

Preface to the 2021 Edition of the ISTA Rules

Since 2014, the *International Rules for Seed Testing* (ISTA Rules) are primarily available in electronic format only. The ISTA Rules can be downloaded as a complete PDF file or as individual chapters from:

<http://www.ingentaconnect.com/content/ista/rules>.

If required, users of the ISTA Rules can print their own copies. For further information on the ISTA Rules, see:

<http://www.seedtest.org/rules>.

The electronic version includes the English, French, German and Spanish versions of the ISTA Rules. If there are any questions on interpretation of the ISTA Rules, the English version is the definitive version.

Seed health testing methods

Previously, the seed health testing methods were published as a separate Annex to Chapter 7 of the ISTA Rules. They are now available as separate method sheets from the ISTA web site at:

<http://www.seedtest.org/seedhealthmethods>.

Details of changes

The 2021 changes are editorial corrections or Rules changes adopted at the online Ordinary General Meeting held in June 2020. Edits were made in Adobe InDesign by Vanessa Sutcliffe of HeartWood Editorial (www.heartwoodeditorial.co.uk).

The changes in the text content from the previous edition of the ISTA Rules are listed below. They can be displayed with yellow highlight boxes as a 'layer' over the English version within the electronic copy, with comments on what has changed.

For the previous history of amendments to the ISTA Rules, see the Prefaces for 2003 to 2020 on the ISTA website.

Ernest Allen, ISTA Rules Committee Chair

Susan Alvarez, ISTA Rules Committee Vice-Chair

ISTA Secretariat

Changes to the ISTA Rules for 2021

Introduction

I-1: Health and Safety statement added. Statement reviewed and approved by ECOM and Rules Committee.

Chapter 1

1.5.2.2: Result of changes approved in Chapter 2 during OGM16.

1.5.2.2: Clarification that authorities are not required for reporting.

1.5.2.6: Result of proposal submitted to Germination Committee by ISTA Accreditation Department. Clarity in section 5.9 that only percentage germination is reported when germination test is terminated due to predetermined germination level.

1.5.2.17.2, 1.5.2.17.3 and 1.5.2.17.4: Reference for 5.8.2 replaces the current erroneous reference of 5.8.1.

1.5.2.21, 1.5.2.21.2 and 1.5.2.21.3: Result of changes approved in Chapter 19 during OGM18.

Chapter 2

2.8: Result of nomenclature changes to the *ISTA List of Stabilised Plant Names* that have been incorporated into Table 2C. Previous cross references were not removed prior to the printing of the 2020 Rules. Previous cross references will be removed in the 2021 Rules and the last sentence of the current version will be replaced.

Table 2C Part 1: Result of approved nomenclature changes to the *ISTA List of Stabilised Plant Names*.

Chapter 3

3.7: Result of changes approved in Chapter 2 during OGM16.

3.7: Clarification that authorities are not required for reporting.

Table 3A: Deletion of *Poa pratensis* varieties that are no longer being traded. Proposal approved by majority vote in Purity Committee.

Chapter 4

4.2.1: Result of changes approved in Chapter 4 during OGM18.

4.2.2: ‘Orobanchaceae’ replaced with ‘dust-like seeds’ to harmonise with other changes related to such seeds. Addition of ‘indistinguishable species’ to distinguish those seeds that are costly to or not reliably retrieved

in the complete test quantity. Proposal approved by majority vote in Purity Committee.

4.2.4: ‘Orobanchaceae’ replaced with ‘dust-like seeds’ and ‘very expensive seed’ replaced with ‘small seed lots’ to harmonise with other changes related to such seeds. A reduced test is allowed in the Rules for similar species searches. Proposal approved by majority vote in Purity Committee.

Chapter 5

5.2.7.2: Result of validation study carried out in Germination Committee to change evaluation of roots for *Helianthus annuus*, allowing for secondary roots when the primary root is defective. Proposal approved by Germination Committee.

5.6.2.4 and 5.6.3.1: Clarity that LED lights can be used for germination. Proposal supported by Germination Committee.

5.9: Proposal submitted to Germination Committee by ISTA Accreditation Department. Clarity that only percentage germination is reported when germination test is terminated due to predetermined germination level.

Table 5A Part 1: Result of validation study conducted on *Brassica napus* to determine which temperature requirements for germination promoted higher normal seedling development and enhanced testing reproducibility among labs. Proposal supported by Germination Committee.

Chapter 7

Method 7-001a, -001b, -002a, -002b, -003 -005, -006, -008, -010, -011, -012, -013a, -013b, -014, -015 and -016: Increasing harmonisation for sample and subsample size throughout Seed Health Methods. Proposal approved and supported by Seed Health Committee.

Methods 7-001a, -001b, -002a, -002b, -007 and -009: Clarifying instructions for preparing hypochlorite solutions for pretreatment as prescribed in Methods.

Method 7-004, -007, -019a, -019b, -020, -021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031 and -032: Increasing harmonisation for sample size with other methods to detect fungi. Proposal approved and supported by Seed Health Committee.

Methods 7-005, -006, -008, -014, -016, -022 and -032: Clarifying instructions for preparing hypochlorite solutions for pretreatment as prescribed in Methods. Adding use of hypochlorite solutions for methods

similar to those already approved in Rules. Proposal supported by Seed Health Committee.

Method 7-007: Revision requested by Seed Health Committee to make description of *Alternaria linicola* more informative.

Method 7-019a, -019b and -020: Addition of safety considerations when using ethidium bromide. Proposal supported by Seed Health Committee.

Method 7-019a and -020: Clarity that alternative chemicals other than ethidium bromide may be used for this method. Proposal supported by Seed Health Committee.

Method 7-021, -030 and -031: Clarity that alternative chemicals other than ethidium bromide may be used for this method. Addition of safety considerations when using ethidium bromide. Proposal supported by Seed Health Committee.

Chapter 9

9.2.4.2, 9.2.5.4, 9.2.5.6, 9.3.1.4, 9.3.1.5.1, 9.3.1.5.2, 9.3.1.5.3, 9.3.1.5.4, 9.3.1.5.5, 9.3.2.4.3, 9.3.2.8 and 9.3.2.9: Review of Chapter 9 with recommendation that some wording changed to improve clarity on when a laboratory *must* perform an action and when it is suggested that the laboratory *should* perform the action (but would not be found in violation during an ISTA audit if they used a different but acceptable alternative process). Proposal approved by Moisture Committee.

9.2.4.3: Clarification of definition of appropriate containers for use in oven moisture testing. Review of Chapter 9 by Moisture Committee.

9.2.4.6 and 9.2.5.4: Use of singular 'mesh' instead of misleading 'meshes'. Proposal approved by Moisture Committee.

9.2.5.2: Section re-ordered and modified to improve clarity and to avoid confusion about differences in how many working samples are drawn depending on whether seeds are whole or ground.

Table 9A Part 2: Moisture method for *Carica papaya* included in table. Proposal made following validation studies carried out within Moisture Committee.

Chapter 15

15.8.2.8, 15.8.3.6 and 15.8.4.6: Reference for 5.8.2 replaces the current erroneous reference of 5.8.1.

Table 15B: Clarification of assessment of 2 mm radicle; consistency in description of germination media for radicle emergence test for *Zea mays* and *Triticum aestivum* subsp. *aestivum*; all Latin names expressed according to *ISTA List of Stabilised Plant Names*. Additional text clarifies measurement of 2mm in radicle emergence test for these species and specifies that assessments should be made by eye. All validation for radicle emergence has been done without magnification and has achieved repeatability and reproducibility. Proposal supported by Vigour Committee.