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Traditional Chinese medicine — *Schisandra chinensis* (Turcz.) Baill. seeds and seedlings

Médecine traditionnelle chinoise — Graines et plants de Schisandra chinensis (Turcz.) baill.

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Foreword

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This document was prepared by ISO/TC 249, *Traditional Chinese medicine*.

Traditional Chinese medicine — *Schisandra chinensis* (Turcz.) Baill. seeds and seedlings

1 Scope

This document specifies minimum requirements and test methods for *Schisandra chinensis* (Turcz.) Baill. seeds and seedlings.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

International Seed Testing Association (ISTA):2016, *International Rules for Seed Testing*

International Seed Testing Association (ISTA), *Working Sheets on Tetrazolium Testing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
lot
specified quantity of seeds or seedlings that are physically and uniquely identifiable

3.2
primary sample
portion taken from the *lot* (3.1) during one single sampling action

3.3
composite sample
formed by combining and mixing all the *primary samples* (3.2) taken from the *lot* (3.1)

3.4
test sample
portion of the *composite sample* (3.3) to which one of the test required in this document is applied

Note 1 to entry: The *test samples* (3.4) may be packed in different materials meeting conditions for specific tests [e.g. moisture or *purity* (3.6)].

3.5
sealed
condition whereby a container which contains seeds is closed in such a way that it cannot be opened to get access to the seed and be closed again without either destroying the seal or leaving evidence of tampering

Note 1 to entry: This definition refers to the sealing of seed lots, as well as of seed samples.

3.6
purity
weight of pure seed fraction over the total weight of the *test sample* (3.4) in per cent

Note 1 to entry: The pure seed refers to the species stated by the applicant, or found to predominate in the test, and includes all botanical varieties and cultivars of that species.

3.7
1 000-seed weight
average weight of every 1 000 pure seeds of a *test sample* (3.4)

3.8
seed width
largest distance from the side of raphe to its opposite, in millimetre

Note 1 to entry: See Figure 1.

3.9
viability
index to show the potential ability of seed to germinate, or the capability of embryo to live

Note 1 to entry: It is expressed as the percentage of stained seeds in the *test sample* (3.4).

Note 2 to entry: It is estimated by the method of Topographical Tetrazolium Test.

3.10
stratification rate
percentage of stratified seed, determined by number, in the *test sample* (3.4)

Note 1 to entry: Stratified seed is the seed with embryos fully grown, endosperm volume expanded, seed coat longitudinally fissured through the raphe by after-ripening treatment (see Figure 1).

3.11
stem diameter
boundary of aboveground and belowground of the seedling

Note 1 to entry: See Figure 2.

3.12
height of stem
length of the stem from the root to the top hibernaculum

Note 1 to entry: See Figure 2.

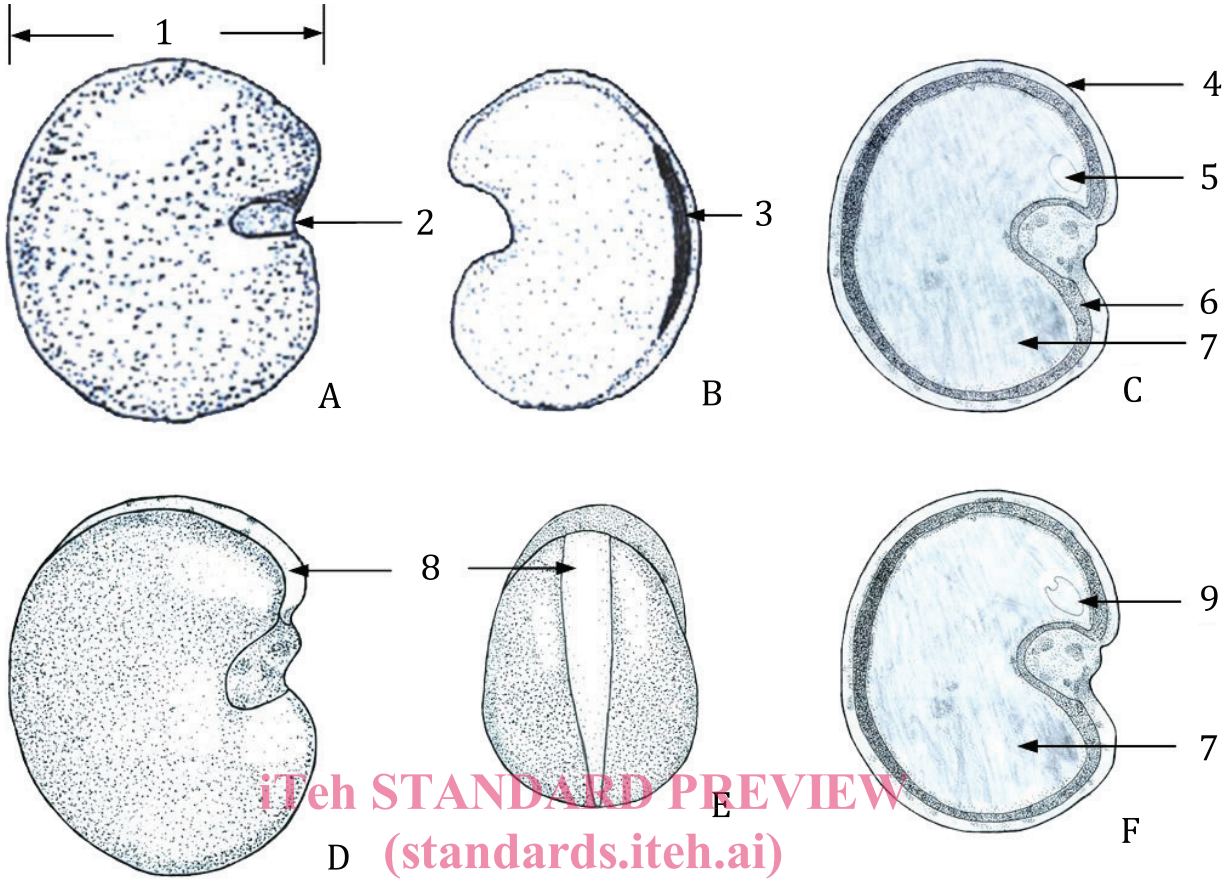
3.13
seedling weight
average weight of a single seedling

4 Description

4.1 *Schisandra chinensis* seeds

In this document, *Schisandra chinensis* seed is the dehydrated seed of *Schisandra chinensis* (Turcz.) Baill. consisting of three basic parts: embryo, endosperm and seed coat, as shown in Figure 1.

NOTE Annex A provides information on how to identify a *Schisandra chinensis* seed.



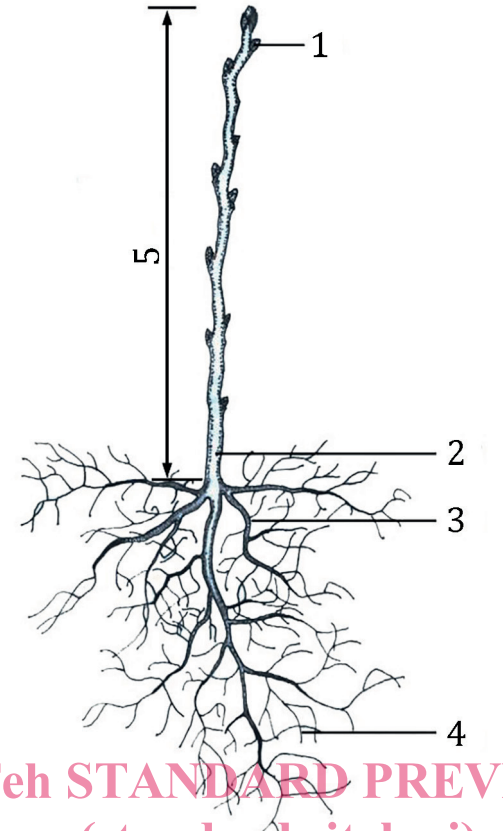
Key

1 seed width
2 hilum
3 raphe
4 seed coat
5 embryo
6 cavity of seed
7 endosperm
8 fissure of a stratified seed
9 embryo of a stratified seed
A seed
B kernel, without seed coat
C cross-section, longitudinally cut through the raphe
D front view of a stratified seed
E dorsal view of a stratified seed, shows the fissure
F section of the kernel of a stratified seed

Figure 1 — Structure of *Schisandra chinensis* seed

4.2 *Schisandra chinensis* seedlings

Schisandra chinensis seedlings consist of four parts: hibernaculum, stem, lateral root and fibrous root, as shown in Figure 2.



Key

1 hibernaculum
2 stem diameter
3 lateral root
4 fibrous root
5 height of stem

Figure 2 — Structure of *Schisandra chinensis* 1-year-old seedling

5 Requirements

5.1 General characteristics

The following requirements shall be achieved before separating the composite sample into test samples.

a) *Schisandra chinensis* seed shall be clean and free from foreign odours, with smooth surface and kidney shaped.

b) *Schisandra chinensis* seedling shall be healthy and intact.

c) Quarantine fungus (*Fusarium* spp. and *Alternaria* spp.) and nematodes shall not be detected.

5.2 *Schisandra chinensis* seed

5.2.1 The moisture content shall not be greater than 14 %.

5.2.2 Seed purity shall not be less than 95 %.

5.2.3 Viability shall not be less than 80 %.

5.2.4 The seed width, 1 000-seed weight and stratification rate shall comply with the requirements in Table 1.

Table 1 — Grading standards of *Schisandra chinensis* seed

Grade	Seed width mm	1 000-seed weight g	Stratification rate %
First	≥4,0	≥26,0	≥55,0
Second	3,6 to <4,0	20,0 to <26,0	30,0 to <55,0
Unqualified	<3,6	<20,0	<30,0
For the First grade, the seeds, of which the seed width is not less than 4,0 mm, shall not be less than 95 %. Otherwise, it shall be judged to be the Second grade. For the Second grade, the seeds, of which the seed width is not less than 3,6 mm, shall not be less than 95 %. Otherwise, it shall be judged to be the Unqualified grade. NOTE The establishment of the above requirements is based on the seeds collected from different regions.			

5.3 *Schisandra chinensis* seedling

5.3.1 Lateral root and fibrous root shall be intact.

5.3.2 Hibernaculum of *Schisandra chinensis* seedling shall be intact.

5.3.3 Stem diameter, height of stem, seedling weight and number of lateral roots shall comply with the requirements in Table 2.

Table 2 — Grading standards of 1-year-old *Schisandra chinensis* seedling

Grade	Stem diameter cm	Height of stem cm	Seedling weight g	Number of lateral roots
First	≥0,45	≥20,0	≥9,0	≥5,0
Second	0,30 to <0,45	15,0 to <20,0	4,0 to <9,0	3,0 to <5,0
Unqualified	<0,30	<15,0	<4,0	<3,0
For the First grade, the seedlings, of which the stem diameter is not less than 0,45 cm, shall not be less than 95 %. Otherwise, it shall be judged to be the Second grade. For the Second grade, the seedlings, of which the stem diameter is not less than 0,30 cm, shall not be less than 95 %. Otherwise, it shall be judged to be the Unqualified grade. NOTE The establishment of the above requirements is based on the seedlings collected from different regions.				

6 Sampling

6.1 Seed sampling

Sampling shall be carried out in accordance with ISTA, *International Rules for Seed Testing*:2016, Chapter 2. Maximum weight of lot and minimum weight of sample are specified in Table 3.