separate column should be kept on the notesheet in the event that the applicant requests this factor to be reported.
The U.S. No. 1 and U.S. No. 1 Husked grades require that the ears be "free from damage by worms or other insects." This means that on unclipped ears when the injury extends more than 1 1/2 inches from the tip on an ear 6 inches in length (proportionally greater or lesser amounts permitted on longer or shorter ears, respectively) it shall be damaged. If the injury affects kernels on other parts of the ear, or any worm injury on clipped ears shall be considered damaged. Any worm or insect injury of lesser amounts than above and/or the presence of worms and/or insects may be reported on the certificate as "not affecting grade, reported at applicant's request."

The U.S. No. 2 grade does not have any specific guidelines in the standards as to how to score the presence of worms and/or insects. Therefore, they will not be scored, but may be reported on the certificate as not affecting grade, reported at applicant's request. Even though the presence of worms and/or insects is not to be scored, a separate column should be kept on the notesheet in the event that the applicant requests this factor to be reported.

The U.S. No. 2 grade requires that the ears be "free from serious damage by worms or other insects." This means that on unclipped ears when the injury extends more than 2 inches from the tip on an ear 6 inches in length (proportionally greater or lesser amounts permitted on longer or shorter ears, respectively) it shall be seriously damaged. If the injury affects more than 4 kernels on other parts of the ear, or any worm injury on clipped ears extending more 1/4 inch from the tip shall be considered seriously damaged. Any worm or insect injury of lesser amounts than above and/or the presence of worms and/or insects may be reported on the certificate as "not affecting grade, reported at applicant's request."

En route or at destination, if the worms or insects are live, or there is evidence of fresh frass, which occurred during transit, treat as a condition factor. If the worms or insects are dead, and the worm or insect injury is old, treat as a quality factor. If both live and dead worms or insects are present, treat as a condition factor.

Auxiliary Ears

Auxiliary ears are scored under the general definitions for injury, damage, and serious damage. Serious damage must seriously detract from the appearance and have multiple auxiliary ears before being scored as such. Visual aid, COR-1-IDENT, has been developed to help identify this quality defect.

Smut

Smut usually appears at the tip of the ear as white galls, which turn brown to black and affect the kernels with a dust-like fungus. All visible stages of this disease shall be considered a defect and scored as serious damage in all grades.
Mechanical

Mechanical refers to the crushing or breaking of kernels due to the harvesting or packaging of the ears of corn. En route or at destination, if the kernels are crushed and/or broken and appear dry and discolored, score and report them as a quality defect. However, if the kernels are freshly crushed and/or broken, with the milky substance leaking from the kernels, it shall be scored and reported as a condition defect. The following table gives the number of kernels allowed before scoring as injury, damage, or serious damage.

§51.644 Classification of defects.

Number of affected kernels allowed for the following defects: Mechanical, Bird¹, Disease, and Indented Kernels.

<table>
<thead>
<tr>
<th>Length of cob</th>
<th>Injury</th>
<th>Damage</th>
<th>Serious Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 inches (76.2 mm) to 6 inches (152.4 mm)</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>more than 6 inches (152.4 mm) to 10 inches (254.0 mm)</td>
<td>8</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>more than 10 inches (254.0 mm) to 13 inches (330.2 mm)</td>
<td>12</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

¹ In scoring injury, if more than the number of kernels allowed above are discolored or punctured or if the husks have been penetrated in more than 1 place; damage, if more than the number of kernels allowed above are discolored or punctured or if the husks have been penetrated in more than 2 places; serious damage, if more than the number of kernels allowed above are discolored or punctured or if the husks have been penetrated in more than 3 places.

Bird Injury, Damage, or Serious Damage

Birds sometimes congregate on corn fields and inflict extensive damage to ears of corn. Most of the damage occurs at the tip of the cob. The bird-pecked kernels are usually dry, discolored and detract from the appearance of the cob.

Use the table in the standards or see the mechanical section for scoring injury, damage, or serious damage caused by birds.
Indented Kernels (•)

Indented means any depression that is below the natural curvature of the kernel excluding those kernels on the tip of the cob covered under the definition of fairly well filled.

The cause of kernels indenting has not been determined. However, several have thought it to be a sign of overmaturity. Sometimes indented kernels may be associated with overmaturity when the ears are tough and dry. If ears of corn that have indented kernels are also overmature, then score the ear as overmature. If ears are not overmature, but have indented kernels, then use the table in the standards or see the mechanical section for scoring as injury, damage, or serious damage.

Discoloration (★★)

Discoloration means that which affects the husks or blades due to frost, sprayburn or other similar types of discoloration.

§51.843 Definitions..."Injury by discoloration" discoloration caused by frost or sprayburn, or similar types of discoloration when affecting an aggregate area of more than 3 square inches (58.1 cm²) on the husk, or when exceeding an aggregate area of 25 percent of the surface of all blades.

§51.843 Definitions..."Damage" discoloration caused by frost or sprayburn, or similar types of discoloration when affecting an aggregate area of more than 5 square inches (161.3 cm²) on the husk, or when exceeding an aggregate area of 50 percent of the surface of all blades.

Score as serious damage when the discoloration seriously detracts from the appearance of the ear.

If the discoloration is of a type that may increase or occur during transit, treat as a condition factor en route or at destination.

Rust (•)

Rust usually appears as oval to elongated small blisters or pimples, which are of a cinnamon brown color affecting the husk. When the blisters or pimples rupture they release red or black spores, which causes the rust to affect the husks of ears of sweet corn several layers deep.
The U.S. Fancy, U.S. Fancy Husked, U.S. No. 1 and U.S. No. 1 Husked grades require that the ears of sweet corn be free from injury caused by rust.

§51.843 Definitions..."Injury by rust" rust when the aggregate area on the husk exceeds one square inch (6.5 cm²), or when the rust extends deeper than 2 layers of husks.

Score as damage when materially detracting from the appearance, and as serious damage against the U.S. No. 2 grade when it seriously detracts from the appearance.

Decay (*)

Decay in corn usually occurs as a tannish to dark brown color of affected portions of husks or kernels. It is usually accompanied by a thick and slightly sticky slime. The tolerance for decay is 2%.

The portion of the ear most susceptible to decay is the silk. They may become slimy or moldy under certain conditions. Ears having decayed silks shall be scored against the 2% tolerance for decay.

In judging ears which have abnormal appearing silks, be very careful not to confuse a wet condition with decay. Silks become watersoaked in hydrocooling and from load icing. The brown, dead portions often have a soft, mushy texture. Silks should be considered as affected by decay only when they are definitely slimy or moldy and will disintegrate when pressed between the thumb and forefingers.

Silks that are moldy or slick and slimy should not be scored as defects, unless accompanied by decay. However, if an applicant requests a percentage of moldy and/or slick or slimy silks, report it as "not affecting grade, report at applicant's request."

(10) Grade

Under this heading a statement shall be made showing whether or not the lot(s) inspected meet the requirements of the grade being applied. Other specifications for which the application was based and/or percentage of U.S. No. 1 quality shall also be reported here.
(11) Remarks

Under this heading any explanatory or qualifying statements that are necessary to complete the certificate should be made. They may include one or more of the following:

- Restrictions to load, size, or weight.
- Information supplied by the applicant such as, carrier number, lot number, designations, etc.
- Cross reference to another certificate number such as in re-inspections, appeals, etc.
- Contract specifications.
- Factors not affecting grade reported at applicant's request.
United States Standards for Grades of Sweet Corn

Effective February 12, 1992

This publication may be duplicated without authorization from USDA.
United States Standards for Grades of Sweet Corn
7 CFR 51

Grades
Sec.
51.835 U.S. Fancy.
51.836 U.S. Fancy, Husked.
51.837 U.S. No. 1.
51.838 U.S. No. 1, Husked.
51.839 U.S. No. 2.

Tolerances
51.840 Tolerances.

Count
51.841 Requirement as to count.

Application of Tolerances
51.842 Application of tolerances.

Definitions
51.843 Definitions.

Classification of Defects
51.844 Classification of defects.

Metric Conversion Table
51.845 Metric conversion table.

Authority: Secs. 203, 205, 60 Stat 1087 as amended, 1090 as amended; 7 U.S.C. 1622, 1624, unless otherwise noted.

§ 51.835 U.S. Fancy.
"U.S. Fancy" consists of ears of sweet corn which meet the following requirements:

(a) Basic Requirements:
(1) Similar varietal characteristics;
(2) Well trimmed; and,
(3) Well developed.

(b) Free From:
(1) Smut;
(2) Worms;
(3) Insect or worm injury; and,
(4) Decay.

(c) Free From Injury Caused By:
(1) Rust;
(2) Discoloration;
(3) Birds;
(4) Mechanical;
(5) Disease; and,
(6) Other means. (See § 51.843)

(d) Cobs shall be fairly well filled with plump and milky kernels and well covered with fresh husks.

(e) Ears shall not be clipped.

(f) The length of each cob shall be not less than 6 inches (152.4 mm).

(g) For tolerances see § 51.840.

§ 51.836 U.S. Fancy, Husked.
"U.S. Fancy, Husked" consists of husked ears of sweet corn which meet the requirements of the U.S. Fancy grade except those pertaining to amount of covering, trimming, clipping and length of cob. Sweet corn of this grade shall be:

(a) Husked (any remaining husk must be fresh).

(b) Properly trimmed.

(c) Each ear may be clipped but each clipped ear must be well clipped.

(d) The length of each cob clipped or unclipped, shall be not less than 5 inches (127.0 mm), unless otherwise specified.

(e) For tolerances see § 51.840.

§ 51.837 U.S. No. 1.
"U.S. No. 1" consists of ears of sweet corn which meet the following requirements:

(a) Basic Requirements:
(1) Similar varietal characteristics;
(2) Well trimmed; and,
(3) Well developed.

(b) Free From:
(1) Smut; and,
(2) Decay.

(c) Free From Injury Caused By:
(1) Rust.

(d) Free From Damage Caused By:
(1) Discoloration;
(2) Birds;
(3) Worms;
(4) Other insects;
(5) Disease;
(6) Mechanical; and,
(7) Other means. (See § 51.843)

(e) Cobs shall be fairly well filled with plump and milky kernels and fairly well covered with fresh husks.

(f) Each ear may be clipped, but each clipped ear shall be properly clipped.
(g) The length of each cob, clipped or unclipped, shall be not less than 5 inches (127.0 mm), unless otherwise specified.

(h) For tolerances see § 51.840.

§ 51.838 U.S. No. 1, Husked.

"U.S. No. 1, Husked" consists of husked ears of sweet corn which meet the requirements of the U.S. No. 1 grade except those pertaining to amount of covering, trimming, clipping and length of cob. Sweet corn of this grade shall be:

(a) Husked (any remaining husk must be fresh).

(b) Properly trimmed.

(c) Each ear may be clipped but each clipped ear must be well clipped.

(d) The length of each cob clipped or unclipped, shall be not less than 4 inches (101.6 mm), unless otherwise specified.

(e) For tolerances see § 51.840.

§ 51.839 U.S. No. 2.

"U.S. No. 2" consists of ears of sweet corn which meet the following requirements:

(a) Basic Requirements:

(1) Similar varietal characteristics;
(2) Fairly well trimmed; and,
(3) Fairly well developed.

(b) Free from:

(1) Smut; and,
(2) Decay.

(c) Free From Serious Damage Caused By:

(1) Birds;
(2) Worms;
(3) Other insects;
(4) Disease;
(5) Mechanical; and,
(6) Other means. (See § 51.843)

(d) Cobs shall be at least moderately filled with plump and milky kernels and fairly well covered with fresh husks.

(e) Each ear may be clipped, but each clipped ear shall be properly clipped.

(f) The length of each cob, clipped or unclipped shall be not less than 4 inches (101.6 mm), unless otherwise specified.

(g) For tolerances see § 51.840.

§ 51.840 Tolerances.

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

(a) For defects. 10 percent in any lot for ears of corn which fail to meet the requirements of the grade, including therein not more than 2 percent for decay.

(b) For off-size. 5 percent in any lot for ears of corn which fail to meet the requirements as to length of cob.

§ 51.841 Requirement as to count.

The number of ears of corn in any package may be specified by count or in terms of dozens or half dozens. Variation from the number specified shall be permitted as follows: Provided, That the average for the lot is not less than the number specified nor more than two ears greater than the number specified:

<table>
<thead>
<tr>
<th>Specified number per package:</th>
<th>Variation permitted in individual packages:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 10 ears..................</td>
<td>0.</td>
</tr>
<tr>
<td>11 - 25 ears................</td>
<td>2 ears under count, 2 ears over count.</td>
</tr>
<tr>
<td>26 - 60 ears................</td>
<td>3 ears under count, 5 ears over count.</td>
</tr>
<tr>
<td>More than 60 ears...........</td>
<td>4 ears under count, 6 ears over count.</td>
</tr>
</tbody>
</table>

Application of Tolerances

§ 51.842 Application of tolerances.

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:

(a) For packages which contain 10 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 10 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,

(b) For packages which contain less than 10 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 5 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

§ 51.843 Definitions.

(a) Similar varietal characteristics means that the ears in any package have similar kernel color and character of growth. Ears of field corn and sweet corn, or ears having
white color kernels, yellow color kernels and mixed color kernels of corn, shall not be mixed.

(b) *Well trimmed* means that the ears are practically free from loose husks and that the shank shall be not more than 6 inches (152.4 mm) in length and not extend more than one inch (25.4 mm) beyond the point of attachment of the outside husk.

(c) *Well developed* means that the ears are fairly straight and are not stunted. Nubbins are not well developed ears.

(d) *Insect or worm injury* means that insect or worm frass is present, or there is visible evidence of insect or worm injury.

(e) *Injury* means any defect listed in §51.844 or any defect which more than slightly affects the appearance, or the edible or shipping quality of the ear. 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 injury:

1. Rust when the aggregate area on the husk exceeds one square inch (6.5 cm²) or when the rust extends deeper than 2 layers of husks; and,
2. Discoloration caused by frost or sprayburn, or similar types of discoloration when affecting an aggregate area of more than 3 square inches (58.1 cm²) on the husk, or when exceeding an aggregate area of 25 percent of the surface of all blades.

(f) *Fairly well filled* means that the rows of kernels show fairly uniform development, and that the appearance and quality of the edible portion of the ear are not materially affected by poorly developed rows. When the ear has not been clipped, not more than one-fourth of the length of the cob may have poorly developed or missing kernels at the tip. When the ear has been clipped, it shall have practically no poorly developed kernels at the tip of the cob. Missing or poorly developed kernels on other parts of the ear shall not aggregate more than one square inch (6.5 cm²) on a cob 6 inches (152.4 mm) in length, and a proportionately greater area shall be permitted on a longer cob and a proportionately lesser area on a shorter cob.

(g) *Pump and milky* means that the kernels are well developed and the contents have a milky, creamy, or clear jelly-like consistency.

(h) *Well covered* means that the husk enclosing the ear is tight and undisturbed, except that a slight opening may have been made at the tip: Provided, That the disturbed part has been properly replaced so that the appearance of the ear is not more than slightly affected.

(i) *Fresh* means that the husks have fairly good green color and are not badly wilted.

(j) *Husked* means that on the full length of the cob the equivalent of at least 3 rows of kernels are exposed up to the entire cob.

(k) *Well clipped* means that one or both ends of the cob, or one or both ends of the cob and husk have been neatly removed approximately at a right angle to the longitudinal axis.

(l) *Properly trimmed* means that the ear is not damaged by loose husks and silks and that the shank shall not extend more than 1 inch (25.4 mm) from the cob, when present.

(m) *Damage* means any defect listed in §51.844 or any defect which materially affects the appearance, or the edible or shipping quality of the ear. 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:

1. Discoloration caused by frost or sprayburn, or similar types of discoloration when affecting an aggregate area of more than 5 square inches (161.3 cm²) on the husk, or when exceeding an aggregate area of 50 percent of the surface of all blades; and,
2. Worm injury on unclipped ears when extending more than 1½ inches (38.1 mm) from the tip on an ear 6 inches (152.4 mm) in length (proportionately greater or lesser amounts permitted on longer or shorter ears, respectively), or when affecting the kernels on other parts of the ear or any worm injury on clipped ears.

(n) *Fairly well covered* means that the husk enclosing the ear is fairly tight and undisturbed except that an opening may have been made at the tip: Provided, That the disturbed part has been properly replaced so that the appearance of the ear is not materially affected.

(o) *Properly clipped* means that the tip end of the cob, or the tip end of the cob and husk have been neatly removed approximately at a right angle to the longitudinal axis.

(p) *Fairly well trimmed* means that the appearance of the individual ear of corn is not seriously affected by loose husks and that the shank shall not be more than 6 inches (152.4 mm) in length and not extend more than 2 inches (50.8 mm) beyond the point of attachment of the outside husk.

(q) *Fairly well developed* means that the ears are not stunted to the extent that the appearance is seriously affected.

(r) *Serious damage* means any defect listed in §51.844 or any defect which seriously affects the appearance, or the edible or shipping quality of the ear. The following defects or combinations of defects, the seriousness of which exceeds the maximum allowed for any one defect, shall be considered as serious damage:

1. Worm injury on unclipped ears when extending more than 2 inches (50.8 mm) from the tip on an ear 6 inches (152.4 mm) in length (proportionately greater or lesser amounts permitted on longer or shorter ears, respectively), or when affecting more than 4 kernels on other parts of the cob, or any worm injury on clipped ears extending more than one-fourth inch (6.4 mm) from the tip.

(s) *Moderately filled* means that the rows of kernels show fairly uniform development, and that the appearance and quality of the edible portion of the ear are not seriously affected by poorly developed rows. When the ear has not
been clipped, more than one-fourth but less than one-third of the length of the cob has poorly developed or missing kernels at the tip. When the ear has been clipped it shall have not more than a slight amount of poorly developed kernels at the tip of the cob. Missing or poorly developed kernels on other parts of the ear shall not aggregate more than one and one-fourth square inches (10.1 cm²) on a cob 6 inches (152.4 mm) in length, and a proportionally greater area shall be permitted on a longer cob and a proportionally lesser area on a shorter cob.

(t) Poorly filled means, on unclipped ears, that the edible quality or appearance is affected to a greater extent than that of an ear 6 inches (152.4 mm) in length which has one-third of the cob at the tip end and an aggregate area 1½ inches square (14.5 cm²) on other portions of the ear with undeveloped kernels or open spaces; and means, on clipped ears, that the edible quality or appearance is affected to a greater extent than that of an ear 6 inches (152.4 mm) in length which has one inch (25.4 mm) at the tip end and an aggregate area 1½ inches square (14.5 cm²) on other portions of the ear with undeveloped kernels or open spaces.

Classification of Defects
§ 51.844 Classification of defects.

Number of affected kernels allowed for the following defects:

Mechanical, Bird¹, Disease, and Indented Kernels.

<table>
<thead>
<tr>
<th>Length of Cob</th>
<th>Injury</th>
<th>Damage</th>
<th>Serious Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 inches (76.2 mm) to 6 inches (152.4 mm)</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>more than 6 inches (152.4 mm) to 10 inches (254.0)</td>
<td>8</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>more than 10 inches (254.0 mm) to 13 inches (330.2 mm)</td>
<td>12</td>
<td>18</td>
<td>24</td>
</tr>
</tbody>
</table>

¹ In scoring injury, if more than the number of kernels allowed above are discolored or punctured or if the husks have been penetrated in more than 1 place; damage, if more than the number of kernels allowed above are discolored or punctured or if the husks have been penetrated in more than 2 places; serious damage, if more than the number of kernels allowed above are discolored or punctured or if the husks have been penetrated in more than 3 places.
Appendix II
Certificate & Notesheet Examples
Shipping Point
Notesheets and Certificates
<table>
<thead>
<tr>
<th>SIZE</th>
<th>OvM</th>
</tr>
</thead>
<tbody>
<tr>
<td>07</td>
<td>44</td>
</tr>
<tr>
<td>09</td>
<td>44</td>
</tr>
<tr>
<td>08</td>
<td>47</td>
</tr>
<tr>
<td>05</td>
<td>50</td>
</tr>
</tbody>
</table>

**OM = Overmature**
# Federal-State Inspection Certificate

**Applicant:** PLANTATION PRODUCE INC.  
**City:** Camilla, GA  
**P.O. No.:** 5005

<table>
<thead>
<tr>
<th>Product</th>
<th>Grade</th>
<th>remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWEET CORN</td>
<td>Chip Brand</td>
<td>U.S. Fancy</td>
</tr>
<tr>
<td></td>
<td>1.09 bushel</td>
<td>7½ to 9 inches in length. Mostly 8 to 9 inches in length. No undersize. Grade defect average within tolerance. No Decay.</td>
</tr>
</tbody>
</table>

**Remarks:** Inspection based on U.S. Fancy grade at applicant's request.

---

**Inspector:** Jane Doe  
**Date:** 7/3/93  
**Signature:** Jane Doe

---

**Notes:**
- The undersigned, a duly authorized inspector of the United States Department of Agriculture, do hereby certify that samples of the herein described product were inspected and the grades as shown by said samples were as herein stated.
- Estimated Total: $____

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Appendix II - ii
FEDERAL-STATE INSPECTION NOTESHEET

Applicant: Pioneer Inc., Bainbridge, GA
P.O.: *5183

Inspection Point: Lot inspection
Type: 
Certificate No.: Example #2

Product / Variety, Number & Size of Container, Description of Product (Brand, Markings, Size, etc.), Grade Marked:
SWEET CORN, mixed color kernel type, "No Brand", 1.04 bushel, Producer USA

450 cartons

<table>
<thead>
<tr>
<th>Sample Size (cartons)</th>
<th>Total Defects</th>
<th>Restrictive Tolerances</th>
<th>Additional Tolerances</th>
<th>Description of Defects</th>
<th>Size</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>58</td>
<td>9%</td>
<td>MF &gt; PF</td>
<td>(3)&lt;.00</td>
<td>58</td>
<td>-</td>
<td>kkgg</td>
</tr>
<tr>
<td>64</td>
<td>12%</td>
<td>MF &gt; IM</td>
<td>(5)&lt;.00</td>
<td>64</td>
<td>-</td>
<td>gg</td>
</tr>
<tr>
<td>51</td>
<td>11%</td>
<td>NWD &gt; IMD &gt; MMD</td>
<td>(5)&lt;.00</td>
<td>51</td>
<td>-</td>
<td>kkgg</td>
</tr>
<tr>
<td>52</td>
<td>13%</td>
<td>MF &gt; PF, IMD</td>
<td>(5)&lt;.00</td>
<td>52</td>
<td>-</td>
<td>kkgg</td>
</tr>
<tr>
<td>54</td>
<td>13%</td>
<td>NWD &gt; IMD &gt; MMD</td>
<td>(5)&lt;.00</td>
<td>54</td>
<td>-</td>
<td>kkgg</td>
</tr>
<tr>
<td>55</td>
<td>10%</td>
<td>MF &gt; PF, IMD</td>
<td>(5)&lt;.00</td>
<td>55</td>
<td>-</td>
<td>kkgg</td>
</tr>
</tbody>
</table>

NWD = Not well developed
IM = Immature
MF = Moderately filled
PF = Poorly filled

Remarks:
Inspection based on approximately 80% U.S. No. 1 quality at applicant's request.

Inspector's Signature: John Doe
Date: 7/21/93
Page 1 of 1
FEDERAL-STATE INSPECTION CERTIFICATE

SWEET CORN

DESCRIPTION OF PRODUCT:

Grade defects range 16 to 25%, average 21%, including 9% serious damage consisting of moderately filled to poorly filled, small, immature, and not well developed.

No decay.

Remarks:

Inspection based on approximately 80%. U.S. No. 1 quality at applicants request.
Market
Notesheets and Certificates
Center No. Stated by: Applicant
Additional Lot ID: __________
Center Type/Name: __________
Refrigeration Unit: __________
Doors: ON OFF OPEN
Condition of Carrier: __________
Inspection Site: Applicant's Warehouse

APPLICANT: All Produce
Address: Anywhere, ME
SHIPPER: Sweet Corn Express
Address: Pompano Beach, FL

A: PRODUCT: Sweet CORN
   NUMBER OR CONTAINERS: 75 crates
   TEMPERATURE: 38° - 40° F
   BRANDS / MARKS: Yellow kernelled Sweet CORN, in wirebound crates, labeled "Honey 4 deg. Sweet Corn Express, Pompano Beach, FL, Produce of U.S.A."

B: PRODUCT: Sweet CORN
   NUMBER OR CONTAINERS: 50 cartons
   TEMPERATURE: 39° - 40° F
   MIXED colored kernels of Sweet CORN in consumer packages printed "Sweet Corn Express, U.S.A., 12 oz. (6 cans), Pompano Beach, FL, Produce of U.S.A."

C: PRODUCT: 
   NUMBER OR CONTAINERS: MAP COUNT
   TEMPERATURE: 

D: PRODUCT: 
   NUMBER OR CONTAINERS: MAP COUNT
   TEMPERATURE: 

Condition of Load & Containers: 
M STACKED ON PALLET AT ABOVE LOCATION ( ) IN-LOAD ( ) PARTLY UNLOADED

FORM FV-300-N (3-63)
### Storesheet

<table>
<thead>
<tr>
<th>FLU Number</th>
<th>Other</th>
<th>TEMP.</th>
<th>Sample</th>
<th>D.E.</th>
<th>D.E. History</th>
<th>Fresh Nuch</th>
<th>Rast</th>
<th>Check</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Yellow</td>
<td>38°</td>
<td>40</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>10</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>None</td>
<td>Kernel</td>
<td>40°</td>
<td>25</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>20</td>
<td>48</td>
<td>0</td>
</tr>
<tr>
<td>None</td>
<td></td>
<td>38°</td>
<td>25</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>10</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fruits plump, melon
Husk fresh, green

### Remarks

- Cobs clipped
- Been hushed.
- Husk remaining is fresh, green.
- Husk plump, milky.

### Presence of Bombs

Presence of Bombs reported at applicants request.

---

**Carlot Basis:**

**Hourly Basis:**

**Travel Time:**

**Expenses:**

**Total:**

**Reported To:**

**Inspected By:**

**Assisted By:**

**Date:** 7/10/93

**Time:** 8:55 AM

**Date:** 7/10/93

**Time:** 7:00 AM

---


Appendix II -vi
**Applicant:** All Produce  
**Address:** Anywhere, ME

**Shipper:** Sweet Corn Express  
**Address:** Pompano Beach, FL

---

**Temp. & Humidity:**

<table>
<thead>
<tr>
<th>A</th>
<th>38</th>
<th>40</th>
<th>Sweet CORN</th>
<th>&quot;Honey&quot; 4 doz.</th>
<th>FL Yellow kernels</th>
<th>75 crates</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>39</td>
<td>42</td>
<td>Sweet CORN</td>
<td>&quot;Sweet&quot; Corn Express, U.S. No. 1, Husk FL Mixed color kernels</td>
<td>50 cartons</td>
<td></td>
</tr>
</tbody>
</table>

---

**AVERAGE:**

| A | 02 | 00 | Undersize | Quality 74 to 13%, not fairly well-filled, poorly trimmed, poorly clipped | 7 inches in length, Fresh mechanical damage (3 to 12%) |
| B | 00 | 00 | Undersize | Quality (0 to 17%), not husked, old mechanical damage | Length, cobs clipped. Generally husked. |

---

**Defects:**

<table>
<thead>
<tr>
<th>A</th>
<th>01</th>
<th>02</th>
<th>Checksum</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>03</td>
<td>00</td>
<td>Checksum</td>
</tr>
</tbody>
</table>

---

**Remarks:**

Lot B: 5 1/2 to 6 inches in length. Cobs clipped. Generally husked.  
Lot B: Average 3%, live worms present, not affecting grade, reported at applicant's request.

---

**Grade:**

Lot A: Fails to grade, U.S. No. 1 account condition. Fails to meet count as marked.  
Lot B: U.S. No., Husked.

---

**Estimated Total:**

*FORM FY-209(12-02) Replaces FY-209 (6-96) and FY-208 (1-90) which are obsolete.*

Joe Inspector  
Anywhere, ME
Carrier No. Printed by: 

Additional Lot ID: P.O. #001

Carrier Type / Name: Mechanical Refrigerator

Refrigeration Unit: On

Condition of Carrier: 1 to 2 inches of top ice throughout load.

Applicant's Dock

Inspection Site: Applicant's Dock

APPLICANT: My Produce

Address: Seattle, WA

SHIPPER: Best Corn

Address: Somewhere, CA.

PRODUCT: A: Sweet CORN

Number of containers: 800 cartons: N

Temperature: 39° - 43°F

BRANDS / MARKS: White Kernalled Sweet CORN "No Brand" stamped "2 day."

PRODUCT: B: Sweet CORN

Number of containers: 100 cartons: Y

Temperature: 39° - 40°F

Yellow Kernalled Sweet CORN in consumer package printed "Super Corn, U.S. Fancy Husked, 4 ears, Best Corn, Somewhere, CA, Produce of USA "in" master containers stamped "12/4 pack, produce of USA."

Condition of Load & Containers:
( ) Stacked on pallets at above location (X) Intact through load ( ) Partly unloaded

10 rows, 5 layers, Inspected during process of unloading.

FORM FV-300-N (3-93)
### STORESHEET

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>White</td>
<td>43</td>
<td>20</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2.0</td>
<td>Kornk</td>
<td>59</td>
<td>25</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>3.0</td>
<td>Kornk</td>
<td>60</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>4.0</td>
<td>Kornk</td>
<td>41</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5.0</td>
<td>Kornk</td>
<td>41</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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</tr>
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<td>6.0</td>
<td>Kornk</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**REMARKS / RESTRICTIONS / S.P.I.**

- Inspected during process of unloading.
- Presence of aphids, reported at applicant's request.
- P.A.A. notified of misbranded lot.

**CARBOLK Basis:**

- HOURLY Basis: 
- TRAVEL Time: 
- EXPENSES: 
- EST. TOTAL:

**REPORTED TO:**

- Jack
- DATE: 6/3/93
- TIME: 11:10 am

**INSPECTED BY:**

- Jack Inspector
- DATE: 6/3/93
- TIME: 11:00 am

**ASSISTED BY:**

- 11:00 am

*U.S. Government Printing Office 1993 — 058-134*
<table>
<thead>
<tr>
<th>Lot</th>
<th>Temperature</th>
<th>Corn Type</th>
<th>Quality Notes</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>39°F</td>
<td>Sweet Corn</td>
<td>&quot;No Beans&quot; 2 doz.</td>
<td>CA White Kernels, 800 cartons</td>
</tr>
<tr>
<td>B</td>
<td>39°F</td>
<td>Sweet Corn</td>
<td>“Super Corn” US Fancy Husked, 400 ears</td>
<td>CA Yellow Kernels, 100 master cartons</td>
</tr>
</tbody>
</table>

**AVERAGE DEFECTS**

<table>
<thead>
<tr>
<th>Lot</th>
<th>Defect</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Undersize</td>
<td>0.1</td>
</tr>
<tr>
<td></td>
<td>Decayed Husks</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>Decayed Checksum</td>
<td>0.1</td>
</tr>
</tbody>
</table>

**REMARKS**

Lot A: Fails to meet U.S. No. 1 account condition, fails to meet count as marked.
Lot B: Fails to meet U.S. Fancy Husked account quality defects.
Lot A: Average 1/4 live aphids present, not affecting grade, reported at applicants request.
Lot B: 5 to 6 inches in length. No undersize, husked.

**WARNING**

Any person who knowingly shall falsely make, issue, alter, forge, or counterfeits this certificate, or participate in any such actions, is subject to a fine of not more than $1,000 or imprisonment for not more than one year, or both.

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 corn described in the certificate were inspected and the quality and condition as shown on said samples were as herein stated.

<table>
<thead>
<tr>
<th>Estimation Total</th>
<th>Seattle, WA</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ X</td>
<td></td>
</tr>
<tr>
<td>Carrier No. Stated by:</td>
<td>Additional Lot ID:</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Refrigeration Unit:</th>
<th>Doors:</th>
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<tbody>
<tr>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>OPEN</td>
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<table>
<thead>
<tr>
<th>Condition of Carrier:</th>
</tr>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Inspection Site:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant's Warehouse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPLICANT:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our Produce</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHIPPER:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Here, NY</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Premium Produce</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Someplace, GA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A: PRODUCT:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweet CORN</td>
</tr>
<tr>
<td>500 crates N</td>
</tr>
<tr>
<td>40 - 42°F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BRANDS / MARKS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed colored kernels, &quot;No Brand&quot; stamped &quot;US Fancy&quot;, &quot;1st. Quality Produce of USA&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition of Load &amp; Containers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(X) STACKED ON PALLETS AT ABOVE LOCATION</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

FORM FV-300-N (3-93)

Appendix II - xi
### Scoresheet

<table>
<thead>
<tr>
<th>PLU Number</th>
<th>Other I.D.</th>
<th>TEMP.</th>
<th>Sample</th>
<th>% WOC</th>
<th>% MC</th>
<th>Affecting Silt</th>
<th>Disc. Mark</th>
<th>Live Worms</th>
<th>Count per Crab</th>
<th>U.S.</th>
<th>7°</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Mixed</td>
<td>40</td>
<td>36</td>
<td>5/10</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>36</td>
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<tr>
<td>11</td>
<td>Color</td>
<td>47</td>
<td>35</td>
<td>0/0</td>
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<td>31</td>
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<td>41</td>
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<td>0</td>
<td>31</td>
<td>0</td>
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<tr>
<td>11</td>
<td>25 4/13</td>
<td>1/1</td>
<td>0/0</td>
<td>0</td>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>31</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>25 4/13</td>
<td>1/0</td>
<td>0/0</td>
<td>0</td>
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<td>25 4/13</td>
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<td>0</td>
<td>0</td>
<td>31</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks / Restrictions / SPI**

Applicant states a minimum of 7 inches in length. Count determined at applicant's request.

**Carboli Basis:**

**Hourly Basis:**

**Travel Time:**

**Expenses:**

**Estimated Total:**

**Reported To:**

**Inspected By:**

**Assisted By:**

---


Appendix II -xii
### U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

**INSPECTION CERTIFICATE**

**EXAMPLE #3**

**Applicant:** Our Produce  
**Address:** Here, NY

**Shipper:** Premium Produce  
**Address:** Someplace, GA.

**Inspec. Date:** 05/05/93  
**Time:** 01:10:04 PM

<table>
<thead>
<tr>
<th>LOT</th>
<th>TEMPERATURE</th>
<th>DECAUZ</th>
<th>BRAND</th>
<th>U.S. FANCY</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>40</td>
<td>00</td>
<td>No Brand</td>
<td>U.S. Fancy</td>
<td>G.A. Mixed colored variety 500 Crates</td>
</tr>
<tr>
<td>B</td>
<td>42</td>
<td>00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AVERAGE DECEPTS**

<table>
<thead>
<tr>
<th>A</th>
<th>03</th>
<th>00</th>
<th>00</th>
</tr>
</thead>
<tbody>
<tr>
<td>04</td>
<td>01</td>
<td>00</td>
<td>Discoloration of the Husks (0 to 14%)</td>
</tr>
<tr>
<td>03</td>
<td>00</td>
<td>00</td>
<td>Live worms present.</td>
</tr>
<tr>
<td>01</td>
<td>01</td>
<td>01</td>
<td>Decay</td>
</tr>
<tr>
<td>11</td>
<td>02</td>
<td>01</td>
<td>Checksum</td>
</tr>
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</table>

**DECREASES**

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<th>A</th>
<th>03</th>
<th>00</th>
<th>00</th>
</tr>
</thead>
</table>

**MARKED DEFECTS**

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<tr>
<th>A</th>
<th>03</th>
<th>00</th>
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**DECREASES**

| A  | 03  | 00  | 00 |

**GRADES:** Fails to grade U.S. Fancy, 7 inch minimum length, account condition.

**REMARKS:** Applicant states ears must be a minimum of 7 inches in length. Count determined at applicant's request.

**WARNING:** Any person who knowingly shall falsely make, alter, forge, or counterfeit this certificate, 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.

**INSP. COMMENTS:**

- The undersigned, a duly designated 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 harvest described in this certificate were inspected and the quality and/or condition as shown by said samples was as herein stated.

**MARKED OFFICE:**

**INSP. SIGNATURE:**

**ESTIMATED TOTAL**

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