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**Inspection of grain and oils - Method for sensory  
evaluation of paddy or rice cooking and eating quality**

粮油检验 稻谷、大米蒸煮食用品质 感官评价方法

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# Inspection of grain and oils - Method for sensory evaluation of paddy or rice cooking and eating quality

## 1 Scope

This Standard specifies the terms and definitions, principles, instruments and appliances, operation steps, tasting evaluation contents, sequence, requirements and scoring results of rice quality of paddy or rice cooking and eating test.

This Standard applies to the cooking test of paddy or rice and the evaluation of rice eating quality.

## 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 1354, Milled rice

GB 5491, Inspection of grain and oilseeds - Methods for sampling and sample reduction

GB/T 10220, Sensory analysis - Methodology - General guidance

GB/T 13868, Sensory analysis - General guidance for the design of test rooms

## 3 Terms and definitions

The following terms and definitions are applicable to this Standard.

### 3.1 Sensory evaluation of rice eating quality

The process, after the rice is cooked into rice under specified conditions, that the assessor perform a comprehensive tasting evaluation of the color, odour,

**5.11** Round white porcelain dinner plate: the diameter is about 20 cm; the edge of the plate is equally glued with plastic adhesive tapes in four colors of red, yellow, blue and green.

## **6 Operation steps**

### **6.1 Sample preparation**

#### **6.1.1 Sampling**

Perform according to BG 5491.

#### **6.1.2 Preparation of rice samples**

Take 1 500 g ~ 2 000 g of rice; use the hulling machine (5.1) for hulling to obtain brown rice; prepare the brown rice on the rice mill (5.2) into the standard third-class precision rice that is specified in GB 1354. For commercial rice, directly take samples.

#### **6.1.3 Number and registration of samples**

Randomly arrange the sample number, the box number (5.6) and pot number (5.4 or 5.7) of the prepared rice. Record the necessary information such as the type, place of origin, harvest or production time, storage and processing methods and time of the sample.

#### **6.1.4 Selection of reference samples**

##### **6.1.4.1 Paddy reference sample**

Select 3 ~ 5 samples whose paddy fatty acid value (calculated by KOH) is not greater than 20 mg/100g (dry basis); after sample preparation and rice production, the assessor shall conduct 2 ~ 3 tastings in accordance with the provisions of 8.3.1, to select one sample of normal color, aroma and odour, whose comprehensive score is about 75 points, as the reference sample for each evaluation.

##### **6.1.4.2 Rice reference sample**

Select 3 ~ 5 fresh rice samples that meet the standard third-class precision that is specified in GB 1354. Through rice production, the assessor shall conduct 2 ~ 3 tastings in accordance with 8.3.1, to select one sample of normal color, aroma and odor, whose comprehensive score is about 75 points, as the reference sample for each evaluation.

### **6.2 Preparation of rice**

## 6.2.1 Preparation of small sample rice

**6.2.1.1 Weighing:** weigh each 10 g of sample in a steam rice dish (5.6). The number of samples is prepared as 1 for each assessor.

**6.2.1.2 Rice washing:** pour the weighed sample into the drain sieve (5.9); place the drain sieve in the pot (5.8); quickly add 300 mL of water; stir clockwise 10 times; stir counterclockwise 10 times; quickly change the water and repeat the above operation once. Use 200 mL of distilled water to rinse again; drain the remaining water; put it in a steam rice dish. Control the rice washing time within 3 min ~ 5 min.

**6.2.1.3 Water soaking:** the amount of distilled water that is added to milled long-grain nonglutinous rice is 1.6 times the sample amount; the amount of distilled water that is added to milled medium to short-grain nonglutinous rice is 1.3 times the sample amount. The water addition can be appropriately increased or decreased according to the hardness of the rice. The soaking water temperature is about 25 °C; soak for 30 min.

**6.2.1.4 Steaming:** add an appropriate amount of water to the steamer (5.4); use an electric stove (or induction cooker) (5.5) to heat it to boiling; remove the lid; then, cover the steam rice dish that contains the sample and place it on the steamer; cover the pot; continue to heat and start timing; steam for 40 minutes; stop heating; simmer for 20 minutes.

**6.2.1.5** Put the prepared steam rice dishes of different samples on the white porcelain plate (5.11) (1 plate per person), 4 samples per plate; taste while it is hot.

## 6.2.2 Preparation of large sample rice

**6.2.2.1 Rice washing:** weigh 500 g of sample into the drain sieve (5.9); place the drain sieve in the pot (5.8); quickly add 1 500 mL of tap water; every time, stir clockwise 10 times, and counterclockwise 10 times; quickly change the water and repeat the above operation once. Use 1 500 mL of distilled water to rinse again; drain the remaining water; pour it into the directly-heated rice cooker of corresponding number (5.7). Control the rice washing time within 3 min ~ 5 min.

**6.2.2.2 Water soaking:** the amount of distilled water that is added to milled long-grain nonglutinous rice is 1.6 times the sample amount; the amount of distilled water that is added to milled medium to short-grain nonglutinous rice is 1.3 times the sample amount. The water addition can be appropriately increased or decreased according to the hardness of the rice. The soaking water temperature is about 25 °C; soak for 30 min.

Code all samples into numbers No.1, No.2, No.3, No.4; the reference sample number is No.1, and other samples are randomly numbered. Assessors of the same group adopt the same arrangement order; different groups try to achieve the same number of evaluation samples and the same arrangement order.

## **8 Sample evaluation**

### **8.1 Evaluation content**

Evaluate the rice's odour, exterior structure, palatability (including viscosity, elasticity, hardness), taste and cold rice texture.

### **8.2 Evaluation order and requirements**

#### **8.2.1 Preparation before the evaluation**

The assessor shall use warm water to rinse the mouth before each evaluation, to remove the residue in the mouth.

#### **8.2.2 Distinguish the rice odour**

Place the rice under the nasal cavity while it is hot; breathe in appropriately and forcefully to distinguish the odour of the rice carefully.

#### **8.2.3 Observe the rice appearance**

Observe the color, luster and rice integrity of the rice surface.

#### **8.2.4 Distinguish the palatability of rice**

Use chopsticks to take a little rice and put it in the mouth; chew it for 3 s ~ 5 s. While chewing, use the teeth, tongue and other sensory organs to carefully taste the viscosity, hardness, elasticity, and taste of the rice.

#### **8.2.5 Cold rice texture**

After the rice is left at room temperature for 1 hour, taste to judge the viscoelasticity, bonding and hardness of the rice.

### **8.3 Score**

#### **8.3.1 Scoring method I**

**8.3.1.1** According to the odour, exterior structure, palatability, taste and cold rice texture of the rice, compare the reference sample (6.1.4) to score; the comprehensive score is the sum of the scores of each item. See Appendix B for the scoring rules and record table format.

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