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International Rules for Seed Testing 2026

Chapter 7: Seed health testing

Including changes and editorial corrections adopted at the Ordinary General Meeting 2025 in Christchurch, New Zealand

Effective from 1 January 2026

Note on the use of the translations

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

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Preface to the 2026 edition of the ISTA Rules

Since 2014, the *International Rules for Seed Testing* (ISTA Rules) are primarily available in electronic format. 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/en/publications/international-rules-seed-testing.html

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 Annexe to Chapter 7 of the ISTA Rules. They are now available as separate method sheets from the ISTA website at:

www.seedtest.org/en/international-rules-for-seed-testing-rubric-3.html

Details of changes

The 2026 changes are editorial corrections or Rules changes adopted at the Ordinary General Meeting held in Christchurch, New Zealand in May 2025. Edits were made in Adobe InDesign by Vanessa Sutcliffe of Heart-Wood 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.

Jodi Keeling, ISTA Rules Committee Chair

Janek Bartel, ISTA Rules Committee Vice-Chair

ISTA Secretariat

Changes to the ISTA Rules for 2026

Chapter 1

1.3: Consequential change due to revision of sublot allowance for *Solanum lycopersicum* and other fleshy vegetable species. New species added to 20 sublot option; maximum seed lot size for 20 sublots restricted to 1000 kg. Proposal developed in consultation with Bulking & Sampling and Purity TCOMs and supported by new experimental data from testing of seed lots and species, with summary report and analysis supplied by Statistics TCOM. Approved by Statistics TCOM and majority vote of Bulking & Sampling TCOM and ECOM–Vegetable Seed Industry working group.

1.5.2.8: Consequential change due to change in minimum number of seeds required for tetrazolium test, taking account of species with large seeds and species for which it is challenging to obtain 400 seeds. New tolerance tables developed for new testing schemes by Statistics TCOM.

1.5.2.18: Consequential change due to complete revision of Chapter 16.

1.5.2.21.2, 1.5.2.21.3: Consequential change due to updates in Chapter 19, clarifying conditions under which GMO test results can refer to either seed lot or seed sample, and therefore are reported on either Orange or Blue International Certificates. Proposal discussed and finally approved by majority vote of GMO TCOM.

Chapter 2

2.2.2: Revision of sublot allowance for *Solanum lycopersicum* and other fleshy vegetable species. New species added to 20 sublot option; maximum seed lot size for 20 sublots restricted to 1000 kg. Proposal developed in consultation with Bulking & Sampling and Purity TCOMs and supported by new experimental data from testing of seed lots and species, with summary report and analysis supplied by Statistics TCOM. Approved by Statistics TCOM and majority vote of Bulking & Sampling TCOM and ECOM–Vegetable Seed Industry working group.

2.5.2.2.4: Editorial change to remove erroneously added genus *Juglans* from list of tree and shrub genera for which hand halving is allowed under ISTA Rules.

2.5.4.2.1: Nomenclature changes according to *ISTA List of Stabilised Plant Names*, 8th edition (2026). Proposal submitted by Nomenclature TCOM and approved by ISTA Rules TCOM.

Table 2C: Nomenclature changes according to *ISTA List of Stabilised Plant Names*, 8th edition (2026). Proposal submitted by Nomenclature TCOM and approved by ISTA Rules TCOM.

Table 2C: Addition of new species to ISTA Rules. *Diplotaxis tenuifolia* (L.) DC. belongs to Brassicaceae family, traded as a vegetable (wild rocket). ISTA Certificates necessary for trade. Validation study done for germination test. Calculator for adding new species used for working weight; calculator results checked by Statistics TCOM. Proposal discussed and voted in Purity TCOM with majority vote; proposal submitted by Germination TCOM and supported by method validation report and vote within Germination TCOM.

Table 2C: Maximum seed lot size for *Solanum lycopersicum* (and linked *Lycopersicon* group of species) reset to 10 000 kg. Proposal developed in consultation with Bulking & Sampling and Purity TCOMs and supported by new experimental data from testing of seed lots and species, with summary report and analysis supplied by Statistics TCOM. Approved by Statistics TCOM and majority vote of Bulking & Sampling TCOM and ECOM–Vegetable Seed Industry working group.

Chapter 3

Table 3B Part 1: Nomenclature changes according to *ISTA List of Stabilised Plant Names*, 8th edition (2026). Proposal submitted by Nomenclature TCOM and approved by ISTA Rules TCOM.

Table 3B Part 1: Addition of new species to ISTA Rules. *Diplotaxis tenuifolia* (L.) DC. belongs to Brassicaceae family, traded as a vegetable (wild rocket). ISTA Certificates necessary for trade. Validation study done for germination test. Calculator for adding new species used for working weight; calculator results checked by Statistics TCOM. Proposal discussed and voted in Purity TCOM with majority vote; proposal submitted by Germination TCOM and supported by method validation report and vote within Germination TCOM.

Chapter 5

5.6.3.1: Change to allow solutions up to 0.2 % potassium nitrate (KNO_3) to be used in germination test to break physiological dormancy. Laboratories will state percentage KNO_3 used on ISTA Certificates. Proposal originates from question asked by ISTA Accreditation and Technical department and is supported by Germination TCOM.

5.6.4: Wording updated, clarifying that first count can be postponed or omitted. Paragraph split for readability. Proposal originates from ISTA Accreditation and Technical department and is supported by Germination TCOM.

5.10: Consequential change due to update of 5.6.4, clarifying that first count can be postponed or omitted. Proposal originates from ISTA Accreditation and Technical department and is supported by Germination TCOM.

5.10: Consequential change due to update of 5.6.3.1 to allow solutions up to 0.2 % potassium nitrate (KNO_3) to be used in germination test to break physiological dormancy. Proposal originates from ISTA Accreditation and Technical department and is supported by Germination TCOM.

Table 5A Part 1: Addition of new species to ISTA Rules. *Diplotaxis tenuifolia* (L.) DC. belongs to Brassicaceae family, traded as a vegetable (wild rocket). ISTA Certificates necessary for trade. Validation study done for germination test. Calculator for adding new species used for working weight; calculator results checked by Statistics TCOM. Proposal discussed and voted in Purity TCOM with majority vote; proposal submitted by Germination TCOM and supported by method validation report and vote within Germination TCOM.

Table 5A Parts 1 and 2: Nomenclature changes according to *ISTA List of Stabilised Plant Names*, 8th edition (2026). Proposal submitted by Nomenclature TCOM and approved by ISTA Rules TCOM.

Chapter 6

6.5.1, 6.7, 6.9: Change in minimum number of seeds required for tetrazolium test, taking account of species with large seeds and species for which it is challenging to obtain 400 seeds. New tolerance tables developed for new testing schemes by Statistics TCOM.

6.6.1 (new section): Addition of section on rounding results. Proposal developed by Tetrazolium TCOM with scope of aligning rounding results of viability test with categories of germination test.

Figures 6.3a,b: Editorial change submitted by Tetrazolium TCOM to add 'with seminal roots' to evaluation guide for cereals.

Table 6A Parts 1 and 2: Nomenclature changes according to *ISTA List of Stabilised Plant Names*, 8th edition (2026). Proposal submitted by Nomenclature TCOM and approved by ISTA Rules TCOM.

Tables 6B–6D: Change in minimum number of seeds required for tetrazolium test, taking account of species with large seeds and species for which it is challenging to obtain 400 seeds. New tolerance tables developed for new testing schemes by Statistics TCOM.

Chapter 7

Method 7-034: New method for detection of *Fusarium oxysporum* f.sp. *lycopersici* in *Solanum lycopersicum* (tomato) seed, including a plating method with a molecular detection PCR and an optional test to confirm pathogenicity of isolates.

Chapter 9

9.2.5.1: Clarification of appropriate period between sampling and moisture testing. Problem mentioned by an ISTA auditor; proposal developed and approved by Moisture TCOM.

9.2.5.2: Editorial change to correct diameter of 8 cm screen from 'greater than' to 'greater than or equal to'. Change submitted by Moisture TCOM.

Table 9A: Alignment with Table 2C, as master table for ISTA Rules. Only species listed in Table 2C should be included. Nomenclature updated according to *ISTA List of Stabilised Plant Names*, 8th edition (2026); proposal submitted by Nomenclature TCOM and approved by ISTA Rules TCOM. Inconsistencies between tables found and mentioned by ISTA members; proposal developed and approved by Moisture TCOM.

Chapter 13

Table 13A: Nomenclature changes according to *ISTA List of Stabilised Plant Names*, 8th edition (2026). Proposal submitted by Nomenclature TCOM and approved by ISTA Rules TCOM.

Chapter 15

15.3: Addition of *Glycine max* and *Brassica* spp. as species to which radicle emergence test can be applied. Editorial change to put list in alphabetical order. Proposals submitted by ISTA Rules TCOM Chair and Vigour TCOM, supported by validation report.

15.8.1.7: Correction of text regarding tolerances for conductivity test. Change submitted by Vigour TCOM.

15.8.2.5.1: Precision of temperature for accelerated ageing chambers. Change submitted by Vigour TCOM.

15.8.2.6.2: Addition of ±0.5 g to give accuracy to non-acceptable seed weights after ageing. Change submitted by Vigour TCOM.

Table 15B: Addition of *Brassica* spp. as species to which radicle emergence test can be applied, with specification for *B. napus*. Proposal submitted by Vigour TCOM and supported by validation report.

Chapter 16

Complete revision of chapter including deletion of requirement for airtight bag for sample submitted for analysis; revision and more detailed description of procedure; harmonisation with other chapters of ISTA Rules.

Chapter 19

19.2.15, 19.7.2, 19.7.3: Clarification on conditions under which GMO test results can refer to either seed lot or seed sample, and therefore are reported on either Orange or Blue International Certificates. Proposal discussed and finally approved by majority vote of GMO TCOM.

Chapter 7: Seed health testing

7.1 Object

The object of a seed health test is to determine the health status of a seed sample, and by inference that of the seed lot.

Health testing of seed is important for four reasons:

a. Seed-borne inoculum may give rise to progressive disease development in the field and reduce the commercial value of the crop.
b. Imported seed lots may introduce diseases into new regions. Tests to meet quarantine requirements may therefore be necessary.
c. Seed health testing may elucidate seedling evaluation and causes of poor germination or field establishment and thus supplement germination testing.
d. Seed health test results can/may indicate the necessity to carry out/perform seed lot treatment(s) in order to eradicate seed-borne pathogens or to reduce the risk of disease transmission.

7.2 Definitions

7.2.1 Seed health

Health of seed refers primarily to the presence or absence of disease-causing organisms, such as fungi, bacteria and viruses, and animal pests, including nematodes and insects, but physiological conditions such as trace element deficiency may be involved.

7.2.2 Pretreatment

Any physical or chemical laboratory treatment of the working sample preceding incubation, given solely to facilitate testing.

7.2.3 Seed treatment

See 2.2.12. For seed health testing, a seed lot may be treated for the purpose of controlling plant pathogens or insect pests, or correcting trace element deficiencies.

7.2.4 ISTA Seed Health Method Validation Programme

Before publication in the *International Rules for Seed Testing*, the ISTA seed health testing methods (new or equivalent) are validated. The principles and factors which should be considered in the validation of methods for the detection of seed-borne pathogens are described in the *ISTA Technical Guidelines for Organising and Analysing Results of Proficiency Tests (PT) and Interlaboratory Tests for Validation of Methods (CT)*.

7.3 General principles

Seed health testing should be performed using methods and equipment which have been tested to ensure they are fit for purpose. Different methods of testing are available, varying in sensitivity and reproducibility and in the amount of training and equipment required. The method used will depend on the pathogen or condition to be investigated, the species of the seed, and the purpose of the test. Selection of the method and evaluation of the results requires knowledge and experience of the methods available. The presence or absence of disease organisms, pests and deleterious physiological conditions specified by the sender is estimated as accurately as the method used permits.

7.4 Procedures

7.4.1 Working sample

The entire submitted sample, or a proportion of it, depending on the test method, may be used as a working sample. The sample should be packaged and submitted in a manner which will not alter its seed health status.

Exceptionally, a submitted sample larger than that prescribed in 2.8 may be required and in such cases the sampler must be instructed accordingly.

When a portion of the submitted sample is required as a working sample, the reduction must be carried out in accordance with 2.5.2, taking appropriate precautions to avoid cross-contamination.

Normally the working sample must not be less than that specified in the method description.

Replicates containing a specified number of seeds, if required, must be taken at random from a subsample after thorough mixing.

7.4.2 Seed treatment

Test results may be influenced by treatment applied to the seed lot. Seed health tests on treated seeds will generally deliver unreliable test results caused by masking or inhibition of the growth of the target organism. Individual Method Sheets will determine whether the testing of treated seeds is acceptable.

7.4.3 Sample storage

The microflora of seed, in the lot or the sample, may change considerably during storage in conditions in which seed viability is satisfactorily maintained. The selection of the appropriate storage conditions must take into account the optimal storage temperature and container in order to maintain sample integrity.

Abundant development of saprophytic moulds including 'storage fungi' in tests can be an indication that the seed is not of good quality due to unfavourable harvesting, processing or storage conditions, or to ageing. Some fungi (such as *Rhizopus* spp.) spread rapidly over tests on blotters and may rot originally healthy seedlings or may interfere with outgrowth of the pathogen from the plated infected seeds. Pretreatment as described in the specific method may be advisable.

7.4.4 Specific directions

Specific seed health testing methods are published online on the ISTA web site at:

www.seedtest.org/en/international-rules-for-seed-testing-rubric-3.html

Seed health methods are normally based on one host, and one pathogen, but multi-pathogen methods may be included. Before publication, all seed health test methods must be validated through the ISTA Seed Health Method Validation Programme. Methods validated in this way at the time of printing are listed in Table 7A. Additions, updates and deletions to this list can be found on the ISTA web site (www.seedtest.org/en/technical-committees/method-validation-programme.html). The definitive list is held by the ISTA Secretariat. It is the responsibility of the laboratory using the method to consult this list.

7.5 Calculation and expression of results

Results are expressed either qualitatively or quantitatively as specified in the individual prescribed methods.

7.6 Reporting results

The results of a test for seed health must be reported under 'Other determinations' as follows:

- either qualitative or quantitative results, as specified in the individual methods;
- negative and positive results, as specified in the individual methods;
- the scientific name of the pathogen detected;
- the percentage of infected seeds;
- the method used, including any pretreatment (7.2.2);
- the size of the sample or fraction examined;
- any additional permitted procedure used.

The absence of a statement concerning the health condition of the seed does not necessarily imply that the health condition is satisfactory.

Table 7A. ISTA official seed health testing methods

7-001a: Detection of *Alternaria dauci* in *Daucus carota* (carrot) seed by blotter method
Host: *Daucus carota* L.
Pathogen(s): *Alternaria dauci* (J.G.Kühn) J.J.Groves & Skolko, syn. *A. porri* f.sp. *dauci* (J.G.Kühn) Neerg., syn. *A. carotae* (Ellis & Langlois) Stevenson & Wellman
Date approved: 2025
Review due: 2030

7-001b: Detection of *Alternaria dauci* in *Daucus carota* (carrot) seed by malt agar method
Host: *Daucus carota* L.
Pathogen(s): *Alternaria dauci* (J.G.Kühn) J.J.Groves & Skolko, syn. *A. porri* f.sp. *dauci* (J.G.Kühn) Neerg., syn. *A. carotae* (Ellis & Langlois) Stevenson & Wellman
Date approved: 2025
Review due: 2030

7-002a: Detection of *Alternaria radicina* in *Daucus carota* (carrot) seed by blotter method
Host: *Daucus carota* L.
Pathogen(s): *Alternaria radicina* Meier, Drechsler & E.D.Eddy, syn. *Stemphylium radicinum* (Meier, Drechsler & E.D.Eddy) Neergaard
Date approved: 2025
Review due: 2030

7-002b: Detection of *Alternaria radicina* in *Daucus carota* (carrot) seed by malt agar method
Host: *Daucus carota* L.
Pathogen(s): *Alternaria radicina* Meier, Drechsler & E.D.Eddy, syn. *Stemphylium radicinum* (Meier, Drechsler & E.D.Eddy) Neergaard
Date approved: 2025
Review due: 2030

7-003: Detection of *Botrytis cinerea* in *Helianthus annuus* (sunflower) seed
Host: *Helianthus annuus* L.
Pathogen(s): *Botrytis cinerea* Pers. ex Pers. (Perfect state *Botryotinia fuckeliana* (de Bary) Whetzel, syn. *Sclerotinia fuckeliana* (de Bary) Fuckel.)
Date approved: 2024
Review due: 2029

7-004: Detection of *Plenodomus lingam* and *Plenodomus biglobosus* in *Brassica* spp. seed
Host: *Brassica* spp.
Pathogen(s): *Plenodomus lingam* (previously *Leptosphaeria maculans* [Tode ex Fr.] Ces. & de Not; *Phoma lingam*) or *Plenodomus biglobosus* (Shoemaker & H. Brun) (previously *Leptosphaeria biglobosa*)
Date approved: 2025
Review due: 2030

7-005: Detection of *Ascochyta pisi* in *Pisum sativum* (pea) seed
Host: *Pisum sativum* L.
Pathogen(s): *Ascochyta pisi* Lib.
Date approved: 2025
Review due: 2030

7-006: Detection of *Colletotrichum lindemuthianum* in *Phaseolus vulgaris* (bean) seed
Host: *Phaseolus vulgaris* L.
Pathogen(s): *Colletotrichum lindemuthianum* (Sacc. & Magn.) Briosi & Cav.
Date approved: 2024
Review due: 2029

7-007: Detection of *Alternaria linicola*, *Botrytis cinerea* and *Colletotrichum lini* in *Linum usitatissimum* (flax, linseed) seed
Host: *Linum usitatissimum* L.
Pathogen(s): *Alternaria linicola* J.W.Groves & Skolko; *Botrytis cinerea* Pers. ex Pers. (Perfect state *Botryotinia fuckeliana* (de Bary) Whetzel, syn. *Sclerotinia fuckeliana* (de Bary) Fuckel.); *Colletotrichum lini* (Westerd.) Tochinai, syn. *C. linicola* Pethybr. & Laff.
Date approved: 2024
Review due: 2029

7-008: Detection of *Caloscypha fulgens* in *Picea engelmannii* and *P. glauca* (spruce) seed
Host: *Picea engelmannii* Engelm.; *Picea glauca* (Moench) Voss
Pathogen(s): *Caloscypha fulgens* (Pers.) Boud. (Imperfect state *Geniculodendron pyriforme* Salt)
Date approved: 2024
Review due: 2029

Table 7A. ISTA official seed health testing methods (continued)

7-009: Detection of *Fusarium circinatum* 1n *Pinus* spp. (pine) and *Pseudotsuga menziesii* (Douglas fir) seed
Host: *Pinus* spp.; *Pseudotsuga menziesii* (Mirb.) Franco
Pathogen(s): *Fusarium circinatum* Nirenberg & O'Donnell, syn. *Fusarium subglutinans* f. sp. *pini* Hepting, syn. *Fusarium lateritium* f. sp. *pini* Hepting, syn. *Gibberella circinata*
Date approved: 2024
Review due: 2029

7-010: Detection of *Bipolaris oryzae* in *Oryza sativa* (rice) seed
Host: *Oryza sativa* L.
Pathogen(s): *Bipolaris oryzae* (Breda de Haan) Shoem., syn. *Drechslera oryzae*, syn. *Helminthosporium oryzae* Breda de Haan (Perfect state *Cochliobolus miyabeanus* (Ito & Kurib.) Drechsler ex Dastur, syn. *Ophiobolus miyabeanus* Ito & Kuribayashi)
Date approved: 2024
Review due: 2029

7-011: Detection of *Pyricularia oryzae* in *Oryza sativa* (rice) seed
Host: *Oryza sativa* L.
Pathogen(s): *Magnaporthe grisea* (Hebert) Barr (Imperfect state *Pyricularia oryzae* Cavara), syn. *P. grisea*
Date approved: 2024
Review due: 2029

7-012: Detection of *Trichoconiella padwickii* in *Oryza sativa* (rice) seed
Host: *Oryza sativa* L.
Pathogen(s): *Trichoconiella padwickii* Ganguly, syn. *Alternaria padwickii* (Ganguly) Jain
Date approved: 2024
Review due: 2029

7-013a: Detection of *Ustilago nuda* in *Hordeum vulgare* subsp. *vulgare* (barley) seed by embryo extraction
Host: *Hordeum vulgare* L. subsp. *vulgare*
Pathogen(s): *Ustilago nuda* (Jens.) Rostr.
Date approved: 2025
Review due: 2030

7-013b: Detection of *Ustilago nuda* in *Hordeum vulgare* subsp. *vulgare* (barley) seed by dehulling and embryo extraction
Host: *Hordeum vulgare* L. subsp. *vulgare*
Pathogen(s): *Ustilago nuda* (Jens.) Rostr.
Date approved: 2024
Review due: 2029

7-014: Detection of *Parastagonospora nodorum* in *Triticum aestivum* subsp. *aestivum* (wheat) seed
Host: *Triticum aestivum* L. subsp. *aestivum*
Pathogen(s): *Parastagonospora nodorum* (Berk.) Quaedvl., Verkley & Crous 2013, syn. *Stagonospora nodorum*, syn. *Septoria nodorum* Berk. (Perfect state *Leptosphaeria nodorum* Mailer)
Date approved: 2024
Review due: 2029

7-015: Detection of *Epichloë coenophiala* in *Festuca* spp. (fescue) and of *Neotyphodium lolii* in *Lolium* spp. (ryegrass) seed
Host: *Festuca* spp., *Lolium* spp.
Pathogen(s): *Epichloë coenophiala* (Morgan-Jones & W. Gams) C.W. Bacon & Schardl; *Neotyphodium lolii* (Latch, M.J.Chr. & Samuels) Glenn, C.W.Bacon & Hanlin
Date approved: 2024
Review due: 2029

7-016: Detection of *Phomopsis* complex in *Glycine max* (soybean, soya bean) seed
Host: *Glycine max* (L.) Merr.
Pathogen(s): *Phomopsis longicolla* Hobbs, *Diaporthe phaseolorum* var. *sojae* (Lehm.) Wehm. (Imperfect state *P. phaseoli* [Desm.] Sacc.), syn. *P. sojae* Lehmann; *Diaporthe phaseolorum* (Cke. & Ell.) Sacc. f. sp. *caulivora* (DPC), syn. *D. phaseolorum* var. *caulivora* Athow & Caldwell
Date approved: 2025
Review due: 2030

7-017: (Replaced by 7-007)

7-018: (Replaced by 7-007)

7-019a: Detection of *Xanthomonas campestris* pv. *campestris* and *Xanthomonas campestris* pv. *raphani* in *Brassica* spp. seed
Host: *Brassica* spp.
Pathogen(s): *Xanthomonas campestris* pv. *campestris* (Pammel) Dowson and *Xanthomonas campestris* pv. *raphani* (White) Dye
Date approved: 2025
Review due: 2030

7-019b: Detection of *Xanthomonas campestris* pv. *campestris* in disinfested/disinfected *Brassica* spp. seed
Host: *Brassica* spp.
Pathogen(s): *Xanthomonas campestris* pv. *campestris* (Pammel) Dowson
Date approved: 2025
Review due: 2030

Table 7A. ISTA official seed health testing methods (continued)

7-020: Detection of *Xanthomonas hortorum* pv. *carotae* in *Daucus carota* (carrot) seed
Host: *Daucus carota* L.
Pathogen(s): *Xanthomonas hortorum* pv. *carotae* (Kendrick) Vauterin, Hoste, Kersters & Swings, syn. *X. campestris* pv. *carotae* (Kend) Dye
Date approved: 2025
Review due: 2030

7-021: Detection of *Xanthomonas phaseoli* pv. *phaseoli* and *X. citri* pv. *fuscans* in *Phaseolus vulgaris* (bean) seed
Host: *Phaseolus vulgaris* L.
Pathogen(s): *Xanthomonas phaseoli* pv. *phaseoli* (Smith) Constantin, Cleenwerck, Maes, Baeyen, Van Malderghem, De Vos, Cottyn (previously *X. axonopodis* pv. *phaseoli* (Smith) Vauterin, Hoste, Kersters & Swings; *X. campestris* pv. *phaseoli* [Smith] Dye.); *X. citri* pv. *fuscans* (Schaad *et al*.) Constantin *et al*. (previously *X. axonopodis* pv. *phaseoli* var. *fuscans* Vauterin, Hoste, Kersters & Swings; *X. campestris* pv. *phaseoli* var. *fuscans* [Burkholder] Starr & Burkholder)
Date approved: 2025
Review due: 2030

7-022: Detection of *Microdochium nivale* and *M. majus* in *Triticum* spp. (wheat) seed
Host: *Triticum* spp.
Pathogen(s): *Microdochium nivale* Samuels & Hallett, syn. *Fusarium nivale* (Fr.) Rabenh. (Perfect state *Monographella nivalis* (Schaff.) Müller); *M. majus* (Wollenw.) Glynn & S.G.Edwards, syn. *M. nivale* var. *majus* (Wollenw.) Samuels & I.C.Hallett
Date approved: 2024
Review due: 2029

7-023: Detection of *Pseudomonas savastanoi* pv. *phaseolicola* in *Phaseolus vulgaris* (bean) seed
Host: *Phaseolus vulgaris* L.
Pathogen(s): *Pseudomonas savastanoi* pv. *phaseolicola* (Burkh.) Gardan, Bollet, Abu, Ghorrah, Grimont & Grimont, syn. *P. syringae* pv. *phaseolicola* (Burkh.) Young, Dye & Wilkie
Date approved: 2025
Review due: 2030

7-024: Detection of *pea early browning virus* and *pea seed-borne mosaic virus* in *Pisum sativum* (pea) seed
Host: *Pisum sativum* L.
Pathogen(s): *Pea early browning virus* (PEBV) and *pea seed-borne mosaic virus* (PSbMV)
Date approved: 2025
Review due: 2030

7-025: Detection of *Aphelenchoides besseyi* in *Oryza sativa* (rice) seed
Host: *Oryza sativa* L.
Pathogen(s): *Aphelenchoides besseyi* Christie
Date approved: 2024
Review due: 2029

7-026: Detection of *squash mosaic virus*, *cucumber green mottle mosaic virus* and *melon necrotic spot virus* in Cucurbitaceae seed
Host: Cucurbitaceae
Pathogen(s): *Squash mosaic virus* (SqMV); *cucumber green mottle mosaic virus* (CGMMV); *melon necrotic spot virus* (MNSV)
Date approved: 2025
Review due: 2030

7-027: Detection of *Pyrenophora teres* and *P. graminea* in *Hordeum vulgare* subsp. *vulgare* (barley) seed
Host: *Hordeum vulgare* L. subsp. *vulgare*
Pathogen(s): *Pyrenophora teres* Drechsler (Imperfect state *Drechslera teres* (Sacc.) Shoem.); *Pyrenophora graminea* Ito & Kurib. (Imperfect state *D. graminea* (Rabenh. Ex Schlecht.) Shoem.)
Date approved: 2024
Review due: 2029

7-028: Detection of infectious *tobacco mosaic virus* and *tomato mosaic virus* in *Solanum lycopersicum* (tomato) seed by the local lesion assay (indexing) in *Nicotiana tabacum* plants
Host: *Solanum lycopersicum* L.
Pathogen(s): *Tobacco mosaic virus* (TMV); *tomato mosaic virus* (ToMV)
Date approved: 2024
Review due: 2029

7-029: Detection of *Pseudomonas syringae* pv. *pisi* in *Pisum sativum* (pea) seed
Host: *Pisum sativum* L.
Pathogen(s): *Pseudomonas syringae* pv. *pisi* (Sack.) Young, Dye & Wilkie
Date approved: 2025
Review due: 2030

7-030: Detection of *Acidovorax valerianellae* in *Valerianella locusta* (corn salad) seed
Host: *Valerianella locusta* (L.) Laterr.
Pathogen(s): *Acidovorax valerianellae* sp. nov.
Date approved: 2024
Review due: 2029

Table 7A. ISTA official seed health testing methods (continued)

7-031: Filtration method for detection of *Ditylenchus dipsaci* in *Medicago sativa*; *D. dipsaci* and *D. gigas* in *Vicia faba*
Host: *Medicago sativa* L. and *Vicia faba* L.
Pathogen(s): *Ditylenchus dipsaci* Kuhn, 1857; *Ditylenchus gigas* n. sp.
Date approved: 2024
Review due: 2029

7-032: Detection of *Verticillium dahliae* in *Spinacia oleracea* (spinach) seed
Host: *Spinacia oleracea* L.
Pathogen(s): *Verticillium dahliae* Kleb.
Date approved: 2024
Review due: 2029

7-033: Detection of *Ascochyta rabiei* in *Cicer arietinum* (chickpea) seed
Host: *Cicer arietinum* L.
Pathogen(s): *Ascochyta rabiei*
Date approved: 2025
Review due: 2030

7-034: Detection of *Fusarium oxysporum* f.sp. *lycopersici* in *Solanum lycopersicum* (tomato) seed
Host: *Solanum lycopersicum* L.
Pathogen(s): *Fusarium oxysporum* f.sp. *lycopersici* (Saccardo) Snyder & Hansen, syn. *F. bulbigenum* var. *lycopersici* (Bruschi) Wollenweber & Reinking; *F. lycopersici* D.Bruschi
Date approved: 2026
Review due: 2031