



United States Department of Agriculture

Marketing and
Regulatory
Programs

Agricultural
Marketing
Service

Specialty
Crops
Program

Specialty
Crops
Inspection
Division

United States Standards for Grades of Canned Lima Beans

Effective May 20, 2019

This issue of the United States Standards for Grades of Canned Lima Beans (84 FR 16381) supersedes the previous issue which has been in effect since March 20, 1960.

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 fresh and processed fruits, vegetables, and specialty crops 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 U.S. grade standards and inspection instructions for all fresh and processed fruits, vegetables, and specialty crops are available on the internet and upon request at the address below. These documents provide detailed interpretations of the grade standards and provide step-by-step procedures for grading the product.

Grade standards are issued by the U.S. Department of Agriculture (USDA) after careful consideration of all data and views submitted during rulemaking. The Department welcomes suggestions for improving the standards in future revisions. Comments may be submitted to, and copies of standards and inspection instructions obtained from:

Director, Specialty Crops Inspection Division
Specialty Crops Program,
USDA, Agricultural Marketing Service
1400 Independence Avenue, SW, STOP 0240
Washington, D.C. 20250

Authority: 7 U.S.C. 1621-1627.

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.

Non-Discrimination Policy: In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

United States Standards for Grades of Canned Lima Beans

Section	Page No.
Identity, Types, and Grades	2
§52.471 Identity	2
§52.472 Types of canned lima beans.....	2
§52.473 Grades of canned lima beans.....	2
Fill of Container and Drained Weights	3
§52.474 Recommended fill of container.....	3
§52.475 Recommended minimum drained weight.....	3
Sizes	3
§52.476 Sizes of lima beans in canned lima beans.....	3
Factors of Quality.....	4
§52.477 Ascertaining the grade.....	4
§52.478 Ascertaining the rating of the factors which are scored.....	4
§52.479 Color.....	5
§52.480 Clearness of liquor.....	6
§52.481 Absence of defects.....	7
§52.482 Character.....	9
Lot Inspection and Certification.....	10
§52.483 Ascertaining the grade of a lot.....	10
Score Sheet	11
§52.484 Score sheet for canned lima beans.....	11

Identity, Types, and Grades
§52.471 Identity.

Canned lima beans means the canned product properly prepared from the clean, sound, succulent seed of the lima bean plant, as defined in the definitions and standard of identity for canned vegetables (21 CFR 155.200) issued pursuant to the Federal Food, Drug, and Cosmetic Act.

§52.472 Types of canned lima beans.

- (a) **Thin-seeded**, such as Henderson, Bush and Thorogreen varieties;
- (b) **Thick-seeded Baby Potato**, such as Baby Potato, Baby Fordhook, and Evergreen varieties;
- (c) **Thick-seeded**, such as Fordhook variety.

§52.473 Grades of canned lima beans.

- (a) **U.S. Grade A** is the quality of canned lima beans that possess similar varietal characteristics; that possess a normal flavor and odor; that possess a good color; that are practically free from defects; that possess a practically clear liquor; that possess a good character; and that for those factors which are scored in accordance with the scoring system outlined in this subpart the total score is not less than 90 points: *Provided*, That the canned lima beans may possess a reasonably good character and a fairly clear liquor if the total score is not less than 90 points.
- (b) **U.S. Grade B** is the quality of canned lima beans that possess similar varietal characteristics; that possess a normal flavor and odor; that possess a reasonably good color; that are reasonably free from defects; that possess a reasonably clear liquor; that possess a reasonably good character; and that for those factors which are scored in accordance with the scoring system outlined in this subpart the total score is not less than 80 points: *Provided*, That the canned lima beans may possess a fairly clear liquor if the total score is not less than 80 points.
- (c) **U.S. Grade C** is the quality of canned lima beans that possess similar varietal characteristics; that possess a normal flavor and odor; that possess a fairly good color; that are fairly free from defects; that possess a fairly clear liquor; that possess a fairly good character; and that score not less than 70 points when scored in accordance with the scoring system outlined in this subpart.
- (d) **Substandard** is the quality of canned lima beans that fail to meet the requirements of U.S. Grade C.

Fill of Container and Drained Weights
§52.474 Recommended fill of container.

Recommended fill of container for canned lima beans is not incorporated in the grades of the finished product, since fill of container, as such, is not a factor of quality for the purpose of these grades. It is recommended that each container of canned lima beans be filled as full as practicable with beans without impairment of quality.

§52.475 Recommended minimum drained weight.

The minimum drained weight recommendations in Table No. I of this section are not incorporated in the grades of the finished product, since drained weight, as such, is not a factor of quality for the purposes of these grades. The drained weight of canned lima beans is determined by emptying the contents of the container upon a United States Standard No. 8 circular sieve of proper diameter so as to distribute the product evenly, inclining the sieve to facilitate drainage and allow to drain for two minutes. The drained weight is the weight of the sieve and the lima beans less the weight of the dry sieve. A sieve 8 inches in diameter is used for the No. 2 size can (307 x 409) and smaller sizes, and a sieve 12 inches in diameter is used for containers larger than the No. 2 size can.

Table No. I
Recommended Drained Weights of Lima Beans

Container size				
Container designation	Overall diameter (inches)	Overall height (inches)	Overflow capacity (fluid oz.)	Drained weight (oz.)
8 oz tall	2-11/16	3-4/16	—	5-1/2
8 oz jar	—	—	8.2	5-1/2
No. 1 (picnic)	2-11/16	4	—	7
No. 1 tall	3-1/16	4-11/16	—	10-3/4
No. 300	3	4-7/16	—	9-3/4
No. 303	3-3/16	4-6/16	—	11
No. 303 jar	—	—	17.0	11
No. 2	3-7/16	4-9/16	—	13-1/2
No. 10	6-3/16	7	—	72

Sizes

§52.476 Sizes of lima beans in canned lima beans.

The size of lima beans is not a factor of quality of canned lima beans for the purpose of these grades. The size of a lima bean is determined by measuring the greatest width through the center at right angles to the longitudinal axis of the bean. The designations

of the various sizes of lima beans packed as canned beans are shown in Table No. II of this section.

**Table No. II
Sizes of Lima Beans in Canned Lima Beans**

Word designation:	Size of lima beans (inches in width)
Petite	28/64 inch in width and smaller.
Tiny	Over 28/64 inch to and including 30/64 inch in width.
Small	Over 30/64 inch to and including 34/64 inch in width.
Medium	Over 34/64 inch to and including 38/64 inch in width.
Large	Larger than 38/64 inch in width.

Factors of Quality

§52.477 Ascertaining the grade.

- (a) The grade of canned lima beans is ascertained by considering, in conjunction with the other requirements of the respective grade, the respective ratings for the factors of color, clearness of liquor, absence of defects, and character.
- (b) 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:

Factors	Points
Color	35
Clearness of liquor	10
Absence of defects	25
Character	30
Total Score	100

- (c) Normal flavor and normal odor means that the product is free from objectionable flavors and objectionable odors of any kind.

§52.478 Ascertaining the rating of 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, "8 to 10 points" means 8, 9, or 10 points).

§52.479 Color.

(a) General.

(1) The color for all types of canned lima beans in this subpart is based on the predominating and characteristic color of the exterior surface of the canned lima bean when compared to the U.S.D.A. permanent plastic color standards for Canned Thin-Seeded Lima Beans.

(2) A set of these color standards is available for public inspection, and information in regard to procurement of sets may be obtained from USDA Headquarters in Washington, D.C.

(i) **Green** with respect to all types of canned lima beans in this subpart means that the color of the individual lima beans possesses as much or more green color than the U.S.D.A. Color Standard for Canned Thin- Seeded Green Lima Beans.

(ii) **White** with respect to all types of canned lima beans in this subpart means that the color of the individual lima bean is lighter than the U.S.D.A. Color Standard for Canned Thin- Seeded White Lima Beans.

(b) “A” classification. Canned lima beans that possess a good color may be given a score of 32 to 35 points. **Good color** means that the lima beans, regardless of type, possess a bright typical color and meet the following additional color requirements for the respective types:

(1) Thin-seeded type; Thick-seeded Baby Potato type.

(i) Not less than 90 percent, by count, of the lima beans are green defined as aforesaid, and not more than 10 percent, by count, may be lighter in color: *Provided*, That not more than 1 percent, by count, of all the lima beans are white, or

(ii) Not less than 97 percent, by count, of the lima beans are green, defined as aforesaid, and not more than 3 percent, by count, may be lighter in color or white lima beans.

(2) Thick-seeded type. Not less than 90 percent, by count, of the lima beans are green, defined as aforesaid, and not more than 10 percent, by count, may be lighter in color: *Provided*, That not more than 3 percent, by count, of all the lima beans are white.

(c) “B” Classification. If the canned lima beans possess a reasonably good color, a score of 29 to 31 points may be given. Canned lima 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 the lima beans, regardless of type, possess a typical color and meet the following additional requirements for the respective types:

- (1) **Thin-seeded type; Thick-seeded Baby Potato type.** Not less than 50 percent, by count, of the lima beans are green, defined as aforesaid, and not more than 50 percent, by count, may be lighter in color: *Provided*, That not more than 25 percent, by count, of all the lima beans are white.
 - (2) **Thick-seeded type.** Not less than 50 percent, by count, of the lima beans are green, defined as aforesaid, and not more than 50 percent, by count, may be lighter in color: *Provided*, That not more than 25 percent, by count, of all the lima beans are white.
- (d) **“C” Classification.** Canned lima beans that possess a fairly good color may be given a score of 26 to 28 points. Canned lima beans that fall into this classification shall not be graded above U.S. Grade C, regardless of the total score for the product (this is a limiting rule). **Fairly good color** means that the lima beans, regardless of type, possess a typical color and meet the following additional requirements for the respective types:
- (1) **Thin-seeded type; Thick- seeded Baby Potato type.** Less than 50 percent, by count, of the lima beans are green, defined as aforesaid, and all of the lima beans may be white.
 - (2) **Thick-seeded type.** Less than 50 percent, by count, of the lima beans are green, defined as aforesaid, and all of the lima bean may be white.
- (e) **“SStd” classification.** Canned lima beans that are definitely off color or fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 25 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.480 **Clearness of liquor**

- (a) **“A” classification.** Canned lima beans that possess a practically clear liquor may be given a score of 9 or 10 points. **Practically clear liquor** means that liquor may be slightly cloudy and that not more than a small amount of sediment is present.
- (b) **“B” classification.** If the canned lima beans possess a reasonably clear liquor, a score of 7 or 8 points may be given. **Reasonably clear liquor** means that the liquor may be somewhat cloudy and may contain a considerable amount of sediment.
- (c) **“C” classification.** Canned lima beans that possess a fairly clear liquor may be given a score of 5 or 6 points. **Fairly clear liquor** means that the liquor may be

dull in color but not to the extent that the appearance is seriously affected, and may be rather viscous cream-like, or starchy.

- (d) **“SStd” classification.** Canned lima beans that possess a liquor that is definitely off color for any reason or that contains an excessive amount of sediment may be given a score of 0 to 4 points and shall not be graded above Substandard, regardless of the total score for the product (this is limiting rule).

§52.481 Absence of defects.

- (a) **General.** The factor of absence of defects refers to the degree of freedom from extraneous vegetable matter, from loose skins, loose cotyledons, broken beans, sprouted beans, and from beans that show light discoloration or that are blemished or seriously blemished.

- (1) **Extraneous vegetable matter** means pods or pieces of pods, leaves, stems, and other similar vegetable matter.
- (2) **Broken bean** means a bean from which one-half or more of a cotyledon or the equivalent thereof has become detached; or pieces of cotyledon aggregating the equivalent of an average size whole cotyledon.
- (3) **Loose cotyledon** means a whole cotyledon which has become separated from the skin.
- (4) **Loose skin** means a whole skin or portions of skin aggregating the equivalent of an average size whole skin which has become separated from the cotyledons.
- (5) **Light discoloration** means light discoloration of the hilum or other light discoloration which slightly affects but does not materially affect the appearance of the bean.
- (6) **Sprouted** means lima beans that show an external shoot protruding beyond the cotyledon of skin.
- (7) **Blemished** means blemished by discoloration, pathological injury, insect injury, or blemished by other means, other than by light discoloration which is not considered blemished, to such an extent that the aggregate blemished area materially affects the appearance or eating quality of a bean or any detached piece of a bean.
- (8) **Seriously blemished** means blemished to such an extent that the aggregate blemished area seriously affects the appearance or eating quality of a bean or any detached piece of a bean.

(b) **“A” classification.** Canned lima beans that are practically free from defects may be given a score of 22 to 25 points. **Practically free from defects** means that aforesaid defects, individually or collectively, do not more than slightly affect the appearance or eating quality of the product. The following allowances provide a guide for scoring canned lima beans which are practically free from defects:

(1) For each 10 ounces drained weight of beans there may be present:

- (i) 1 piece, or pieces, of extraneous vegetable matter having an aggregate area of $\frac{3}{16}$ square inch ($\frac{1}{2}$ " x $\frac{3}{8}$ ") on one surface of the piece, or pieces;
- (ii) 3 percent, by count, of loose skins;
- (iii) 5 percent, by count, of broken beans and loose cotyledons;
- (iv) 1 percent, by count, of sprouted beans; and
- (v) 2 percent, by count, of blemished and seriously blemished beans, and of such 2 percent, not more than $\frac{1}{4}$ thereof or $\frac{1}{2}$ of 1 percent, by count, of all the beans may be seriously blemished.

(c) **“B” classification.** If the canned lima beans are reasonably free from defects, a score of 20 or 21 points may be given. Canned lima 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 free from defects**, means that the aforesaid defects, individually or collectively, do not materially affect the appearance or eating quality of the product. The following allowances provide a guide for scoring canned lima beans which are reasonably free from defects:

(1) For each 10 ounces drained weight of beans there may be present:

- (i) 1 piece, or pieces, of extraneous vegetable matter having an aggregate area of more than $\frac{3}{16}$ square inch but not more than $\frac{3}{8}$ inch ($\frac{1}{2}$ " x $\frac{3}{4}$ ") on one surface of the piece, or pieces;
- (ii) 5 percent, by count, of loose skins;
- (iii) 10 percent, by count, of broken beans and loose cotyledons;
- (iv) 4 percent, by count, of sprouted beans; and
- (v) 3 percent, by count, of blemished and seriously blemished beans, and of such 3 percent, not more than $\frac{1}{3}$ thereof or 1 percent by count, of all the beans may be seriously blemished.

- (d) **“C” classification.** Canned lima beans that are fairly free from defects may be given a score of 18 or 19 points. Canned lima beans that fall into this classification shall not be graded above U.S. Grade C, regardless of the total score for the product (this is a limiting rule). **Fairly free from defects** means that the aforesaid defects, individually or collectively, do not seriously affect the appearance or eating quality of the product. The following allowances provide a guide for scoring canned lima beans which are fairly free from defects:
- (1) For each 10 ounces drained weight of beans there may be present:
- (i) 1 piece, or pieces, of extraneous vegetable matter having an aggregate area of more than 3/8 square inch, but not more 3/4 square inch (1/2” x 1-1/2”) on one surface of the piece, or pieces;
 - (ii) 8 percent, by count, of loose skins;
 - (iii) 15 percent, by count, of broken beans and loose cotyledons;
 - (iv) 8 percent, by count, of sprouted beans; and
 - (v) 4 percent, by count, of blemished and seriously blemished beans, and of such 4 percent, not more than 1/2 thereof or 2 percent, by count, of all the beans may be seriously blemished.
- (e) **“SStd” classification.** Canned lima beans that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 17 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§52.482 Character.

The factor of character refers to the tenderness and maturity of the product.

- (a) **“A” classification.** Canned lima beans that possess a good character may be given a score of 27 to 30 points. **Good character** means that the lima beans are young and tender.
- (b) **“B” classification.** If the canned lima beans possess a reasonably good character, a score of 24 to 26 points may be given. **Reasonably good character** means that the lima beans are reasonably young and reasonably tender.
- (c) **“C” classification.** Canned lima beans that possess a fairly good character may be given a score of 21 to 23 points. Canned lima beans that fall into this classification shall not be graded above U.S. Grade C, regardless of the total score for the product (this is a limiting rule). **Fairly good character** means that

the lima beans may be nearly mature and possess a fairly tender texture, may be firm and mealy but not hard, or may be soft but not mushy.

- (d) **“SStd” classification.** Canned lima beans that fail to meet the requirements of paragraph (c) of this section may be given a score of 0 to 20 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

Lot Inspection and Certification

§52.483 Ascertaining the grade of a lot.

The grade of a lot of canned lima beans covered by these standards is determined by the procedure set forth 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 through 52.83).

Score Sheet
§52.484 **Score sheet for canned lima beans.**

Size and kind of container			
Container marks or identification			
Label			
Net weight (ounces)			
Vacuum (inches)			
Drained weight (ounces)			
Type			
Size			
Color Percent Green Percent White			
Factors		Score Points	
Color	35	"A"	32-35
		"B"	29-31 ¹
		"C"	26-28 ¹
		"Sstd"	0-25 ¹
Clearness of liquor	10	"A"	9-10
		"B"	7-8
		"C"	5-6
		"Sstd"	0-4 ¹
Absence of defects	25	"A"	22-25
		"B"	20-21 ¹
		"C"	18-19 ¹
		"Sstd"	0-17 ¹
Character	30	"A"	27-30
		"B"	24-26
		"C"	21-23 ¹
		"Sstd"	0-20 ¹
Total Score	100		
Grade			
Normal flavor and odor			

¹ Indicates limiting rule.