

# U.S. Standards

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## UNITED STATES STANDARDS FOR LENTILS

*Compliance with the provisions of these standards does not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act, or other Federal laws.*

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## TERMS DEFINED

### 601 Definitions.

For the purposes of these standards the following terms shall have the meaning stated below.

- (a) *Class*. There is one class: Lentils.
- (b) *Contrasting Lentils*. Lentils that differ substantially in size or color from the predominating lentil type.
- (c) *Damaged Lentils*. Whole and pieces of lentils which are distinctly damaged by frost, weather, disease, heat (other than to a material extent), immature, or other causes, (except weevil or material heat damage) or are distinctly soiled or stained by nightshade, dirt, or toxic material.
- (d) *Defective Lentils (Total)*. The categories of defective lentils shall be weevil damaged lentils, heat-damaged lentils, damaged lentils, and split lentils.
- (e) *Distinctly Low Quality*. Whole lentils which are obviously of inferior quality because they are stained by an unknown foreign substance; or because they otherwise contain a known toxic substance(s) or an unknown foreign substance(s); or because they are in an unusual state or condition, and which cannot be graded by use of the other grading factors provided in the standards.
- (f) *Dockage*. Small underdeveloped lentils, pieces of lentils, and all matter other than lentils which can be readily removed by use of sieves and cleaning devices as set forth in the [Pea and Lentil Handbook](#) (see 606).
- (g) *Dockage-Free Lentils*. Lentils from which the dockage has been removed.
- (h) *Fair Color Lentils*. Lentils that are lightly to moderately discolored from storage or other causes to the extent they cannot be considered of good color.
- (i) *Foreign Material in Dockage-Free Lentils*. All matter other than lentils and including detached seedcoats.
- (j) *Foreign Material in Thresher-Run Lentils*. All matter other than lentils, and including detached seedcoats, which cannot be readily removed in the proper determination of dockage.
- (k) *Good Color Lentils*. Lentils that are practically free from discoloration and have the uniform natural color and appearance characteristics of the predominating lentil type.
- (l) *Heat-Damaged Lentils*. Whole and pieces of lentils which have been materially discolored as a result of heating.
- (m) *Immature lentils*. Lentils that do not have a traditional lens-shaped profile due to immaturity. Immature lentils are characterized as having a thin or flat (wafer-like), wrinkled, and misshapen appearance. Lentils may also be discolored.
- (n) *Inconspicuous Admixture*. Any seed which is difficult to distinguish from a lentil, including, but not limited to, *Vicia sativa*.
- (o) *Lentils*. Threshed seeds of the lentil plant (*Lens culinaris* Medik), which after removal of the dockage, contain 50.0 percent or more of whole lentils and not more than 10.0 percent foreign material.
- (p) *Poor Color Lentils*. Lentils that are severally discolored from storage or other causes to the extent they cannot be considered of fair color.
- (q) *Skinned Lentils*. Lentils from which three fourths or more of the seedcoat has been removed.
- (r) *Split Lentils*. Pieces of lentils which are less than three fourths of a lentil, and lentils in which the cotyledons are loosely held together.
- (s) *Stones*. Concreted earthy or mineral matter, and other substances of similar hardness that do not readily disintegrate in water.
- (t) *Thresher-Run Lentils*. Lentils from which the dockage has not been removed.
- (u) *Weevil-Damaged Lentils*. Whole and pieces of lentils which are distinctly damaged by weevils or other insects.
- (v) *Whole Lentils*. Lentils with one-fourth or less of the cotyledons removed and with the remainder of the cotyledons firmly held together.

- (w) *Wrinkled Lentils*. Wrinkled lentils shall be sound lentils that are substantially wrinkled on at least 50 percent of one side.
- (x) *9/64 Round-Hole Sieve*. A metal sieve 0.0319 inch thick, perforated with round holes 0.1406 (9/64) inch in diameter which are 0.1875 (3/16) inch from center to center. (The perforations of each row shall be staggered in relation to the adjacent rows.)
- (y) *12/64 Round-Hole Sieve*. A metal sieve 0.0319 inch thick, perforated with round holes 0.1875 (12/64) inch in diameter, which are 0.250 (1/4) inch from center to center. (The perforations of each row shall be staggered in relation to the adjacent rows.)
- (z) *15/64 Round-Hole Sieve*. A metal sieve 0.0319 inch thick, perforated with round holes 0.2343 (15/64) inch in diameter, which are 0.3125 (5/16) inch from center to center. (The perforations of each row shall be staggered in relation to the adjacent rows.)

## PRINCIPLES GOVERNING THE APPLICATION OF STANDARDS

### 602 Basis of determinations.

- (a) All factor determinations shall be made upon the basis of the lentils after the removal of dockage, with the following exceptions:
  - (1) Dockage shall be determined upon the basis of the thresher-run lentils as sampled.
  - (2) Color shall be determined after removal of dockage, defective lentils, and foreign material.
- (b) Defects in lentils shall be scored in accordance with the order shown in 601(c); and once an individual lentil is scored in a defective category it shall not be scored for any other defect, but it shall remain as a part of the sample for purposes of determining the percentages of other defects in the sample.

### 603 Moisture.

Water content in lentils as determined by an FGIS approved device in accordance with procedures prescribed in the Pea and Lentil Handbook and Moisture Handbook. (See 606).

### 604 Percentages.

All percentages shall be determined on the basis of weight and shall be rounded off in accordance with instructions shown in the [Pea and Lentil Handbook](#) (see 606). Percentages shall be stated in whole and tenth percent to the nearest tenth percent.

### 605 Interpretive Line Prints.

Interpretive line samples showing the official scoring line for factors that are determined by visual observation shall be maintained by the Federal Grain Inspection Service, U.S. Department of Agriculture, and shall be available for reference in all inspection offices that inspect and grade lentils.

### 606 References.

The following publications are referenced in these standards and copies will be made available upon request to the Federal Grain Inspection Service, U.S. Department of Agriculture.

- (a) [Moisture Handbook](#), U.S. Department of Agriculture, Federal Grain Inspection Service.
- (b) [Pea and Lentil Handbook](#), U.S. Department of Agriculture, Federal Grain Inspection Service.

**GRADES, GRADE REQUIREMENTS, AND GRADE DESIGNATIONS**

**607 Grades and grade requirements for Dockage-Free Lentils. (See also 609.)**

Grading Factors	Maximum percent limits of: Grades U.S. Nos.		
	1	2	3
<b>Defective Lentils</b>			
Total <sup>1</sup>	<b>2.0</b>	<b>3.5</b>	<b>5.0</b>
Weevil-Damaged Lentils	<b>0.3</b>	<b>0.8</b>	<b>0.8</b>
<b>Heat-Damaged Lentils</b>	<b>0.2</b>	<b>0.5</b>	<b>1.0</b>
<b>Foreign Material</b>			
Total <sup>2</sup>	<b>0.2</b>	<b>0.5</b>	<b>0.5</b>
Stones	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>
<b>Skinned Lentils</b>	<b>4.0</b>	<b>7.0</b>	<b>10.0</b>
<b>Wrinkled Lentils<sup>3</sup></b>	<b>5.0</b>	<b>10.0</b>	<b>&gt;10.0</b>
<b>Contrasting Lentils<sup>4</sup></b>	<b>2.0</b>	<b>4.0</b>	<b>&gt;4.0</b>
<b>Inconspicuous Admixture</b>	<b>0.5</b>	<b>0.8</b>	<b>1.0</b>
<b>Minimum Requirements for Color</b>			
	<b>Good</b>	<b>Fair</b>	<b>Poor</b>
<p>U.S. Sample Grade shall be lentils which:</p> <ul style="list-style-type: none"> <li>a. Do not meet the requirements for the grades U.S. Nos. 1, 2, or 3; or</li> <li>b. Contain more than 14.0 percent moisture, live weevils, or other live insects, metal fragments, broken glass, or a commercially objectionable odor; or</li> <li>c. Are materially weathered, heating, or distinctly low quality.</li> </ul> <p><sup>1</sup> Defective lentils total is weevil-damaged, heat-damaged, damaged, and split lentils combined.</p> <p><sup>2</sup> Foreign material total includes stones.</p> <p><sup>3</sup> Lentils with more than 10.0 percent wrinkled lentils shall grade no higher than U.S. No. 3.</p> <p><sup>4</sup> Lentils with more than 4.0 percent contrasting lentils shall grade no higher than a U.S. No. 3.</p>			

**608 Grade Designation for Dockage-Free Lentils.**

The grade designation for dockage-free lentils shall include, in the following order: (1) The letters "U.S."; (2) the number of the grade or the words "Sample grade," as warranted; (3) the words "or better" when applicable and requested by the applicant prior to inspection; (4) the name of each applicable special grade; and (5) the name of the class.

**609 Special Grades and Requirements.**

The following special grades shall be applicable:

- (a) *Large lentils.* Lentils of the class Lentils of which not more than 3.0 percent will readily pass through a 15/64 round-hole sieve.
- (b) *Small lentils.* Lentils of the class Lentils of which 95 percent or more will readily pass through a 15/64 round-hole sieve, not less than 80 percent will readily pass through a 12/64 round-hole sieve, and not more than 3 percent will readily pass through a 9/64 round-hole sieve.
- (c) *Green lentils.* Clear seeded (green) lentils possessing a natural, uniformly green color.  
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**610 Special Grade Designation.**

Large, Small, or Green lentils shall be graded and designated according to the grade requirements of the standards otherwise applicable to lentils, and there shall be added to and made a part of the grade designation preceding the name of the class, the applicable term "Large, Small, or Green."

**611 Thresher-Run Lentils.**

Thresher-Run Lentils shall be inspected without reference to grade in accordance with instructions shown in the [Pea and Lentil Handbook](#) (see 606).

- (a) *Factor determinations:* Thresher-Run Lentils may be inspected for the following factors: class, dockage, weevil-damaged lentils, heat-damaged lentils, damaged lentils, split lentils, contrasting lentils, foreign material, and color description.
- (b) The percentage of defective lentils and foreign material shall be combined and shown on the certificate as "Total Defects and Foreign Material."