INTERNATIONAL STANDARD

ISO 20311

First edition
2017-03

Traditional Chinese medicine — *Salvia miltiorrhiza* seeds and seedlings

Médecine traditionnelle chinoise — Graines et plants de Salvia miltiorrhiza

Reference number
ISO 20311:2017(E)

© ISO 2017



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 Descriptions ... **3**

5 Requirements ... **5**
5.1 General characteristics ... 5
5.2 ***Salvia miltiorrhiza*** seeds ... 5
5.3 Seedlings ... 6

6 Sampling ... **6**
6.1 Seed sampling ... 6
6.2 Seedling sampling ... 6

7 Test method ... **7**
7.1 Moisture ... 7
7.2 Maturity ... 7
7.3 Purity ... 7
7.4 Seed viability ... 7
7.5 1 000-seed weight ... 7
7.6 Germination percentage ... 7
7.7 Fungus testing ... 7
7.7.1 Preparation of seed ... 7
7.7.2 Preparation of seedling ... 8
7.7.3 Test of ***Alternaria*** spp. ... 8
7.7.4 Test of ***Fusarium*** spp. ... 8
7.8 Nematode testing ... 8
7.9 Seedling diameter ... 8
7.10 Seedling length ... 8

8 Test report ... **8**

9 Packaging, storage and transportation ... **8**

10 Marking ... **9**

Bibliography ... **10**

© ISO 2017 – All rights reserved

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

© ISO 2017 – All rights reserved

Traditional Chinese medicine — *Salvia miltiorrhiza* seeds and seedlings

1 Scope

This document specifies the minimum requirements and test method for *Salvia miltiorrhiza* seeds and seedlings. It is suitable for use in quality assurance during the production and management of *Salvia miltiorrhiza* 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), *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
seed lot
specified quantity of *seed* (3.7) that is physically and uniquely identifiable

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

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

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

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

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

3.4
subsample
portion of a *primary sample* (3.2) obtained by reducing a sample

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

© ISO 2017 – All rights reserved

3.5
submitted sample
sample that is to be submitted to the testing laboratory and may comprise either the whole of the *composite sample* (3.3) or a *subsample* (3.4)

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

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

3.6
working sample
whole of the *submitted sample* (3.5) or a *subsample* (3.4), to which one of the quality tests described in the ISTA Rules is applied

Note 1 to entry: The working sample is at least the weight prescribed by the ISTA Rules for the particular test.

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

3.7
seed
mature ovule produced by *Salvia miltiorrhiza* Bunge

Note 1 to entry: It consists of three basic parts: embryo, endosperm and the seed coat.

3.8
seedling
young plant of *Salvia miltiorrhiza* Bunge after cultivation for one year, consisting of bud, *tap root* (3.14), lateral root and fibrous root

3.9
purity
weight percentage of pure *seed* (3.7) fraction over the total weight of the *working sample* (3.6)

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.

Note 2 to entry: It is expressed in per cent (%).

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

3.10
viability
potential ability of a *seed* (3.7) to germinate or the capability of an embryo to live

Note 1 to entry: It is the percentage of stained seeds in the *working sample* (3.6), estimated using the Topographical Tetrazolium Test.

3.11
1 000-seed weight
average weight of every 1 000 pure *seeds* (3.7) of a *working sample* (3.6)

3.12
seed moisture content
loss of weight of *seed* (3.7) after drying over the weight of seed before drying

3.13
germination percentage
percentage of germinated *seed* (3.7) over the *working sample* (3.6)

3.14
tap root
root generated from the one year development of the radical after *seed* (3.7) germination

© ISO 2017 – All rights reserved

3.15
seedling length
largest distance from the lower part to the top

Note 1 to entry: It is expressed in centimetres.

4 Descriptions

Salvia miltiorrhiza seed is the dried seed of the plant *Salvia miltiorrhiza* Bunge and consists of three basic parts: the embryo, cytoledon and the pericarp (see Figure 1 C). The epidermal mucilage layer swells to a transparent mucilage membrane surrounding the seed after soaking the seed with warm water (Figure 1 D).

© ISO 2017 – All rights reserved