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# United States Standards for Brown Rice for Processing

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*Note to the Subpart: 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.*

*Source: 42 FR 40869, Aug. 12, 1977; 42 FR 64356, Dec. 23, 1977, unless otherwise noted.*

## Terms Defined

### 868.251 Definition of brown rice for processing

Rice (*Oryza sativa* L.) which consists of more than 50.0 percent of kernels of brown rice, and which is intended for processing to milled rice.

### 868.252 Definition of other terms

For the purposes of these standards, the following terms shall have the meanings stated below:

- (a) **Broken kernels.** Kernels of rice which are less than three-fourths of whole kernels.
- (b) **Brown rice.** Whole or broken kernels of rice from which the hulls have been removed.
- (c) **Chalky kernels.** Whole or broken kernels of rice which are one-half or more chalky.
- (d) **Classes.** There are four classes of brown rice for processing.

Long Grain Brown Rice for Processing.  
Medium Grain Brown Rice for Processing.  
Short Grain Brown Rice for Processing.  
Mixed Brown Rice for Processing.

Classes shall be based on the percentage of whole kernels, broken kernels, and types of rice.

- (1) "Long-grain brown rice for processing" shall consist of brown rice for processing which contains more than 25.0 percent of whole kernels of brown rice and not more than 10.0 percent of whole or broken kernels of medium- or short-grain rice.
- (2) "Medium-grain brown rice for processing" shall consist of brown rice for processing which contains more than 25.0 percent of whole kernels of brown rice and not more than 10.0 percent of whole or broken kernels of long-grain rice or whole kernels of short-grain rice.

(3) "Short-grain brown rice for processing" shall consist of brown rice for processing which contains more than 25.0 percent of whole kernels of brown rice and not more than 10.0 percent of whole or broken kernels of long-grain rice or whole kernels of medium-grain rice.

(4) "Mixed brown rice for processing" shall be brown rice for processing which contains more than 25.0 percent of whole kernels of brown rice and more than 10.0 percent of "other types" as defined in paragraph (i) of this section.

(e) **Damaged kernels.** Whole or broken kernels of rice which are distinctly discolored or damaged by water, insects, heat, or any other means (including parboiled kernels in nonparboiled rice and smutty kernels). "Heat-damaged kernels" (see paragraph (f) of this section) shall not function as damaged kernels.

(f) **Heat-damaged kernels.** Whole or broken kernels of rice which are materially discolored and damaged as a result of heating and parboiled kernels in nonparboiled rice which are as dark as, or darker in color than, the interpretive line for heat-damaged kernels.

(g) **Milling yield.** An estimate of the quantity of whole kernels and total milled rice (whole and broken kernels combined) that is produced in the milling of brown rice for processing to a well-milled degree.

(h) **Objectionable seeds.** Whole or broken seeds other than rice, except seeds of *Echinochloa crusgalli* (commonly known as barnyard grass, watergrass, and Japanese millet).

(I) **Other types.** (1) Whole kernels of: (i) Long grain rice in medium or short grain rice and medium or short grain rice in long grain rice, (ii) medium grain rice in long or short grain rice, (iii) short grain rice in long or medium grain rice, (2) broken kernels of long grain rice in medium or short grain rice and broken kernels of medium or short grain rice in long grain rice.

*Note: Broken kernels of medium grain rice in short grain rice and broken kernels of short grain rice in medium grain rice shall not be considered other types.*

(j) **Paddy Kernels.** Whole or broken unhulled kernels and whole or broken kernels of rice having a portion or portions of the hull remaining which cover one-half (1/2) or more of the whole or broken kernel.

(k) **Red rice.** Whole or broken kernels of rice on which the bran is distinctly red in color.

(l) **Related material.** All by-products of a paddy kernel, such as the outer glumes, lemma, palea, awn, embryo, and bran layers.

(m) **Seeds.** Whole or broken seeds of any plant other than rice.

(n) **Smutty kernels.** Whole or broken kernels of rice which are distinctly infected by smut.

(o) **Types of rice.** There are three types of brown rice for processing:

Long grain  
Medium grain  
Short grain

Types shall be based on the length/width ratio of kernels of rice that are unbroken and the width, thickness, and shape of kernels of rice that are broken as prescribed in FGIS instructions.

(p) **Ungelantinized kernels.** Whole or broken kernels of parboiled rice with distinct white or chalky areas due to incomplete gelatinization of the starch.

(q) **Unrelated material.** All matter other than rice, related material, and seeds.

(r) **Well-milled kernels.** Whole or broken kernels of rice from which the hulls and practically all of the embryos and the bran layers have been removed.

(s) **Whole kernels.** Unbroken kernels of rice and broken kernels of rice which are at least three-fourths of an unbroken kernel.

(t) **6 plate.** A laminated metal plate 0.142-inch thick, with a top lamina 0.051-inch thick, perforated with rows of round holes 0.0938 (6/64) inch in diameter, and a bottom lamina 0.091-inch thick, without perforations.

(u) **6 1/2 sieve.** A metal sieve 0.032-inch thick, perforated with rows of round holes 0.1016 (6 1/2 /64) inch in diameter.

*[13 FR 9479, Dec. 31, 1948, as amended at 44 FR 73008, Dec. 17, 1979; 47 FR 34516, Aug. 10, 1982; 54 FR 21403, 21406, May 18, 1989; 54 FR 51344, Dec. 14, 1989]*

## **Principles Governing Application of Standards**

### **868.253 Basis of determination**

The determination of kernels damaged by heat, heat-damaged kernels, parboiled kernels in nonparboiled rice, and the special grade Parboiled brown rice for processing shall be on the basis of the brown rice for processing after it has been milled to a well-milled degree. All other determinations shall be on the basis of the original sample. Mechanical sizing of kernels shall be adjusted by handpicking as prescribed in FGIS instructions, or by any method which gives equivalent results.

*[42 FR 40869, Aug. 12, 1977; 42 FR 64356, Dec. 23, 1977, as amended at 47 FR 34516, Aug. 10, 1982; 54 FR 21403, 21406, May 18, 1989]*

### **868.254 Broken kernels determination**

Broken kernels shall be determined by the use of equipment and procedures prescribed in FGIS instructions, 2/ or by any method which gives equivalent results.

*[42 FR 40869, Aug. 12, 1977; 42 FR 64356, Dec. 23, 1977, as amended at 47 FR 34516, Aug. 10, 1982; 54 FR 21403, May 18, 1989. Redesignated at 54 FR 21406, May 18, 1989]*

#### **868.255 Interpretive line samples**

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 rice.

*[42 FR 40869, Aug. 12, 1977; 42 FR 64356, Dec. 23, 1977, as amended at 47 FR 34516, Aug. 10, 1982; 54 FR 21403, May 18, 1989. Redesignated at 54 FR 21406, May 18, 1989]*

#### **868.256 Milling requirements**

In determining milling yield (see 868.252(g)) in brown rice for processing, the degree of milling shall be equal to, or better than, that of the interpretive line sample for "well-milled" rice.

*[42 FR 40869, Aug. 12, 1977. Redesignated at 21406, May 18, 1989]*

#### **868.257 Milling yield determination**

Milling yield shall be determined by the use of an approved device in accordance with procedures prescribed in FGIS instructions. For the purpose of this paragraph, "approved device" shall include the McGill Miller No. 3 and any other equipment that is approved by the Administrator as giving equivalent results.

*Note: Milling yield shall not be determined when the moisture content of the brown rice for processing exceeds 18.0 percent.*

*[42 FR 40869, Aug. 12, 1977; 42 FR 64356, Dec. 23, 1977, as amended at 47 FR 34516, Aug. 10, 1982; 54 FR 21403, May 18, 1989. Redesignated at 54 FR 21406, May 18, 1989]*

#### **868.258 Moisture**

Water content in brown rice for processing as determined by an approved device in accordance with procedures prescribed in FGIS instructions. For the purpose of this paragraph, "approved device" shall include the Motomco Moisture Meter and any other equipment that is approved by the Administrator as giving equivalent results.

[42 FR 40869, Aug. 12, 1977; 42 FR 64356, Dec. 23, 1977, as amended at 47 FR 34516, Aug. 10, 1982; 54 FR 21403, May 18, 1989. Redesignated at 54 FR 21406, May 18, 1989]

### 868.259 Percentages

(a) **Rounding.** Percentages are determined on the basis of weight and are rounded as follows:

(1) When the figure to be rounded is followed by a figure greater than or equal to 5, round to the next higher figure; e.g., report 6.36 as 6.4, 0.35 as 0.4, and 2.45 as 2.5.

(2) When the figure to be rounded is followed by a figure less than 5, retain the figure, e.g., report 8.34 as 8.3 and 1.22 and 1.2.

(b) **Recording** All percentages, except for milling yield, are stated in whole and tenth percent to the nearest whole percent. Milling yield is stated to the nearest whole percent.

[54 FR 21406, May 18, 1989]

### 868.260 Information

Requests for the Rice Inspection Handbook, Equipment Handbook, or for information concerning approved devices and procedures, criteria for approved devices, and requests for approval of devices should be directed to the U.S. Department of Agriculture, Federal Grain Inspection Service, P.O. Box 96454, Washington, DC 20090-96454, or any field office or cooperator.

[54 FR 21406, May 18, 1989]

## Grades, Grade Requirements, and Grade Designations

**868.261 Grade and grade requirements for the classes of brown rice for processing**  
(See also 868.263.)

		Maximum limits of--								
		Paddy kernels		Seeds and heat-damaged kernels						
Grade U.S. No.	Percent	Number in 500 grams	Total (singly or combined) (number in grams)	Heat-damaged kernels (number in 500 grams)	Objectionable seeds (number in 500 grams)	Red rice and damaged kernels (singly or combined) (percent)	Chalky kernels [1], [2] (percent)	Broken kernels removed by a 6 plate or a 6 1/2 seive[3] (percent)	Other types [4]	Well-milled kernels (percent)
1	--	20	10	1	2	1.0	2.0	1.0	1.0	1.0
2	2.0	--	40	2	10	2.0	4.0	2.0	2.0	3.0
3	2.0	--	70	4	20	4.0	6.0	3.0	5.0	10.0
4	2.0	--	100	8	35	8.0	8.0	4.0	10.0	10.0
5	2.0	--	150	15	50	15.0	15.0	6.0	10.0	10.0

**U.S. Sample grade** shall be brown rice for processing which (a) does not meet the requirements for any of the grades from U.S. No. 1 to U.S. No. 5, inclusive; (b) contains more than 14.5 percent of moisture; (c) is musty, or sour, or heating; (d) has any commercially objectionable foreign odor; (e) contains more than 0.2 percent of related material or more than 0.1 percent of unrelated material; (f) contains two or more live weevils or other live insects; or (g) is otherwise of distinctly low quality.

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[1] For the special grade Parboiled brown rice for processing, see 868.263(a).

[2] For the special grade Glutinous brown rice for processing, see 868.263(c).

[3] Plates should be used for southern production rice and sieves should be used for western production rice, but any device or method which gives equivalent results may be used.

[4] These limits do not apply to the class Mixed Brown Rice for Processing.

*[56 FR 55979, Oct. 31, 1991]*

#### **868.262 Grade designation**

(a) The grade designation for all classes of brown rice for processing, except Mixed Brown Rice for Processing, 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 class; and (5) each applicable special grade (see 868.264).

(b) The grade designation for the class Mixed Brown Rice for Processing 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 class; (5) each applicable special grade (see 868.264); (6) the percentage of whole kernels of each type in the order of predominance; and when applicable; (7) the percentage of broken kernels of each type in the order of predominance; and (8) the percentage of seeds, related material, and unrelated material.

*Note: Broken kernels other than long grain, in Mixed Brown Rice for Processing, shall be certificated as "medium or short grain."*

### **Special Grades, Grade Requirements, and Grade Designations**

#### **68.263 Special grades and special grade requirements.**

A special grade, when applicable, is supplemental to the grade assigned under 868.262. Such special grades for brown rice for processing are established and determined as follows:

(a) **Parboiled brown rice for processing.** Parboiled brown rice for processing shall be rice in which the starch has been gelatinized by soaking, steaming, and drying. Grades U.S. Nos. 1 to 5, inclusive, shall contain not more than 10.0 percent of ungelatinized kernels. Grades U.S. No. 1 and U.S. No. 2 shall contain not more than 0.1 percent, grades U.S. No. 3 and U.S. No. 4 not more than 0.2 percent, and grade U.S. No. 5 not more than 0.5 percent of nonparboiled rice.

*Note: The maximum limits for "Chalky kernels," "Heat-damaged kernels," and "Kernels damaged by heat" shown in 868.261 are not applicable to the special grade "Parboiled brown rice for processing."*

(b) **Smutty brown rice for processing.** Smutty brown rice for processing shall be rice which contains more than 3.0 percent of smutty kernels.

(c) **Glutinous brown rice for processing.** Glutinous brown rice for processing shall be special varieties of rice (*Oryza sativa* L. *glutinosa*) which contain more than 50 percent chalky kernels. Grade U.S. No. 1 shall contain not more than 1.0 percent of nonchalky kernels, grade U.S. No. 2 not more than 2.0 percent of nonchalky kernels, grade U.S. No. 3 not more than 4.0 percent of nonchalky kernels, grade U.S. No. 4 not more than 6.0 percent of nonchalky kernels, and grade U.S. No. 5 not more than 10.0 percent of nonchalky kernels.

*Note: The maximum limits for "Chalky kernels" in 868.261 are not applicable to the special grade "Glutinous brown rice for processing."*

(d) **Aromatic brown rice for processing.** Aromatic brown rice for processing shall be special varieties of rice (*Oryza sativa* L. scented) that have a distinctive and characteristic aroma; e.g., basmati and jasmine rice.

*[42 FR 40869, Aug. 12, 1977; 42 FR 64356, Dec. 23, 1977, as amended at 56 FR 55979, Oct. 31, 1991; 58 FR 68016, Dec. 23, 1993]*

#### **868.264 Special grade designation**

The grade designation for parboiled, smutty, glutinous, or aromatic brown rice for processing shall include, following the class, the word(s) "Parboiled," "Smutty," "Glutinous," or "Aromatic," as warranted, and all other information prescribed in 1A68.262.

*[58 FR 68016, Dec. 23, 1993]*