INTERNATIONAL STANDARD

ISO 17217-1

First edition
2014-04-15

Traditional Chinese medicine — Ginseng seeds and seedlings —

Part 1: *Panax ginseng* C.A. Meyer

Médecine traditionnelle chinoise — Graines de ginseng et semis —

Partie 1: Panax ginseng *C.A. Meyer*

Reference number
ISO 17217-1:2014(E)

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Published in Switzerland

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Foreword

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 249, *Traditional Chinese medicine*.

ISO 17217 consists of the following parts, under the general title *Traditional Chinese medicine — Ginseng seeds and seedlings*:

— *Part 1:* Panax ginseng *C.A. Meyer*

Traditional Chinese medicine — Ginseng seeds and seedlings —

Part 1: *Panax ginseng* C.A. Meyer

1 Scope

This part of ISO 17217 specifies minimum requirements and test methods for ginseng seeds and seedlings, *Panax ginseng* C.A. Meyer. It is suitable for marketing of cultivated ginseng seeds and seedlings, *P. ginseng* C.A. Meyer. It is also suitable for quality assurance for ginseng cultivators.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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), *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.

3.1
seed lot
specified quantity of seed that is physically and uniquely identifiable

[SOURCE: ISTA, International Rules for Seed Testing, definition 2.2.1]

3.2
primary sample
portion taken from the seed lot during one single sampling action

[SOURCE: ISTA, International Rules for Seed Testing, definition 2.2.2]

3.3
composite sample
formed by combining and mixing all the primary samples taken from the seed lot

[SOURCE: ISTA, International Rules for Seed Testing, definition 2.2.3]

3.4
subsample
portion of primary a sample obtained by reducing a sample

[SOURCE: ISTA, International Rules for Seed Testing, definition 2.2.4]

3.5
submitted sample
sample to be submitted to the testing laboratory that comprises either the whole of the composite sample or a subsample

Note 1 to entry: The submitted sample can be divided into subsamples, packed in different materials meeting conditions, for specific tests (e.g. moisture or health).

[SOURCE: ISTA, International Rules for Seed Testing, definition 2.2.5]

3.6
working sample
entire submitted sample or subsample to which one of the quality tests described in the ISTA Rules is applied and which has at least the weight prescribed by the ISTA Rules for the particular test

[SOURCE: ISTA, International Rules for Seed Testing, definition 2.2.7]

3.7
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.

[SOURCE: ISTA, International Rules for Seed Testing, definition 2.2.8]

3.8
purity
weight percentage of pure seed fraction over the total weight of the working sample, in percent

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.

[SOURCE: ISTA, International Rules for Seed Testing, definition 3.2.1]

3.9
seed width
largest distance(see Figure 1) from the side of raphe to its opposite, in millimetre

3.10
plump seed
seeds with a kernel to cavity ratio of not less than 3:4

Note 1 to entry: The plumpness of a single seed in this standard is estimated with its area ratio of the kernel to the cavity in the cross section when the seed is cut longitudinally through the raphe (see Figure 1).

3.11
plumpness
index to show the development of kernels of seeds in a seed lot

Note 1 to entry: It is expressed as the percentage of the plump seeds, determined by number, in the working sample.

3.12
mature seed
<dehydrated seed> seed with an embryo that is pyriform or saddle in the shape

3.13
maturity
<dehydrated seed> percentage of mature seed, determined by number, in the working sample

3.14
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 working sample.

Note 2 to entry: It is estimated using the Topographical Tetrazolium Test.

3.15
100-seed weight
average weight of every 100 pure seeds of a working sample

3.16
seedling
young ginseng with hibernaculum, rhizome and root system and without aboveground stem and leaf

Note 1 to entry: Ginseng seedling is harvested in mid to late autumn or early spring when transplanting.

3.17
hibernaculum
hibernated bud with bud scales

3.18
rhizome
underground stem of ginseng seedling

3.19
seedling weight
average weight of single seedling

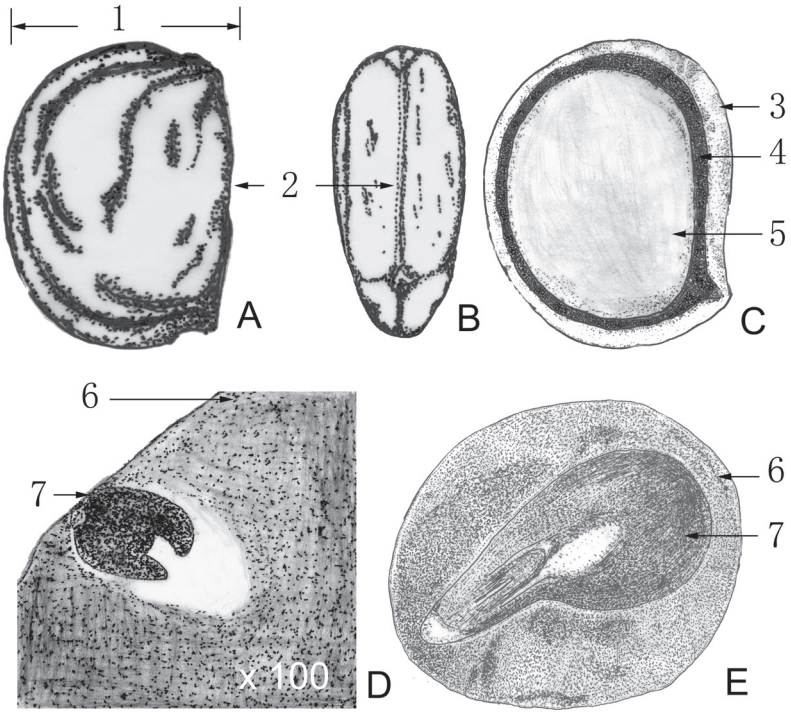
3.20
root length

total length of the root in cm, the distance from the shoulder of the taproot to the tip of the root

3.21
taproot length
the length of the taproot in cm, the distance from the shoulder of the taproot to the first lateral root

4 Descriptions

In this part of ISO 17217, ginseng seed is the dehydrated seed of plant *P. ginseng* C.A. Mayer and consists of three basic parts: embryo, endosperm and the seed coat, as shown in Figure 1.

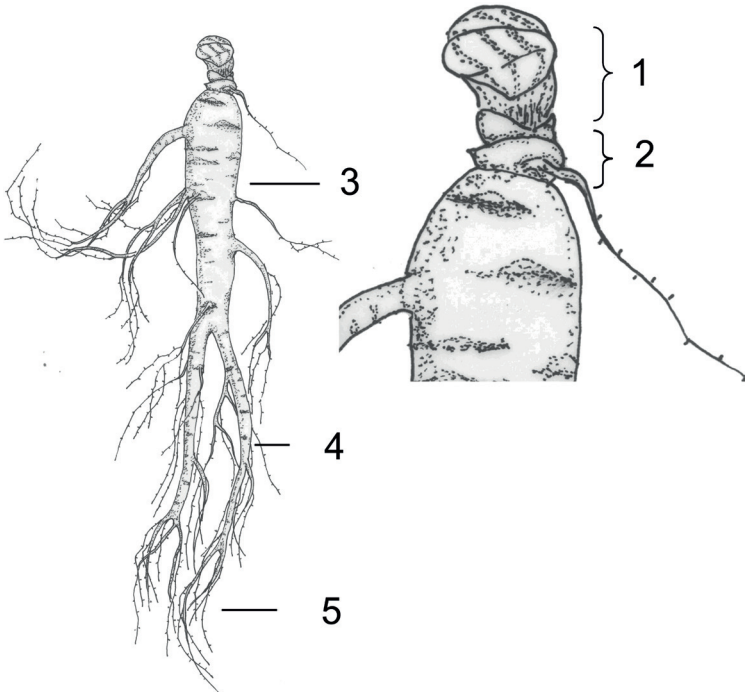


Key

A front view
B dorsal view
C cross section, longitudinally cut through the raphe
D slice of the kernel, shows the embryo
E section of the kernel of a stratified seed
1 seed width
2 raphe
3 seed coat
4 cavity of seed
5 kernel
6 endosperm
7 embryo

Figure 1 — Structure of ginseng seed

For practical application, seedlings are classified into three groups on the basis of their age: one-year-old seedlings, two-year-old seedlings and three-year-old seedlings. Ginseng seedlings consist of five parts: hibernaculum, rhizome, taproot, lateral root and fibrous root, as shown in Figure 2.



Key

1 hibernaculum
2 rhizome
3 taproot
4 lateral root
5 fibrous root

Figure 2 — Ginseng seedling

5 Requirements

5.1 General characteristics

The following requirements should be met before separating the bulk sample into test samples.

a) Ginseng seed shall be clean and free from foreign matter.

b) Ginseng seedling shall be healthy and intact.

c) The presence of living insects, moldy seed and external contaminants which are visible to the naked eye shall not be permitted.

5.2 Ginseng seed

5.2.1 The mass fraction of moisture shall not be greater than 10 %.

5.2.2 Seed purity shall not be less than 99 %.

5.2.3 Viability shall not be less than 95 %.

5.2.4 Maturity shall not be less than 95 %.

5.2.5 Both *Fusarium* spp. and *Alternaria* spp. shall not be detected.