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EC59-127 Grain Sorghum Kernel Damage

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GRAIN SORGHUM KERNEL DAMAGE
PRINCIPAL GRAIN SORGHUM KERNEL DAMAGE

HEAT DAMAGED
Kernels and pieces of kernels of grain sorghums, non-grain sorghums and other grains which have been materially discolored and damaged by external heat or as a result of heating caused by fermentation.

BLACK GERM DAMAGE
Black germ and some mold damage results from grain going out of condition in storage. Damage may be in sufficient quantity to result in a musty or sour odor.

MOLD AND GROUND DAMAGE
Damage as a result of weather or having been on the ground. Care should be taken not to confuse this condition with stains and discolorations resulting from weathering.

INSECT DAMAGE (Weevil Bored)
Kernels which have been bored by insects are considered damaged.
SPROUT DAMAGED
Sprouted kernels are considered damaged, but the evidence of sprouting must be conclusive.

BADLY WEATHERED
Grain sorghums which are "badly weathered" are graded "Sample grade." "Badly weathered" is a grading factor for the determination of "Sample grade" and is not shown on the certificate as a special grade but is shown as a reason for applying "Sample grade."

OTHER GRADING FACTORS

DOCKAGE
Includes sand, dirt, finely broken kernels, weed seeds, and other foreign material, which can be removed readily from the grain sorghums by use of a metal sieve perforated with round holes 2\(\frac{1}{2}\)/64-inch in diameter. Dockage is stated in terms of a whole percent. A fraction of a percent is disregarded.

CRACKED KERNELS, FOREIGN MATERIAL AND OTHER GRAINS
Includes kernels and pieces of kernels of grain sorghums, and all matter other than dockage which passes through a triangular sieve with perforations 5/64-inch in diameter, and also other grains and other matter except grain sorghums and non-grain sorghums remaining on sieve after screening.
SPECIAL GRADES

BRIGHT GRAIN SORGHUM
Grain sorghums which have good natural color. The word “Bright” is added to and made a part of the grade designation—Example: One Bright Yellow Milo.

DISCOLORED GRAIN SORGHUM
Discoloration caused by a weather condition, but which are not badly weathered. The word “Discolored” is added to and made a part of the grade designation. Example: 2 Yellow Milo, Discolored.

WEEVILY
Grain sorghums which are infested with live weevils or other insects injurious to stored grain. The word “weevily” is added to and made a part of the grade designation.

SMUTTY
Grain sorghums which have kernels covered with smut spores, or which contain a quantity of smut masses in excess of a quantity equal to 10 masses in 50 grams of grain sorghums. The word “smutty” is added to and made a part of the grade designation.
NON-GRAIN SORGHUMS
Non-grain sorghums shall include Broom-
corn, Sudangrass, Johnsongrass, and Cane
Seed. Non-grain sorghum shall be character-
ized by the tightly clasped hull, by color
which commonly is a shiny red, black, lemon
yellow or buff, and by the size of the kernels
which are smaller than true grain sorghum
seed and range in size from a large mustard
seed to that of a large cockle seed. Rarely
white in color.

JOHNSONGRASS MIXTURE
IN GRAIN SORGHUM

Johnsongrass is a more serious mixture in
grain sorghums than are other non-grain
sorghums. It is a troublesome, hard to con-
trol weed and is declared a noxious weed in
many states. Johnsongrass spreads by seed
and by rhizomes. Every effort needs to be
made to prevent spreading this weed through
seed and feed grains.

Johnsongrass-sorghum crosses, such as sorg-
hum almum, have seed characteristics al-
most identical to Johnsongrass. For this rea-
son, the sale of such crop seed is prohibited
by law in many states. These Johnsongrass
derivatives usually are not serious weeds in
themselves. However, since the seed cannot
definitely be distinguished from Johnson-
grass, it is called Johnsongrass when found
in other crop seed or grain and must be
handled as Johnsongrass contamination.
Therefore, sorghum almum and similar
Johnsongrass derivatives must be considered
serious mixtures in seed and grain.

Samples pictured were selected by Joseph E.
Elstner, officer in
charge Kansas City District, U. S. Department of Agriculture,
Agricultural Marketing Service, Grain Division, and passed on
by Board of Grain Supervisors at Chicago.

EFFECTIVE WEED CONTROL DEPENDS ON THE PREVENTION OF
WEED SEED DISTRIBUTION THROUGH SEED AND FEED
GRADE REQUIREMENTS FOR GRAIN SORGHUMS

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum test weight per bushel</th>
<th>Moisture</th>
<th>Damaged kernels (grain sorghums, non-grain sorghums, and other grains)</th>
<th>Non-grain sorghums</th>
<th>Total cracked kernels, foreign material, and other grains</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pounds</td>
<td>Percent</td>
<td>Total</td>
<td>Heat-damaged</td>
<td>Percent</td>
</tr>
<tr>
<td>1</td>
<td>55</td>
<td>14</td>
<td>2</td>
<td>0.2</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>53</td>
<td>15</td>
<td>5</td>
<td>0.5</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>51</td>
<td>16</td>
<td>10</td>
<td>1.0</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>49</td>
<td>18</td>
<td>15</td>
<td>3.0</td>
<td>10</td>
</tr>
</tbody>
</table>

**SAMPLE:** Sample grade shall include grain sorghums of any class or subclass which do not come within the requirements of any of the grades from No. 1 to No. 4, inclusive; or which contain inseparable stones and/or cinders; or which are musty, or sour, or heating, or hot; or which are badly weathered; or which have any commercially objectionable foreign odor except of smut; or which are otherwise of distinctly low quality.

## GRAIN SORGHUMS

Grain sorghums shall be any grain which, before the removal of dockage, consists of 50 percent of more of grain sorghums and not more than 10 percent of other grains for which standards have been established under the provisions of the United States Grain Standards Act, and which, after the removal of dockage and of "cracked kernels, foreign material, and other grains", contains not more than 25 percent of non-grain sorghums.

**WHITE GRAIN SORGHUMS (Class I)**

This class shall include all varieties of white grain sorghums, and may include not more than 10 percent of grain sorghums of other colors. Colored spots upon kernels that are otherwise white shall not affect their classification as white. This class shall be divided into three subclasses.

**YELLOW GRAIN SORGHUMS (Class II)**

This class shall include all varieties of yellow and salmon-pink grain sorghums, and may include not more than 10 percent of grain sorghums of other colors. This class shall be divided into two subclasses.

**RED GRAIN SORGHUMS (Class III)**

This class shall include all varieties of red grain sorghums, and may include not more than 10 percent of grain sorghums of other colors. This class shall be divided into two subclasses.

**BROWN GRAIN SORGHUMS (Class IV)**

This class shall include all varieties of brown grain sorghums, and may include not more than 10 percent of grain sorghum of other colors.

**MIXED GRAIN SORGHUMS (Class V)**

This class shall include all mixtures of grain sorghums not provided for in the classes from I to IV, inclusive.

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