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FAIRS Subject Report

Soybean Quality Standards

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Report Highlights:

On July 3, 2008, China notified the WTO of National Standard GB-1532-2006 "National Standard for Soybeans" as TBT/N/CHN/402. The WTO official comment period for this notification is open until September 3, 2008. This report contains an UNOFFICIAL translation of the draft standard.

Includes PSD Changes: No
Includes Trade Matrix: No
Annual Report
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Executive Summary

On July 3, 2008, China notified the WTO of the National Standard GB-1532-2006 "National Standard for Soybeans" (Replacing GB 1352-1986) as TBT/N/CHN/402. This standard specifies the relevant terms and definitions, classifications, quality requirements, test methods, and requirements for labeling, packaging, transportation and storage of soybeans. This standard also applies to testing, evaluation and identification of the quality of commercial soybeans. An implementation date has not been specified.

The trade impact of this draft standard remains unclear. However, attention should be paid to the new indicators for high-oil and high-protein soybeans, soybean color standards, and all quality indicators.

Industry representatives are encouraged to comment on the draft standard before September 3, 2008. This report contains an UNOFFICIAL translation of the original document.

BEGIN UNOFFICIAL TRANSLATION

National Standard of the People's Republic of China

GB1352-2006

Replacing GB 1352-1986

Soybean

(Submitted for approval)

(Completed in February 2007)

Issue date: mm-dd-yyyy Implementation date: mm-dd-yyyy

Issued by State Bureau of Quality and Technical Supervision

Foreword

Sub-article 5.1, 7.1 and Chapter 8 of this Standard are mandatory and the rest are voluntary.

This Standard is a revision of GB 1352—1986 *Soybean*.

The main technical differences between this Standard and GB1352—1986:

—Revision of application scope. After revision, this Standard is applicable to "testing, evaluation and qualification of marketable soybeans".

—Soybean classification is partially modified.

—Quality indicators are adjusted and percentage of perfect kernel is adopted for grade determination.

—Quality indicators are revised.

- Establishment of quality indicators of high-oil soybean and high-protein soybean
- Addition of determination rules
- Addition of requirements for labeling
- Addition of normative Annex A. Inspection methods for perfect kernel, damaged kernel and heat-damaged kernel are specified in Annex A.

Annexes of this Standard are normative.

This Standard was proposed by State Administration of Grain.

This Standard is under the jurisdiction of National Grain and Edible Oil Standardization Technical Committee.

This Standard was drafted by Nanjing University of Finance & Economics, Heilongjiang Grain & Edible Oil Hygiene Inspection & Surveillance Station and Jilin Grain & Edible Oil Hygiene Inspection & Surveillance Station.

The main drafters of this Standard are Yuan Jian, Ju Xingrong, Song Xiujuan and Xie Yuzhen.

This Standard will replace GB 1352—1986 *Soybean* from the date of implementation.

Soybean

1 Scope

This Standard specifies terms and definitions, classification, quality requirement, inspection method, labeling, packaging, transport and storage etc of soybean.

This Standard is applicable to the inspection, evaluation and qualification of marketable soybean.

2 Normative references cited

Through reference in this Standard, provisions of the following documents constitute provisions of this Standard. For dated documents, their subsequent amendments (excluding corrigenda) or revised editions are not applicable to this Standard. However, parties that have reached an agreement based on this Standard are encouraged to investigate the possibility of applying the most recent editions of these documents. For undated documents, their most recent editions are applicable to this Standard.

GB 2715	Grain Hygienic Standard	
GB 5491	Inspection of grain and oilseeds-	Methods for sampling and sample reduction
GB/T 5492	Inspection of grain and oilseeds-	Methods for identification of color, odor and taste
GB/T 5493	Inspection of grain and oilseeds-	Methods for determination of varieties and their mixture
GB/T 5494	Inspection of grain and oilseeds-	Methods for determination of foreign matters and unsound kernels
GB/T 5497	Inspection of grain and oilseeds-	Methods for determination of moisture content
GB/T 5511	Inspection of grain and oilseeds-	Methods for determination of crude protein
GB/T 5512	Inspection of grain and oilseeds-	Methods for determination of crude fat
GB 7718	General Standard for the Labeling of Prepackaged Foods	

GB 13078 Hygienic Standard for Feed

GB 19641 Hygienic Standard for Oil Seeds

3 Terms and definitions

The following terms and definitions are applicable to this Standard.

3.1 Perfect kernel

Sound kernel

Undamaged kernel with sound and perfect seed

3.2 Immature kernel

Kernel significantly different from normal kernels: its seed is not plump and at least 1/2 of kernel surface is shrunken or the green part of cotyledon is or above 1/2 of the surface (excluding green-seed soybean).

3.3 Damaged kernel

Soybean severely damaged due to friction, frost, bacteria, mildew, sprouting, heat or other causes

3.3.1 Insect-bored kernel

Kernel bored by insects with cotyledon damaged

3.3.2 Spotted kernel

Kernels with spotted surface, whose cotyledon is damaged

3.3.3 Sprouted kernel

Kernel whose sprout or radical has broken through seed capsule or kernel which has swollen due to absorption of moisture

3.3.4 Molded kernel

Kernels with moldy surface

3.3.5 Frost-damaged kernel

Kernel whose seed gets transparent or whose cotyledon gets frozen and dark green due to frost

3.3.6 Heat-damaged kernel

Kernel whose cotyledon has changed in color and damaged due to heat

3.4 Broken kernel

Kernel whose broken cotyledon accounts for at least 1/4 of its volume

3.5 Soybean in other colors

Kernel whose seed capsule color differs from that of the rest in one batch

3.6 Impurities

Non-soybean substances left in samples after passing specified sieves and screens

3.6.1 Passed sieve material

Substances passing a F3.0mm circular screen

3.6.2 Inorganic impurity

Soil, sandstone, small pieces of broken tiles and bricks and other inorganic matters

3.6.3 Organic impurity

Valueless soybeans, grains of other species, and other organic substances

3.7 Color, odor

The color and odor inherent to a batch of soybeans

3.8 Percent of perfect kernels

The percentage of mass of perfect kernels to that of the whole sample

3.9 Percent of damaged kernel

The percentage of mass of damaged kernels to that of the whole sample

3.10 Percent of heat-damaged kernel

The percentage of mass of heat-damaged kernels to that of the whole sample

3.11 High-oil soybean

Soybean whose crude fat content is no less than 20.0%

3.12 High-protein soybean

Soybean whose crude protein content is no less than 40.0%

4 Classification

Soybeans can be classified into the following types according to the color of their seed capsules:

- 4.1 Yellow soybean: Soybeans whose seed color is yellow or straw yellow and whose hilum color is fulvous, hazel or puce. They are allowed to contain no more than 5.0% of soybeans of other types.
- 4.2 Green soybean: Soybeans whose seed capsule is green. They can be further classified into the following two sub-types according to the color of cotyledon: soybeans with green seed capsule and green seed; soybeans with green seed capsule and yellow seed. They are allowed to contain no more than 5.0% of soybeans of other types.
- 4.3 Black soybean: Soybeans whose seed capsule is black. They can be further classified into the following two sub-types according to the color of cotyledon: soybeans with black seed capsule and green seed; soybeans with black seed capsule and yellow seed. They are allowed to contain no more than 5.0% of soybeans of other types.
- 4.4 Other soybeans: Single-color soybeans whose seed capsule is brown, yellowish brown and red etc. and dual-color soybeans (seed capsule has two colors and one of them is brown or black, covering more than 1/2 of kernel surface) etc.
- 4.5 Mixed soybean: Mixture of soybeans that do not fall into the above-mentioned types.

5 Quality requirement

- 5.1 Quality indicators of soybean should meet the requirements in Table 1.

Table 1 Quality indicators of soybean

Grade	Percent of perfect kernel/ (%)	Percent of damaged kernel / (%)		Impurities/ (%)	Moisture/ (%)	Soybean in other colors/ (%)	Odor and color
		Total	where: heat-damaged kernel				
1	=95.0	=1.0	=0.2	=1.0	=13.0	=5.0	Normal
2	=90.0	=2.0	=0.2				
3	=85.0	=3.0	=0.5				
4	=80.0	=5.0	=1.0				
5	=75.0	=8.0	=3.0				

5.2 Quality indicators of high-oil soybean should meet the requirements in Table 2.

Table 2 Quality indicators of high-oil soybean

Grade	Crude fat content (dry basis)/ (%)	Percent of perfect kernel/ (%)	Percent of damaged kernel / (%)		Impurities/ (%)	Moisture/ (%)	Soybean in other colors / (%)	Color and odor
			Total	where: heat-damaged kernel				
1	=22.0	=85.0	=3.0	=0.5	=1.0	=13.0	=5.0	OK
2	=21.0							
3	=20.0							

5.3 Quality indicators of high-protein soybean should meet the requirements in Table 3.

Table 3 Quality indicators of high-protein soybean

Grade	Crude protein content (dry basis) (%)	Percent of perfect kernel/ (%)	Percent of damaged kernel / (%)		Impurities/ (%)	Moisture/ (%)	Soybean in other colors/ (%)	Color and odor
			Total	where: heat-damaged kernel				
1	=44.0	=90.0	=2.0	=0.2	=1.0	=13.0	=5.0	OK
2	=42.0							
3	=40.0							

5.4 Hygienic standard

Soybean used for foodstuff should meet the requirement of GB 2715 and GB 19641; soybean used for feedstuff should meet the requirement of GB 13078. Soybeans used for other purposes should meet the requirement of relevant national standards and regulations.

5.5 Plant quarantine

Relevant national standards and regulations shall be followed for plant quarantine.

6 Inspection method

6.1 For sampling and sample reduction, GB 5491 shall be followed.

- 6.2 The percent of perfect kernel shall be determined using the methods specified in Annex A.
- 6.3 The percent of damaged kernel shall be determined using the methods specified in Annex A.
- 6.4 Heat-damaged kernels shall be determined using the methods specified in Annex A.
- 6.5 Impurities and unsound kernels shall be determined using the methods specified in GB/T 5494.
- 6.6 Moisture shall be determined using the methods specified in GB/T 5497.
- 6.7 Soybean in other colors shall be determined using the methods specified in GB/T 5493.
- 6.8 Color and odor shall be determined using the methods specified in GB/T 5492.
- 6.9 Crude protein content shall be determined using the methods specified in GB/T 5511.
- 6.10 Crude fat content shall be determined using the methods specified in GB/T 5512.

7 Rules for grading

- 7.1 Soybeans are graded according to their percent of perfect kernels; soybeans whose percent of perfect kernel is below that of the lowest grade are regarded as off-grade soybeans.
- 7.2 High-oil soybeans are graded according to their crude fat content. Soybeans whose crude fat content is below that of the lowest grade are not regarded as high-oil soybeans.
- 7.3 High-protein soybeans are graded according to their crude protein content. Soybeans whose crude protein content is below that of the lowest grade are not regarded as high-protein soybeans.

8 Labeling

Labeling shall meet the following provisions in addition to GB 7718:

- 8.1 Any product labeled as "soybean" shall meet the requirements of this Standard.
- 8.2 Transgenic soybeans shall be labeled as per relevant national regulations.
- 8.3 Product origin shall be indicated.

9 Packaging, storage and transport

9.1 Packaging

Packaging materials or containers up to hygienic standards shall be adopted for soybean packaging. The package shall be intact, unbroken and unpolluted.

9.2 Storage

Soybean should be stored in clean, dry and unpolluted warehouse. Measures should be taken to protect soybean from being co-stored with other substances that have peculiar smell or high moisture content, or that are toxic and hazardous.

9.3 Transport

Soybeans should be transported by or with tools and containers up to hygienic standards. During transportation, measures should be taken to protect them from rain and pollution.

Annex A
(Normative annex)
Inspection Method for Percents of Perfect Kernels, Damaged Kernels and Heat-damaged Kernels

A.1 Instruments and Appliances

- A.1.1** Balance, sensitive quantity: 0.01g;
A.1.2 Grain screen;
A.1.3 Sample divider, sample-dividing plate
A.1.4 Analysis plate, capsule, forceps etc.

A.2 Operation Methods

Based on GB 5491, samples of 500g (W1) should be taken and screened twice using the methods specified in GB/T 5494. Then, large impurities on sieve and passed sieve material should be weighted together (W2). Weigh and take 100g (W3) of impurities from the inspected large sample and put them into analysis plate. After that, impurities, damaged kernels, immature kernels and broken kernels should be respectively picked out and weighted (W4, W5 and W6). Heat-damaged kernels should be picked out separately (if necessary, experimenter should peel off seed capsule to see whether the color of cotyledon has changed) and weighted (W7).

A.3 Calculation**A.3.1** Formula for the calculation of percent of perfect kernel (1)

$$\text{Percent of perfect} \quad \left(1 - \frac{W_2}{W_1}\right) \times \left(\frac{W_3 - W_4 - W_5 - W_6}{W_3}\right) \times 100 \dots\dots\dots(1)$$

- where: W1—Mass of large sample, g
 W2—Mass of large sample impurities, g
 W3—Mass of small sample, g
 W4—Mass of small sample impurities, g
 W5—Mass of damaged kernel (including heat-damaged kernel), g
 W6—Mass of broken kernel and immature kernel, g

The allowable difference between two test results should be no more than 1%. The mean value of the two results is taken as test result. The test result is calculated to one decimal place.

A.3.2 Formula for the calculation of percent of damaged kernel (2):

$$\text{Percent of damaged} \quad \left(1 - \frac{W_2}{W_1}\right) \times \left(\frac{W_5}{W_3}\right) \times 100 \dots\dots\dots(2)$$

A.3.3 Formula for the calculation of percent of heat-damaged kernel (3):

$$\text{Percent of heat-damaged} \quad \left(1 - \frac{W_2}{W_1}\right) \times \left(\frac{W_7}{W_3}\right) \times 100 \dots\dots\dots(3)$$

END TRANSLATION