



**United States
Department of
Agriculture**

**Agricultural
Marketing
Service**

**Fruit and
Vegetable
Division**

**Processed
Products
Branch**

United States Standards for Grades of Frozen Brussels Sprouts

Effective date March 30, 1981

This is the third issue of the United States Standards for Grades of Frozen Brussels Sprouts. This issue was published in the **FEDERAL REGISTER** of January 16, 1981, to become effective March 30, 1981.

First Issue:	Effective June 15, 1945
Second Issue:	Effective May 11, 1951
As Amended:	Effective May 22, 1957

Voluntary U.S. grade standards are issued under the authority of the Agricultural Marketing Act of 1946, which provides for the development of official U.S. grades to designate different levels of quality. These grade standards are available for use by producers, suppliers, buyers, and consumers. As in the case of other standards for grades of processed fruits and vegetables, these standards are designed to facilitate orderly marketing by providing a convenient basis for buying and selling, for establishing quality control programs, and for determining loan values.

The standards also serve as a basis for the inspection and grading of commodities by the Federal inspection service, the only activity authorized to approve the designation of U.S. grades as referenced in the standards, as provided under the Agricultural Marketing Act of 1946. This service, available as on-line (in-plant) or lot inspection and grading of all processed fruit and vegetable products, is offered to interested parties, upon application, on a fee-for-service basis. The verification of some specific recommendations, requirements, or tolerances contained in the standards can be accomplished only by the use of on-line inspection procedures. In all instances, a grade can be assigned based on final product factors or characteristics.

In addition to the U.S. grade standards, grading manuals or instructions for inspection of several processed fruits and vegetables are available upon request for a nominal fee. These manuals or instructions contain detailed interpretations of the grade standards and provide step-by-step procedures for grading the product.

Grade standards are issued by the Department after careful consideration of all data and views submitted, and the Department welcomes suggestions which might aid in improving the standards in future revisions. Comments may be submitted to, and copies of standards and grading manuals obtained from:

Chief, Processed Products Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
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United States Standards for Grades of Frozen Brussels Sprouts

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Authority: Agricultural Marketing Act of 1946, Secs. 203, 205, 60 Stat. 1087, as amended, 1090, as amended (7 U.S.C. 1622, 1624).

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

§52.651 Product description.

Frozen Brussels Sprouts means the frozen product prepared from the clean, sound succulent heads of the Brussels sprouts plant (*Brassica oleracea* L. var. *gemmifera*) by trimming, washing, blanching, and properly draining. The product is frozen in accordance with good commercial practice and maintained at temperatures necessary for its preservation.

§52.652 Definitions of terms.

- (a) **Acceptable Quality Level (AQL)** means the maximum percent of defective units or the maximum number of defects per hundred units of product that, for the purpose of acceptance sampling, can be considered satisfactory as a process average.
- (b) **Blemished** means a unit affected by surface or internal discoloration, pathological injury, insect injury, or by other means to the extent that the appearance or eating quality is affected:
 - (1) **Slightly;**
 - (2) **Materially; or**
 - (3) **Seriously.**
- (c) **Character.**
 - (1) **Good character** means the individual heads are well formed, compact or very compact, and reasonably firm.
 - (2) **Reasonably good character** means the individual heads are reasonably well formed, reasonably compact, and fairly firm.
 - (3) **Fairly good character** means the individual heads are fairly well formed.
 - (4) **Poor character** means the individual heads fail the requirements for fairly good character.
- (d) **Color (individual units).**
 - (1) **Well colored** means the individual units have a color ranging from a distinct dark green to a lighter predominating characteristic green color with a definite yellow cast.

- (2) **Fairly well colored** means the individual units have a predominating characteristic yellow color with or without slight tinges of green color.
- (e) **Defect (or defective)** means any nonconformance of a unit(s) of product from a specified requirement of a single characteristic.
- (f) **Extraneous vegetable material** means harmless vegetable substances other than Brussels sprouts.
- (g) **Flavor and odor. Normal flavor and odor** means that the product, after cooking, is free from objectionable flavors or odors of any kind.
- (h) **Loose leaves and loose small pieces** means Brussels sprouts leaves, pieces of leaves or small pieces of edible stalk or stems not attached to a unit.
- (i) **Sample unit** means the amount of product specified to be used for grading. It may be:
- (1) The entire contents of a container;
 - (2) A portion of the contents of a container;
 - (3) A combination of the contents of two or more containers; or
 - (4) A portion of unpacked product.
- (j) **Trim.**
- (1) **Well trimmed** means the appearance of the unit is not materially affected by mechanical damage or by cutting into the head or by cutting of the stalk or stem.
 - (2) **Poorly trimmed** means the appearance of the unit is materially affected by mechanical damage or by excessive cutting into the head, or by insufficient cutting of the stalk or stem.
- (k) **Unit** means a Brussels sprout or portion thereof other than loose leaves and loose small pieces.

§52.653 Recommended sample unit size.

Meeting the requirements for factors of quality is based on a sample unit size of 50 units.

§52.654 Grades.

(a) U.S. Grade A is the quality of frozen Brussels sprouts that:

(1) Meets the following prerequisites in which the sprouts:

(i) Have similar varietal characteristics;

(ii) Have a normal flavor and odor;

(iii) Have a good overall brightness;

(iv) Are free from grit or silt that affect the appearance or eating quality; and

(v) Have loose leaves and loose small pieces that may slightly affect the appearance or eating quality.

(2) Is within the limits for defects as classified in Tables I and II and specified in Tables III and IV, as applicable.

(b) U.S. Grade B is the quality of frozen Brussels sprouts that:

(1) Meets the following prerequisites in which the sprouts:

(i) Have similar varietal characteristics;

(ii) Have a normal flavor and odor;

(iii) Have a reasonably good overall brightness;

(iv) Are free from grit or silt that affect the appearance or eating quality; and

(v) Have loose leaves and loose small pieces that may materially affect the appearance or eating quality.

(2) Is within the limits for defects as classified in Tables I and II and specified in Tables III and IV, as applicable.

(c) U.S. Grade C is the quality of frozen Brussels sprouts that:

(1) Meets the following prerequisites in which the sprouts:

- (i) Have similar varietal characteristics;
 - (ii) Have a normal flavor and odor;
 - (iii) Have a fairly good overall brightness;
 - (iv) Have no more than a slight trace of grit or silt; and
 - (v) Have loose leaves and loose small pieces that may seriously affect the appearance or eating quality.
- (2) Is within the limits for defects as classified in Tables I and II and specified in Tables III and IV, as applicable.
- (d) **Substandard** is the quality of frozen Brussels sprouts that fails to meet the requirements of **U.S. Grade C**.

§52.655 Factors of quality.

The grade of frozen Brussels sprouts is based on meeting the requirements for the following quality factors:

(a) Prerequisite quality factors:

- (1) Varietal characteristics;
- (2) Flavor and odor;
- (3) Brightness;
- (4) Grit or silt; and
- (5) Loose leaves and loose small pieces.

(b) Classified quality factors:

- (1) Individual unit color **in U.S. Grades A and B only**;
- (2) Blemish;
- (3) Trim;
- (4) Extraneous vegetable material; and

(5) Character.

§52.656 Classification of defects.

All defects, other than character defects, are classified as minor, major, severe, or critical. All character defects are classified as reasonably good, fairly good, or poor. Each **X** in Tables I and II represents **one (1) defect**.

**Table I
Classification of Defects (Other than Character)**

Quality Factor	Defects	Classification			
		Minor	Major	Severe	Critical
Individual Unit Color	Fairly well colored in U.S. Grades A & B only (each unit)		X		
Blemished	Slightly (each unit) . . .	X			
	Materially (each unit) .		X		
	Seriously (each unit) . .			X	
Trim	Poor (each unit)		X		
Extraneous Vegetable Material	Each piece				X

**Table II
Classification of Character Defects**

Quality Factor	Defects	Reasonably Good	Fairly Good	Poor
Character	B (each unit)	X		
	C (each unit)		X	
	Substandard (each unit)			X

§52.657 Tolerances for defects.

**Table III
All Classified Defects Except Character**

	Grade A				Grade B				Grade C			
	Total <u>3/</u>	Maj	Sev	Crit	Total <u>3/</u>	Maj	Sev	Crit	Total <u>3/</u>	Maj	Sev	Crit
AQL <u>2/</u>	20.0	12.5	4.0	0.15	40.0	33.0	8.5	1.5	50.0	33.0	10.0	2.5

2/ AQL expressed as defects per hundred units.

3/ Total = Minor + Major + Severe + Critical.

**Table IV
Classified Defects for Character Only**

	Grade A			Grade B		Grade C
	Total <u>5/</u>	Fairly Good	Poor	Total <u>6/</u>	Poor	Poor
AQL <u>4/</u>	15.0	5.0	1.5	40.0	8.5	40.0

4/ AQL expressed as percent defective.

5/ Total = Reasonably Good + Fairly Good + Poor.

6/ Total = Fairly Good + Poor.

§52.658 Sample size.

The sample size to determine meeting the requirements of these standards shall be as specified in the sampling plans and procedures in the **Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products thereof, and Certain Other Processed Food Products** (7 CFR 52.1 - 52.83), for lot grading and on-line grading, as applicable.

§52.659 Quality requirements.

(a) **Lot grading.** A lot of frozen Brussels sprouts is considered as meeting the requirements for quality if:

(1) The prerequisite requirements specified in §52.654 are met; and

- (2) The Acceptable Quality Levels (AQL) in Tables III and IV, as applicable, are not exceeded.
- (b) **On-Line grading.** A portion of production is considered as meeting the requirements for quality if:
 - (1) The prerequisite requirements specified in 52.654 are met; and
 - (2) The Acceptable Quality Levels (AQL) in Tables III and IV, as applicable, are not exceeded.
- (c) **Single sample unit.** Each single sample unit submitted for quality evaluation will be treated individually and is considered as meeting the requirements for quality if:
 - (1) The prerequisite requirements specified in 52.654 are met; and
 - (2) The Acceptable Quality Levels (AQL) in Tables III and IV, as applicable, are not exceeded.

Effective date: The United States Standards for Grades of Frozen Brussels Sprouts shall become effective March 30, 1981, and thereupon will supersede United States Standards for Grades of Frozen Brussels Sprouts which have been in effect since May 11, 1951.

Done at Washington D.C., on: January 12, 1981.

/s/

Donald L. Houston
Administrator
Food Safety and Quality Service