

Preface to the 2022 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:

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:

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:

www.seedtest.org/seedhealthmethods.

Details of changes

The 2022 changes are editorial corrections or Rules changes adopted at the online Ordinary General Meeting held in June 2021. 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 2021 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 2022

Chapter 1

- 1.5.2.2:** Removal of obsolete website information, as proposed by Purity TCOM.
- 1.5.2.4:** Addition of the *ISTA List of Stabilised Plant Names* as the primary source for reporting other seeds. Proposal developed by the Purity TCOM and approved by majority vote.

Chapter 2

- 2.2.12:** Proposal submitted by the Bulking and Sampling TCOM for clarification that additives used to treat or coat seed may contain more than one of the listed ingredients.
- 2.2.13:** Proposal submitted by the Bulking and Sampling TCOM for clarification that additives used to treat or coat seed may contain more than one of the listed ingredients.
- 2.5.2.1:** Correction of reference to 2.2.12 which defines treated seeds.
- 2.5.2.2.1:** Proposal submitted by the Bulking and Sampling TCOM. Changes requested to enable a more accurate description of the various types of dividers that may be used for sample reduction.
- 2.5.3:** Proposal submitted by the Bulking and Sampling TCOM following consultation with the Purity TCOM. Change requested to insert cross-reference to Chapters 3 and 4 for clarification on how the different fractions of working samples should be stored after testing.
- Table 2C Part 1:** Addition of *Chenopodium quinoa* proposed by the Germination TCOM, following an ISTA method validation study and with input from the Bulking and Sampling TCOM and the Purity TCOM.
- Table 2C Part 1:** Proposal submitted by the Bulking and Sampling TCOM following consultation with the Purity TCOM. ISTA accredited laboratories have requested that *Salvia hispanica* is moved to Table 2C Part 1, as it should be regarded as an agricultural crop. Consequently, the maximum seed lot size is adjusted to the maximum for small seeded agricultural species, i.e. 10 000 kg. From data supplied by the Purity TCOM in 2019, the average TSW is 0.13 g, therefore the minimum submitted sample size and other seed by number working sample are increased to 35 g so that

the sample would contain at least 25 000 seeds, and is consistent with other species in Table 2C Part 1 where the OSD is 10× the PUR.

Table 2C Part 1: Editorial change to correct wrongly labelled table section.

Table 2C Part 3: Proposal submitted by the Bulking and Sampling TCOM following consultation with the Purity TCOM. ISTA accredited laboratories have requested that *Salvia hispanica* is moved to Table 2C Part 1, as it should be regarded as an agricultural crop.

Chapter 3

- 3.2.1:** Rewording by Purity TCOM following an ISTA member's inquiry about use of the term 'ergot'. Proposal agreed by Seed Health TCOM and approved by majority vote.
- 3.5.2:** Improvement to text submitted by the Accreditation Working Group, related to proposal C.2.3 (Storage of the samples). Changes clarify the intent of 3.5.2 and harmonise it with wording in 4.5.2.
- 3.7:** Removal of obsolete website information, as proposed by Purity TCOM.
- Table 3B Part 1:** Editorial corrections of nomenclature changes approved in the 2019 *ISTA List of Stabilised Plant Names*. Removal from table of *Anagallis*, *Dorotheanthus*, *Osteospermum*, *Piptatherum* and *Stachys*.
- Table 3B Part 1:** Proposal developed by the Purity TCOM and the Rules TCOM. Editorial corrections of nomenclature changes approved in the 2019 *ISTA List of Stabilised Plant Names*.
- Table 3B Part 1:** Addition of *Chenopodium* proposed by the Germination TCOM, following an ISTA method validation study and with input from the Bulking and Sampling TCOM and the Purity TCOM.
- Table 3B Part 1:** Result of changes to the *ISTA List of Stabilised Plant Names* used in Table 2C for *Megathyrus maximus* and *Thinopyrum elongatum*.
- Table 3B Part 2:** Proposal developed by the Purity TCOM to assign a PSD to *Ornithopus sativus*, a species with comparable morphology to *O. compressus*.
- Table 3B Part 2:** Result of changes to the *ISTA List of Stabilised Plant Names* used in Table 2C for *Megathyrus maximus*.

Chapter 4

4.7: Addition of the *ISTA List of Stabilised Plant Names* as the primary source for reporting other seeds. Proposal developed by the Purity TCOM and approved by majority vote.

Chapter 5

5.2.8.1: Proposal supported by the Germination TCOM to add the seedling abnormality criterion 32/07 to *Allium* spp. regarding primary infection.

5.4.2, 5.4.3.4, 5.6.2.1, 5.6.2.2, 5.10: Consequential changes resulting from the addition of agar (A) as a primary media for *Pinus sylvestris* in Table 5A Part 2. Proposal supported by the Germination TCOM and the Forest Tree and Shrub Seed TCOM following a method validation study.

5.6.1: Request to change colon (:) symbol to a forward slash (/) to denote division in proportional calculations. Change supported by the Germination TCOM.

5.6.2.1.1: Proposal supported by the Germination TCOM to remove the word ‘upright’ regarding the top of paper (TP) method.

5.10: A method validation study has been conducted to determine the suitability of using crepe cellulose paper (CCP) as a primary media for the top of paper (TP) method. The purpose of this study was to harmonise the ISTA Rules with the *AOSA Rules for Testing Seeds*. Proposal supported by the Germination TCOM.

Table 5A Part 1: Addition of *Chenopodium quinoa* proposed by the Germination TCOM, following an ISTA method validation study and with input from the Bulking and Sampling TCOM and the Purity TCOM.

Table 5A Part 1: A method validation study has been conducted to determine the suitability of using crepe cellulose paper (CCP) as a primary media for the top of paper (TP) method for *Glycine max*. The purpose of this study was to harmonise the ISTA Rules with the *AOSA Rules for Testing Seeds*. Proposal supported by the Germination TCOM.

Table 5A Part 1: Proposal developed by the Purity TCOM and the Rules TCOM. Editorial corrections of nomenclature changes approved in the 2019 *ISTA List of Stabilised Plant Names*.

Table 5A Part 1: Proposal submitted by the Bulking and Sampling TCOM following consultation with the Purity TCOM. ISTA accredited laboratories have re-

quested that *Salvia hispanica* is moved to Table 5A Part 1, as it should be regarded as an agricultural crop.

Table 5A Part 1: Statement for use of CCP for TP method moved from ‘Additional advice’ column to ‘Additional directions’ for *Zea mays*. Proposal supported by the Germination TCOM and a method validation study.

Table 5A Part 2: A method validation study was conducted to determine the suitability of using agar as a primary media for *Pinus sylvestris*. Results showed good repeatability and reproducibility for temperatures of 20 °C and 20<=>30 °C in combination with top of paper (TP) and agar (A). Proposal supported by the Germination TCOM and the Forest Tree and Shrub Seed TCOM.

Table 5A Part 3: A new method validation study on *Eustoma exaltatum* carried out in 2019 has re-evaluated the germination temperature of 20 °C, given its importance to laboratories testing seed for cut flowers in Japan and the inclusion of this temperature in the *AOSA Rules for Testing Seeds*. The study showed that 20 °C produces results comparable to those resulting from the standard method using 20<=>30 °C. Proposal supported by the Flower Seed Testing TCOM and the Germination TCOM.

Table 5A Part 3: Proposal submitted by the Bulking and Sampling TCOM following consultation with the Purity TCOM. ISTA accredited laboratories have requested that *Salvia hispanica* is moved to Table 5A Part 1, as it should be regarded as an agricultural crop.

Chapter 7

Methods 7-005, 7-006, 7-014, 7-016 and 7-022: Changes to achieve harmony between pretreatment descriptions for several similar methods, supported by validation studies carried out by the Seed Health TCOM.

Methods 7-013a and 7-013b: Proposal approved and supported by the Seed Health TCOM to allow the optional use of methyl blue stain to aid visualisation of fungal hyphae. This option is based on a method validation study carried out by SASA for the Seed Health TCOM, coupled to a PT.

Method 7-019a: Correction of the temperature for DNA extraction indicated in the validation report.

Chapter 8

8.8.1: Editorial change to divide section into two sub-sections.

Chapter 9

9.2.7, 9.3.2.7: Cross-reference to 1.5.2.22 gives clear advice on how to report moisture results for species listed in Table 2C but not listed in Table 9A. Proposal developed and approved by a majority vote of the Moisture TCOM.

Chapter 18

18.8.1: Clarification on how to report purity content of seed mixtures. This proposal was approved for the 2020 edition of the ISTA Rules. The change, however, was placed in the wrong place within 18.8.1. This editorial change corrects the error.