

MISSISSIPPI SOYBEAN PRODUCER'S

Field Guide to Soybean Damage



Dear Mississippi soybean grower and to all involved with Mississippi's soybean industry:

On behalf of the Mississippi Soybean Promotion Board, the Mississippi Department of Agriculture & Commerce, the Mississippi State University Extension Service, the Mississippi Farm Bureau Federation, and the Delta Council, we are happy to bring you this booklet with images and descriptions of the most common types of soybean damage. We hope this effort will help everyone involved in the soybean industry in Mississippi to better understand the types of soybean damage and the grading standards utilized by the United State Department of Agriculture (USDA) to determine levels of damage to soybeans.

Soybeans are a vital commodity to agriculture in Mississippi and to the state's economy as a whole. In 2008, soybeans ranked third in value of production among all Mississippi-grown commodities behind only forestry and poultry. Additionally, an estimated 2.1 million acres of soybean were planted this year, more acres than any other commodity grown in the state.

It is important that everyone involved in the Mississippi soybean industry be able to identify soybean damage and be familiar with the USDA standards that apply to this situation as your commodity arrives in the marketplace. We hope this booklet is helpful and will provide you with such information.

Sincerely,

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Grades and Grade Requirements for Soybeans

Grading Factors	Grades U.S. Nos.			
	1	2	3	4
Maximum percent limits of				
Damaged kernels:				
Heat (part of total)	0.2	0.5	1.0	3.0
Total	2.0	3.0	5.0	8.0
Foreign material	1.0	2.0	3.0	5.0
Splits	10.0	20.0	30.0	40.0
Soybeans of other colors ^{1/}	1.0	2.0	5.0	10.0
Maximum count limits of				
Other materials:				
Animal filth	9	9	9	9
Castor beans	1	1	1	1
Crotalaria seeds	2	2	2	2
Glass	0	0	0	0
Stones ^{2/}	3	3	3	3
Unknown foreign substance	3	3	3	3
Total ^{3/}	10	10	10	10
<p>U.S. Sample Grade are soybeans that:</p> <p>(a) Do not meet the requirements for U.S. Nos. 1,2,3 or 4; or</p> <p>(b) Have a musty, sour, or commercially objectionable foreign odor (except garlic odor); or</p> <p>(c) Are heating or otherwise distinctly low quality.</p>				
<p>^{1/} Disregard for mixed soybeans.</p> <p>^{2/} In addition to the maximum count limit, stones must exceed 0.1 percent of the sample weight.</p> <p>^{3/} Includes any combination of animal filth, castor beans, crotalaria seeds, glass, stones, and unknown foreign substances. The weight of stones is not applicable for total other material.</p>				

Source: Official U.S. Standards for Grain, Federal Grain Inspection Service, United States Department of Agriculture

Badly ground and/or weather damage



Soybeans in which the seed coats are discolored to the extent that the area of damage coverage and intensity is equal to or greater than shown.

Heat damage (Materially Damaged/Heating)



Soybeans and pieces of soybeans which are materially discolored and damaged by heat with an area of coverage and intensity equal to or greater than shown.

Damaged by heat



Soybeans and pieces of soybeans which have been damaged by heat and the area of coverage and intensity is equal to or greater than shown.

Green damage



Soybeans and pieces of soybeans that are discolored green with an area of coverage and intensity equal to or greater than shown.

Immature damage



Soybeans and pieces of soybeans which are immature and have a thin, flat, wrinkled, or wafer-like appearance. Immature soybeans are considered normal unless damaged by other causes.

Mold damage



A. INVADED BY MOLD

Soybeans that are discolored, elongated, or misshapen and contain white or gray mold on the seed coat equal to or greater than combined amounts shown.



B. SURFACE MOLD GROWTH

Soybeans with little or no apparent deterioration having a milky white or grayish crusty growth caused by downy mildew on 50 percent or more of the seed coat in sufficient concentration to meet or exceed the minimum shown shall be considered damage.

Stinkbug damage



Soybeans which show an indentation or discoloration on the seed coat caused by stinkbug or insect stings. To determine the extent of damage, it is generally necessary to cross-section the soybean.

Shriveled or wrinkled damage



Whole, sound soybeans that are wrinkled to the minimum extent shown are considered shriveled and wrinkled.

Purple mottled and Stained (fungus)



Samples of soybeans with high concentrations of individual soybeans with pink or purple stained seed coats that cover all or part of the kernel are qualified on the pan ticket and certificate with the special grade designation "Purple Mottled or Stained."

Soybeans having purple mottle or stain are considered normal unless damaged by other causes.

This Soybean Damage Field Guide is brought to you by:



Mississippi Soybean Promotion Board



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