

2023 PUR Updates

Dr. Ruoqing Wang

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Verona, Italy



ISTA Purity Committee (PUR) members 2022-2025



Ruoqing Wang
(Chair)
Canada



Andrea Jonitz
(Vice Chair)
Germany



Deborah Meyer
U.S.A.



Augusto Martinelli
Argentina



Kepha Oganda
Kenya



Maria Duter
New Zealand



Dot Vittrup Pedersen
Denmark



Selma Kurt
Turkey



Axel Goeritz
Germany



Sue Cousins
New Zealand



Aurelie Charrier
France



E. (Erik) van Egmond
Netherlands



Sumaia Mahmuda
Bangladesh



Shakara Naika
Netherlands



Tauhid Parvez
Canada

PUR Scope for ISTA Rules



- **Chapter 3** The purity analysis
- **Chapter 4** Determination of other seeds by number
- **Chapter 10** Thousand-seed weight (TSW) determination
- **Chapter 11** Testing coated seeds
- **Chapter 14** X-ray test
- **Chapter 16** Rules for size and grading of seeds
- **Chapter 18** Seed mixture analysis



CECOM Liaison: Craig McGill
New Zealand

New Publication

- Seed Identification Fact Sheets from ISTA project 20-2

Project Members: Debroa Meyer, Ruoqing Wang, Sumaia Mahmuda, Erik van Egmond

Planned Publication

- Frequently Asked Questions (FAQ)-
Andrea Jonitz
- Seed ID references-Andrea Jonitz
- Revision of PSD Handbook

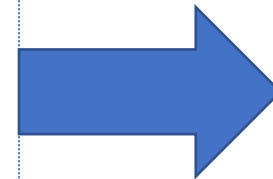


Johnson grass (*Sorghum halepense*) spikelets

https://seedidguide.idseed.org/fact_sheets/sorghum-halepense-2/?tab=2

2023 ISTA Rule proposal

- Revision of Chapter 11 Testing Coated Seeds
- Revision of Chapter 14 x-ray chapter (ATC and FST)
- Statistical Calculator application for new species and revision of Table 2C
- 6 proposals related Chapter 3 and 4 of ISTA Rules



**Testing uniformity
& validity**

2024-25 ISTA Rule proposal

- Anemometer usage and calibration
- % testing in OSD
- Re-visit the definition of seed, e.g. rhizomes of *Cyperus esculentus*
- Review of Individual impurities having an undue effect on results



Photos by K. Chayka, credit to *Minnesota Wildflowers*

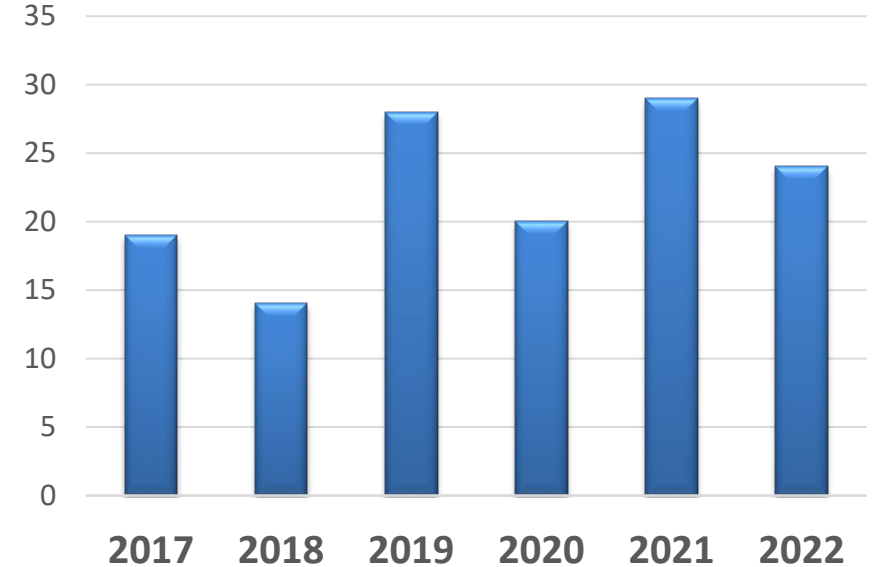
On-going Q & A

- ISTA members
- ISTA other TCOMs
- ISTA auditors

Question types

- ISTA Rules
 - Coated seeds
 - Reporting
 - Rule interpretation
- Seed ID inquiries
- Testing advice

Number of questions to PUR



PUR Training Program

- ISTA Seed Identification Exercise: Seed Mixture
 - Practice ID with answers and photos
 - Accumulate reference specimens

<https://www.seedtest.org/en/proficiency-tests/seed-mixture-training.html>

ISTA Seed Mixture Round#11



Special thanks

To Dr. Andrea Jonitz whose laboratory prepared the samples , Landwirtschaftliches Technologie Zentrum Augustenberg, Germany

ISTA Seed Mixture Round#12

Special thanks

To Dot Vittrup Pedersen, DFL, Denmark

Webinars

- 2022 New Technology webinars related to Project 19-1 (Aug 9, 2023)
- 2023 Calculator for adding working weight to Table 2C (STA, BSC) (April 26, 2023)
- Other training webinar tentatively planned in 2023

Workshops

- Received one workshop request in 2022 from Uruguay
- Other requests are received tentatively for 2024 and 2025
- Please contact PUR if you want to host a purity workshop

PUR Programs and Tools



Please visit PUR webpage for more information and tools at
<https://www.seedtest.org/en/technical-committees/purity-committee.html>

Working Programme

[Working Programme 2022 - 2025](#)

Activity Reports

[Activity Report 2021](#)

[Activity Report 2020](#)

[Activity Report 2019](#)

Other Documents

[ISTA Universal List of Species](#)

[Seed Mixture Training](#)

[Procedure for Blower Calibration](#)

[Seed Identification of Eight Urochloa \(= Brachiaria\) Species \(Cultivated or Weed\)](#)

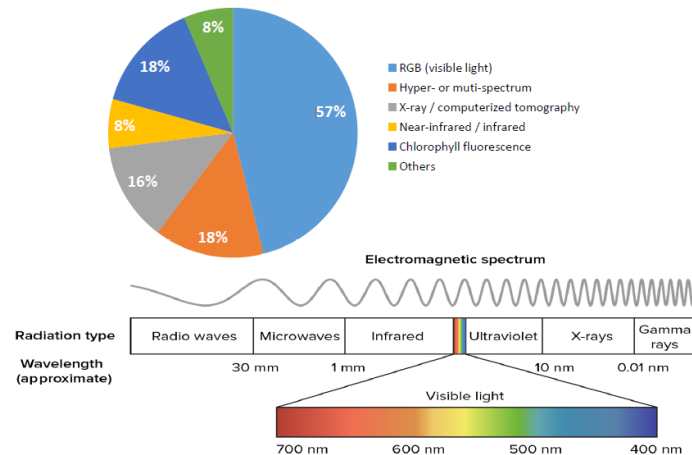
[Calculator for adding working weights to Table 2C of the ISTA Rules](#)

New Technology Application-ISTA 19-1

(2020-2022)

Objectives:

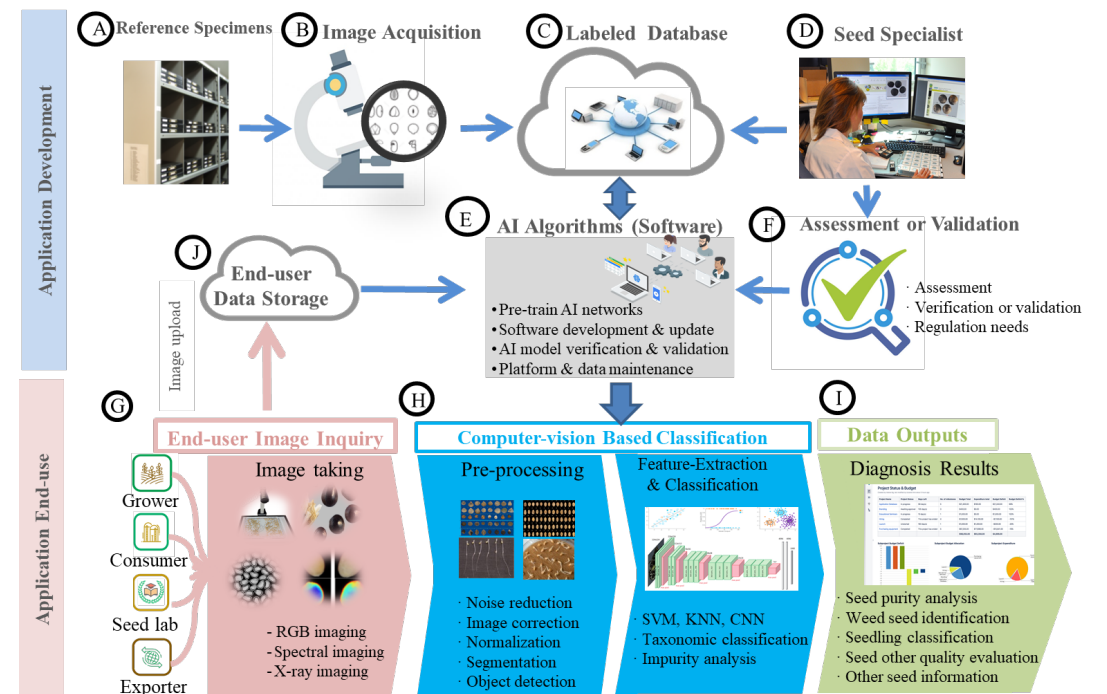
- Inventory market available equipment /technologies (37 tech provides)
- Evaluate the technology potential and challenges



Electromagnetic spectrum (Image credit to Khan Academy, under a license CC BY-SA 3.0 <https://creativecommons.org/licenses/by-sa/3.0/deed.en>)

Recommendations:

- Seed ID reviewed and published in SST <https://doi.org/10.15258/sst.2022.50.1.s.05>
- Project summary in STI <https://issues.ink/ista/165-february-2023/?page=22>



UL Digital Reference Materials (2021-2023)

- Task: 130 species for developing ID fact sheet and diagnostic images
- Authors:
 - Completed author training
 - Ongoing group discussion for product consistency
 - Need more active authors
- Product in 2022
 - 43 completed
 - 87 remains for 2023

https://seedidguide.idseed.org/fact_sheets/?tab=1

Size

- Achene length: 3.0 – 4.1 mm (average: 3.5 mm); width: 1.8 – 2.4 mm (average 2.0 mm)
- Perianth length: 3.3 – 4.5 mm (average: 4.0 mm); width: 2.1 – 2.7 mm (average 2.4 mm)

Shape

- Achene is egg-shaped in two dimensional outline and is strongly trigonous with slightly concaved sides

Surface Texture

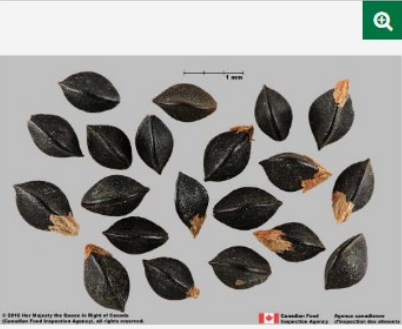
- Achene surface is roughened with wrinkles on the flat faces and smooth on the edges

Colour


- Achene is dull and solid black
- Perianth is reddish-brown

Other Features

- The perianth is roughened and papery, divided into lobes that overlap around the achene
- A portion of the perianth may remain at one end of the achene if it is removed
- The seed (rarely seen) is oval-shaped and trigonous with a reddish seed coat



Wild buckwheat (*Fallopia convolvulus*) achenes



MAIN SPECIES

Fallopia convolvulus (L.) Á. Löve



Fallopia convolvulus (L.) Á. Löve

Polygonaceae

Wild buckwheat (*Fallopia convolvulus*) achenes

SIMILAR SPECIES

Polygonum aviculare



Polygonum aviculare

Polygonaceae

Prostrate knotweed (*Polygonum aviculare*) achenes

PUR General Program (30 minutes)

- Introduction (5 minutes)
- Project lead topics (15 minutes)
 - References for seed ID and FAQ (Andrea)
 - Project 20-2 and Project 19-1 (Ruoqing)
 - Project 19-2 New Technologies for Other Seeds Determination(Dot)
- Potential Rule proposal discussion? (Discussion or consultation, 10 minutes)
 - Anemometer rule proposal update or consultation (Dot)
 - % soil test in OSD (Sue)
 - Chapter 11 testing coted seeds (Erik)

New technology application in Purity & OSD (60 minutes)

- The pilot usage of new technologies in Purity or OSD
 - DLF new technology application (15 minutes)
 - Bayer new technology application (15 minutes)
- Panel discussion on the applications of computer vision (Bert, Didier, Kirk, Florina, Craig, 30 minutes)
 - Computer vision verification/validation?
 - Computer vision accreditation requirement?
 - Computer vision proficiency tests?



Thank you!

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