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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

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**Inspection of grain and oils - Determination of type purity
and their mixture**

粮油检验 类型及互混检验

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Inspection of grain and oils - Determination of type purity and their mixture

1 Scope

This Standard specifies the reagents, instruments and utensils, lighting requirements, operating procedures and result calculations for grain and oil varieties and their mixture.

This Standard applies to the determination of mixture of grains and oils of the same type and different grain forms, grain natures, and grain colors, as well as the inspection of mixture of different types of grain and oils.

2 Normative references

The terms in the following documents become the terms of this Standard by reference to this Standard. For dated references, all subsequent amendments (not including errata content) or revisions do not apply to this standard. However, parties to agreements that are based on this Standard are encouraged to study whether the latest versions of these documents can be used. For undated references, the latest edition applies to this Standard.

GB 1350, Paddy

GB 1351, Wheat

GB 1354, Milled rice

GB/T 5494, Inspection of grain and oils - Determination of foreign matter and unsound kernels of grain and oilseeds

GB/T 22505, Inspection of grain and oils - Sensory analysis environment - Lighting

3 Reagents

0.1% iodine-ethanol solution.

4 Instruments and utensils

4.1 Electronic balance: division value 0.01 g.

4.2 Experimental hulling machine.

6.3 Dyeing inspection of glutinous rice and non-glutinous rice

After the paddy is husked and whitened, make it into rice samples conforming to the national standard level 3 (GB 1354); take 200 whole grains out indiscriminately; wash with clean water; soak in 0.1% iodine-ethanol solution for about 1 min; then, wash with distilled water and observe the coloring of the rice grains. Glutinous rice grains are brownish red; non-glutinous rice grains are blue. Pick out the number of grains mixed with different types (n).

7 Result calculations

7.1 Calculation of mixing ratio of indica rice, japonica rice and glutinous rice

Calculate the mixing ratio of indica rice, japonica rice and glutinous rice according to Formula (1):

$$X = \frac{m_1}{m_a} \times 100 \quad \dots\dots\dots (1)$$

Where:

X – mixing ratio, that is, the mass fraction of mixed paddy of different types in the total sample, %;

m_1 – the mass of paddy of different types, in grams (g);

m_a – sample mass, in grams (g).

Under repeatability conditions, the absolute difference of the two independent test results obtained is not more than 1%, and the average is the test result. Retain test results to integer digits.

7.2 Calculation of the ratio of different color kernel

Calculate the ratio of different color kernel according to Formula (2):

$$Y = \frac{m_2}{m_b} \times 100 \quad \dots\dots\dots (2)$$

Where:

Y – ratio of different color kernel, that is, the mass fraction of different color kernel in the total sample, %;

m_2 – mass of different color kernel, in grams (g);

m_b – sample mass, in grams (g).

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