

Learn the lingo for grain grading

THE USDA's Federal Grain Inspection Service, or FGIS, sets standards for grain grading and prints them in the "Official United States Standards for Grain" booklet. Among those standards are a useful set of definitions.

Corn

Broken corn: All matter that passes readily through a $\frac{1}{64}$ round-hole sieve and over a $\frac{3}{64}$ round-hole sieve according to procedures prescribed in FGIS instructions.

Broken corn and foreign material: All matter that passes readily through a $\frac{1}{64}$ round-hole sieve and all matter other than corn that remains in the sieved sample after sieving according to procedures prescribed in FGIS instructions.

Classes: Three classes: Yellow, White and Mixed.

Damaged kernels: Kernels and pieces of corn kernels that are badly ground-damaged, badly weather-damaged, diseased, frost-damaged, germ-damaged, heat-damaged, insect-bored, mold-damaged, sprout-damaged or otherwise materially damaged.

Foreign material: All matter that passes readily through a $\frac{3}{64}$ round-hole sieve and all matter other than corn that remains on top of the $\frac{1}{64}$ round-hole sieve after sieving according to procedures prescribed in FGIS instructions.

Heat-damaged kernels: Kernels and pieces of corn kernels that are materially discolored and damaged by heat.

Sieves: Two types: A $\frac{1}{64}$ round-hole sieve is a metal sieve 0.032 inch thick with round perforations 0.1875

($\frac{1}{64}$) inch in diameter that are $\frac{1}{4}$ inch from center to center. A $\frac{3}{64}$ round-hole sieve is a metal sieve 0.032 inch thick with round perforations 0.0937 ($\frac{3}{64}$) inch in diameter that are $\frac{5}{32}$ inch from center to center. On both types, the perforations of each row shall be staggered in relation to the adjacent row.

Sample Grade: U.S. Sample Grade is corn that does not meet the requirements for the grade U.S. Nos. 1-5; or contains stones with an aggregate weight in excess of 0.1% of the sample, two or more pieces of glass, three or more crotalaria seeds, two or more castor beans, four or more particles of an unknown foreign substance or a commonly recognized harmful or toxic substance, eight or more cockleburs or similar seeds singly or in combination, or animal filth in excess of 0.2% in 1,000 grams; or has a musty, sour or commercially objectionable foreign odor; or is heating or otherwise of distinctly low quality.

DAMAGED GOODS: Corn that's split and cracked is hard to store and hard to keep in condition, says Gordy Miller.

Soybeans

Classes: Two classes: Yellow and Mixed.

Damaged kernels: Soybeans and pieces of soybeans that are badly ground-damaged, badly weather-damaged, diseased, frost-damaged, germ-damaged, heat-damaged, insect-bored, mold-damaged, sprout-damaged or otherwise materially damaged. Stinkbug-stung kernels are considered damaged kernels at the rate of a fourth of the actual percentage of the stung kernels.

Foreign material: All matter that passes readily through an $\frac{3}{64}$ round-hole sieve and all matter other than soybeans that remains on top of the $\frac{1}{64}$ round-hole sieve after sieving according to procedures prescribed by FGIS.



Heat-damaged kernels: Soybeans and pieces of soybeans

that are materially discolored and damaged by heat.

Purple mottled or stained: Soybeans that are discolored by the growth of a fungus, dirt, a dirt-like substance including nontoxic inoculants, or other nontoxic substances.

$\frac{3}{64}$ round-hole sieve: A metal sieve 0.032 inch thick, perforated with round holes 0.125 ($\frac{3}{64}$) inch in diameter.

Soybeans of other colors: Soybeans that have green, black, brown or bicolored seed coats. Soybeans that have green seed coats will also be green in cross section. Bicolored soybeans will have seed coats of two colors, one of which is brown or black, and the color covers 50% of the seed coats. The hilum is not considered a part of the seed coat for this determination.

Splits: Soybeans with more than a quarter of the bean removed and that are not damaged.

Garlicky soybeans: Soybeans that contain five or more green garlic bulblets or an equivalent quantity of dry or partly dry bulblets in a 1,000-grain portion.

Sample Grade: U.S. Sample Grade are soybeans that do not meet the requirements for U.S. Nos. 1-4; or have a musty, sour or commercially objectionable odor (except garlic odor); or are heating or otherwise of distinctly low quality.

What's it take to be No. 1?

Grade	Minimum test weight per bushel (pounds)	Maximum limits of:		
		Damaged kernels		Broken corn and foreign material (percent)
		Heat-damaged kernels (percent)	Total (percent)	
U.S. No. 1	56.0	0.1	3.0	2.0
U.S. No. 2	54.0	0.2	5.0	3.0
U.S. No. 3	52.0	0.5	7.0	4.0
U.S. No. 4	49.0	1.0	10.0	5.0
U.S. No. 5	46.0	3.0	15.0	7.0

Grading a top bean

Grading factors	Grade 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	8.0
Splits	10.0	20.0	30.0	40.0
Soybeans of other colors	1.0	2.0	5.0	10.0

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