



**United States  
Department of  
Agriculture**

**Agricultural  
Marketing  
Service**

**Fruit and  
Vegetable  
Division**

**Processed  
Products  
Branch**

# **United States Standards for Grades of Frozen Speckled Butter (Lima) Beans**

**Effective date July 21, 1962**

This is the first issue of the United States Standards for Grades of Frozen Speckled Butter (Lima) Beans published in the **FEDERAL REGISTER** of June 20, 1962 (27 FR 5789) to become effective July 22, 1962.

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. grades 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  
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## United States Standards for Grades of Frozen Speckled Butter (Lima) Beans

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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).

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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.

**§52.5241 Product description.**

- (a) Frozen speckled butter (lima) beans means the frozen product prepared from the clean, sound, freshly-vined (but not **seed-dry**) seed of the speckled butter (lima) bean plant (*Phaseolus limensis*). The skins of the seed are pigmented and the external colors range from variegated speckling of green, pink, red, and/or lavender to purple. The product is prepared by shelling the pods; by washing, blanching, and properly draining the seed which may have been sorted and blended or otherwise prepared in accordance with good commercial practice; and is frozen in accordance with good commercial practice and maintained at temperatures necessary for the preservation of the product.
- (b) Frozen speckled butter (lima beans, hereinafter referred to as **frozen beans**, mean any of the varieties of frozen speckled butter beans or speckled lima beans.

**§52.5242 Grades of frozen beans.**

- (a) **U.S. Grade A or U.S. Fancy** is the quality of frozen beans that possess a good flavor; that possess a good color; that are practically free from defects; that possess a good character; and that score not less than 90 points when scored in accordance with the scoring system outlined in this subpart.
- (b) **U.S. Grade B or U.S. Extra Standard** is the quality of frozen beans that possess a normal flavor; that possess a reasonably good color; that are reasonably free from defects; that possess a reasonably good character; and that score not less than 80 points when scored in accordance with the scoring system outlined in this subpart.
- (c) **Substandard** is the quality of frozen beans that fail to meet the requirements of U.S. Grade B.

**§52.5243 Ascertaining the grade of a sample unit.**

- (a) **General.** In addition to considering other requirements outlined in the standards, the following quality factors are evaluated in ascertaining the grade of the product:
  - (1) **Factor not rated by score points.**
    - (i) **Flavor.**

- (a) **Good flavor** means that the product-before and after cooking-has a good, characteristic flavor and odor and is free from objectionable flavors and objectionable odors of any kind.
- (b) **Normal flavor** means that the product may be slightly lacking in good flavor but is free from objectionable flavors and objectionable odors of any kind.

(2) **Factors rated by score points.** The relative importance of each factor which is scored is expressed numerically on the scale of 100. The maximum number of points that may be given each such factor is:

<b>Factors</b>	<b>Points</b>
Color .....	30
Defects .....	40
Character .....	<u>30</u>
Total Score .....	100

(b) **Evaluation of quality.** The scores for the factors of color and absence of defects are determined immediately after thawing to the extent that the product is substantially free from ice crystals and the beans can be handled as individual units. The evaluation of the factor of character is made after the product is cooked (see §52.5248).

**§52.5244    Ascertaining the rating for the factors which are scored.**

The essential variations within each factor which is scored are so described that the value may be ascertained for such factors and expressed numerically. The numerical range within each factor which is scored is inclusive (for example, **27 to 30 points** means 27, 28, 29, or 30 points).

**§52.5245    Color.**

- (a) **General.** The evaluation of color is determined on the thawed product. The color is based upon the exterior skin and cotyledon color of the beans.
- (b) **Color characteristics. Similar color characteristics** means the beans are of the speckled type. Very young succulent beans that contain only slight speckling of the skins or a mixture of various speckled varieties are considered as beans with **similar color characteristics**.

- (c) **"A" classification.** Frozen beans that possess a good color may be given a score of 27 to 30 points. **Good color** means that:
- (1) The over-all color is bright and typical for speckled types of similar color characteristics;
  - (2) Not less than 15 percent, by weight, of the beans possess at least a slight tinge of green in the cotyledons;
  - (3) Not more than 20 percent, by weight, of the beans may possess a light tan to tan color;
  - (4) There may be present no more than 4 beans per 10 ounces that are light brown to brown or a pronounced mottled brown; and
  - (5) The presence of abnormally colored beans does not materially affect the over-all color.
- (d) **"B" classification.** If the frozen beans possess a reasonably good color, a score of 24 to 26 points may be given. Frozen beans that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). **Reasonably good color** means that:
- (1) The over-all color may be slightly dull or the beans may possess a light tan to tan color but such colors are typical of speckled types of similar color characteristics;
  - (2) There may be no more than 8 beans per 10 ounces that are light brown to brown or a pronounced mottled brown; and
  - (3) The presence of abnormally colored beans does not seriously affect the over-all color.
- (c) **"SStd" classification.** Frozen beans that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 23 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

**§52.5246 Defects.**

- (a) **General.** The factor of defects refers to the degree of freedom from harmless extraneous vegetable material, from pieces of beans, shriveled beans, sprouted beans, from beans that are blemished or seriously blemished, and from other defects that affect the appearance or edibility of the product.

- (b) **Definitions of harmless extraneous vegetable material. Harmless extraneous vegetable materials** for the purposes of ascertaining allowances in this section are grouped as:
- (1) **Flat type**-predominantly flat green, tender vegetable material, such as but not limited to pieces of pods or leaves of the bean plant or similar plant; or
  - (2) **Spherical type**-predominantly spherical or elliptical-shape vegetable material, such as but not limited to seeds from plants other than the lima bean plant; or
  - (3) **Cylindrical type**-predominantly cylindrical green vegetable material, such as but not limited to stems or pieces of stems of the bean plant or similar plant.
- (c) **Basis of allowances for harmless extraneous vegetable material.** The allowances for harmless extraneous vegetable material are based on 30 ounces of frozen beans. When considering sample units of less than 30 ounces, the allowances provided in this section for the respective grade classification will be permitted in a single sample unit: **Provided**, That the average of such defects in the entire sample does not exceed such allowances.
- (d) **Definitions of other defects.**
- (1) **A Piece of bean** means:
    - (i) A bean from which one-half or more of one cotyledon (or the equivalent thereof) has become detached; or
    - (ii) Two detached whole cotyledons; or
    - (iii) Pieces of detached broken cotyledons aggregating the equivalent of an average size whole cotyledon; or
    - (iv) A whole detached skin or portions of detached skin aggregating the equivalent of an average size whole skin.
  - (2) **Shriveled bean** means a bean that is materially wrinkled and not of normal plumpness.
  - (3) **Sprouted bean** means a bean that shows an external shoot protruding prominently beyond the cotyledon or skin.

- (4) **Blemished** means blemished to the extent that the appearance or eating quality of the bean is materially affected.
  - (5) **Seriously blemished** means blemished or discolored to such an extent that the appearance or eating quality of the bean is seriously affected.
- (e) **"A" classification.** Frozen beans that are practically free from defects may be given a score of 36 to 40 points. **Practically free from defects** means that:
- (1) There may be present no more than the specified defects in Table I of this subpart for the Grade A classification; and
  - (2) Notwithstanding the allowances for such specific defects the presence of harmless extraneous vegetable material, pieces of beans, shriveled and sprouted beans, and blemished and seriously blemished beans, or any other defects or defective units not specifically mentioned, individually or collectively, does not materially affect the appearance or eating quality of the product.
- (f) **"B" classification.**
- (1) If the frozen beans are reasonably free from defects, a score of 32 to 35 points may be given. Frozen beans that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule).
  - (2) **Reasonably free from defects** means that:
    - (i) There may be present no more than the specified defects in Table I of this subpart for the Grade B classification; and
    - (ii) Notwithstanding the allowances for such specific defects the presence of harmless extraneous vegetable material, pieces of beans, shriveled and sprouted beans, and blemished and seriously blemished beans, or any other defects or defective units not specifically mentioned, individually or collectively, does not seriously affect the appearance or eating quality of the product.
- (g) **"SStd" classification.** Frozen beans that fail to meet the requirements of paragraph (f) of this section may be given a score of 0 to 31 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).



**Table I**

**Maximum Allowances for Defects**

Kind of defect	Grade A	Grade B	
		When present as a single group	Combination of any two groups
Groups of harmless extraneous vegetable material	For each 30 ounces net weight, average <sup>1/</sup>		
Flat material . . . . .	1/4 square inch or 1 piece of any size or	1 square inch or 1 piece of any size. or	1/2 square inch or 1 piece of any size.
Spherical material . . . . .	1 unit . . . . . or	3 units . . . . . or	2 units.
Cylindrical . . . . .	1 piece (or pieces) not over 1/2 inch aggregate length	1 piece (or pieces) not over 2 inches aggregate length.	1 piece (or pieces) not over 1 inch aggregate length.
Pieces of bean . . . . . Shriveled beans; and sprouted beans. Blemished beans; and seriously blemished beans.	20 pieces . . . . . 2 beans . . . . .  Total 10 beans, but no more than 5 seriously blemished of which no more than 1 may be accompanied by material discoloration.	Count per 10 ounces net weight 40 pieces. 8 beans.  Total 20 beans, but no more than 10 seriously blemished of which no more than 2 may be accompanied by material discoloration.	

<sup>1/</sup> See §52.5246(c) Basis of allowances for harmless extraneous vegetable material.

**§52.5247 Character.**

- (a) **General.** The evaluation of character is based on the degree of tenderness of the skins and cotyledons and the uniformity of such tenderness and texture after cooking the product by the prescribed cooking procedure (See §52.5248).
- (b) **"A" classification.** Frozen beans that possess a good character may be given a score of 27 to 30 points. **Good character** means the beans are reasonably tender and are practically uniform in texture and tenderness.
- (c) **"B" classification.** If the frozen beans possess a reasonably good character, a score of 24 to 26 points may be given. Frozen beans that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). **Reasonably good character** means the beans are fairly tender and may be variable in texture and tenderness, and the cotyledons may be **mealy** but are not hard.

- (d) **"SStd" classification.** Frozen beans that fail to meet the requirements of paragraph (c) of this section may be given a score of 0 to 23 points and shall not be graded above Substandard regardless of the total score for the product (this is a limiting rule).

**§52.5248 Cooking procedure.**

- (a) The cooking procedure that follows is not intended to be a recipe for purposes of food preparation but is for the purposes of ascertaining compliance with requirements for applicable quality factors as outlined in this subpart.
- (b) Place 10 ounces of the thawed or free-flowing product in a two-quart sauce pan containing 400 milliliters of tap water (without the addition of salt) which has been brought to a boil. Continue to heat rapidly until the water begins to boil again. Cover the pan and boil for 40 minutes, reducing the heat to maintain a constant boil, except that very young succulent beans may be cooked for a lesser length of time.
- (c) Immediately after cooking pour the product on to a flat receptacle and spread out to facilitate cooling. The product should be checked for flavor, odor, tenderness, and texture while still warm.

**§52.5249 Ascertaining the grade of a lot.**

The grade of a lot of frozen beans covered by these standards is determined by the procedures set forth in the Regulations Governing Inspection and Certification of Processed Products Thereof, and Certain Other Processed Food Products (§52.1 to §52.83).

**§52.5250 Score sheet for frozen speckled butter (lima) beans.**

Size and kind of container .....			
Container marks or identification .....			
Label .....			
Net weight (ounces) .....			
Factors		Score Points	
Color .....	30	"A"	27-30
		"B"	24-26 <u>1/</u>
		"SStd"	0-23 <u>1/</u>
Defects .....	40	"A"	36-40
		"B"	32-35 <u>1/</u>
		"SStd"	0-31 <u>1/</u>
Character .....	30	"A"	27-30
		"B"	24-26 <u>1/</u>
		"SStd"	0-23 <u>1/</u>
Total Score .....	100		
Grade .....			
Flavor .....			

1/ Indicates limiting rule.

The United States standards for Grades of Frozen Speckled Butter (Lima) Beans (which is the first issue) contained in this subpart shall become effective 30 days after publication hereof in the Federal Register.

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