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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 19557.35-2026

**Guidelines for the conduct of tests for distinctness, uniformity
and stability - Sunflower (*Helianthus annuus* L.)**

植物品种特异性、一致性和稳定性测试指南 向日葵

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Foreword

The following symbols apply to this document. MG. Group Measurement MS. Individual Measurement PQ. Pseudo-quality property QL. Quality Properties QN. quantitative traits VG. Group visual inspection *. Important traits required for the unification of variety descriptions by the International Union for the Protection of New Varieties of Plants (UPOV) are excluded unless limited by environmental conditions. The expression status of these traits cannot be tested; all UPOV members need to use these traits. _ . Special

Note. Scope of Application for Test Traits

5 Requirements for breeding materials

- 5.1 Propagation material is provided in the form of seeds.
- 5.2 The number of seeds submitted shall not be less than 5,000.If it is a hybrid, 2,000 seeds of each parent material shall also be provided if necessary. For sterile lines,.2000 seeds of their maintainer line material should be provided if necessary.
- 5.3 Submitted seeds must be healthy in appearance, highly vigorous, and free from pests and diseases. Seed quality must meet the following requirements. purity $\geq 98.0\%$, germination rate $\geq 90\%$, and content... Water volume $\leq 9.0\%$.
- 5.4 Submitted seeds generally should not undergo any treatments that affect the normal expression of varietal traits (such as seed coating). If treatment has been performed, it must be submitted separately. Detailed instructions for processing.
- 5.5 The seeds submitted must comply with the relevant regulations of China's plant quarantine.

6 Testing Methods

6.1 Test Cycle It typically consists of two independent growth cycles.

6.2 Test Location Testing is typically conducted at one location. If certain traits are not normally expressed at that location, it is advisable to conduct them at other suitable locations. Conduct the test.

6.3 Field Trials

6.3.1 Experimental Design Planting should be done using locally suitable spacing, either by direct seeding or transplanting seedlings, with one seedling per hole and at least 40 seedlings per plot, in two separate areas. repeat. When necessary, the variety to be tested and similar varieties should be planted adjacent to each other.

6.3.2 Field Management The production management should be carried out in accordance with local practices. Field management in each plot should be strictly consistent, and the same management measures should be completed on the same day.

6.4 Trait Observation

6.4.1 Observation Period Trait observations should be conducted according to the reproductive stages listed in Tables A.1 and A.2 of Appendix A. Descriptions of reproductive stages should conform to Appendix B. Table B.1 in the table.

6.4.2 Observation Methods Trait observations should be conducted according to the observation methods (MG, MS, VG) specified in Tables A.1 and A.2. Some trait observation methods should conform to... B.2 and B.3.

6.4.3 Number of observations Unless otherwise specified, for individual observed traits (MS), at least 20 plants should be sampled per plot, from the organs or parts of the plant being observed. At that time, one sample was taken from each plant. Population observation traits (MG, VG) require observation of the entire plot or a population of a specified size.

6.5 Additional Tests If necessary, additional tests should be performed according to the properties in Table A.2 or properties not listed in this document.

7 Determination of specificity, consistency, and stability of results

7.1 General Principles The determination of specificity, consistency and stability shall be carried out in accordance with the principles defined in GB/T 19557.1.

7.2 Determination of Specificity The variety to be tested must be clearly distinguishable from known varieties. During testing, the variety to be tested must be similar to the most closely related variety in at least one trait. When there are obvious and reproducible differences, the variety being tested is deemed to have specificity.

7.3 Consistency Determination For sterile lines, maintainer lines, and restorer lines, a population standard of 2% and an acceptance probability of at least 95% are used, with a sample size of 19 plants. When the sample size is 41 plants, a maximum of 2 heteromorphic plants are allowed; when the sample size is 70 to 99 plants, a maximum of 4 heteromorphic plants are allowed. For single-cross varieties, using a population standard of 5% and an acceptance probability of at least 95%, when the sample size is 29 to 40 plants, a maximum of [number missing] are allowed. Four heteromorphic strains are allowed; when the sample size is 68 to 81 strains, a maximum of seven heteromorphic strains are allowed. For three-cross hybrids and open-pollinating varieties, the variation within the variety should not exceed that of known varieties of the same type.

7.4 Stability Determination If a variety exhibits consistency, it is considered to have stability, and stability testing is generally not performed. When necessary, restorer lines, maintainer lines, and open-pollinating varieties should be planted with the next generation of the variety or another batch of seeds, along with previously provided propagation. If there is no significant change in trait expression when comparing materials, the variety is considered to be stable. In addition to directly testing the hybrids and sterile lines themselves, it is also advisable to determine the stability of their parents by identifying their parental lines. The determination is made using methods of consistency and stability.

8 Characteristic Table

8.1 Overview Based on testing requirements, traits are divided into basic traits and optional traits. Basic traits are those required for testing, while optional traits are those used in the experiment. Traits that can be selected when conducting additional tests. Table A.1 lists the basic traits of sunflower, and Table A.2 lists the optional traits of sunflower. The table lists the trait name, expression type, expression status, corresponding code, standard variety, observation period, and method.

8.2 Expression Types Based on the way traits are expressed, traits are classified into three types. qualitative traits, pseudo-qualitative traits, and quantitative traits.

8.3 Expressing Status and Corresponding Code Each trait is divided into a series of expression states to facilitate the definition of the trait and the specification of its description; each expression state is assigned a corresponding number. Codes are used to facilitate the recording, processing, and establishment and exchange of variety descriptions.

8.4 Standard Varieties The trait table lists standard varieties for reference regarding the expression status of some traits, to help determine the different expression statuses of related traits. Correct for differences caused by environmental factors.

9. Grouping traits The varietal grouping traits are as follows:

a) *Leaf. Degree of vesicle formation (Table A.1 Neutral trait 13);

- b) *Initiation of flowering (Table A.1, 15th trait);
- c) Inflorescence. Type (Table A.1 Neutral traits 16);
- d) *Lyri flowers. Main color (Table A.1 Neutral trait 20);
- e) *Tubular florets. pollen (Table A.1 Neutral trait 29);
- f) *Plant height (Table A.1 Neutral trait 33);
- g) *Plant. Branching (Table A.1 Neutral trait 34);
- h) *Achenes. Color (Table A.1 Neutral trait 43);
- i) *Achenes. stripes between the margins (Table A.1 Neutral trait 48).