In-house germination methods:
Questions from the laboratories

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Discussion and questions from:

Seed Group of the Association of
German Agricultural Testing and Research Stations (VDLUFA)

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The major goal of ISTA is uniformity in seed testing

ISTA Constitution, ARTICLE III

...The primary purpose of the Association is to develop, adopt and publish standard procedures for sampling and testing seeds, and to promote uniform application of these procedures for evaluation of seeds moving in international trade.

Germination is the key quality trait of seed.

What is the objective of a germination test?

ISTA RULES 2012, Chapter 5:

...The objective of the germination test is to determine the germination potential of a seed lot, conditions standardized..., to be reproduced within limits...

What do ISTA Labs and the Seed Trade, expect from an ISTA germination test result?

- the maximum of germination percentage? or
- a worldwide comparable result, achieved by standardized methods?
Understanding Germination – up to now  

Since Nobbe, in ISTA Rules 1956

Aim of a germination test....

... to gain information with respect to the field planting value of the seed
......germination tests must be carried out under favorable laboratory conditions
that will permit reproducible results....

Development of GERMINATION RULES:

Method components in Table 5A (substrate, temperature, pretreatment)
were identified as a compromise between:

“Each seed lot is an individual and might need specific favorable
conditions to realise its germination potential.”

and

“Uniformity in Seed Testing”

Consequently, for each species we actually have not one but a
defined set of methods
- as many as necessary but as few as possible -
Can the “Flexible” approach be the future of ISTA as an Association for Standardisation and Accreditation? Is uniformity in seed testing still the goal for ISTA?

The germination test results reflect a fundamental quality trait of seeds. There are standards defined in seed certification systems, markets and companies and they all rely on the reliability of the methodology with a defined uncertainty. To introduce fundamental changes in this methodology should be done very carefully.

- Is a Peer Validation of only 3 Laboratories sufficient for that important task or is it poor in proportion to the validation study concept being established by ISTA?

- The ISTA Rules will no longer be the methods-standard for laboratory work but a wide compilation of harmonised reference methods.

- Who will be responsible for acceptable methods within ISTA? How to achieve?

- The more methods, the more difficult will be the selection of the correct method and then the correct application of all of them.
  - Who can audit the correct application for ISTA? The team of auditors?
  - Is it possible to audit a big number of methods?
  - Are the methods reliable??
• When ISTA Rules only define the standard reference method for germination tests, the question will arise: how uniform are the test results on the certificates in practice?

• BUT ISTA must guarantee the value of the ISTA Certificate and the ISTA System of safeguarding uniformity in seed testing.

• Proficiency tests have to regard all the methods being applied worldwide as valid already for the GMO PTs (Performance based approach).

  There were specific reasons for the performance based approach (PBA) in GMO testing (high differences in methods costs…..). Originally PBA in GMO testing was introduced as an exception to meet all the needs and activities of the GMO and STAT Committees!!

• Are results obtained with a performance based method equivalent to a result of the standard method? Maybe yes and the results themselves may not be poorer, but the perception of ISTA stakeholders, may be that they are poorer?
• The proposed **performance based approach** in germination testing may impair the attractiveness of the ISTA Certificate for the international seed trade.

• Who will bring **advancement and development into the ISTA RULES** if the labs do not share their knowledge? Those labs having their “in-house calibrated method” may not be interested to bring forward the method as an ISTA RULE.

• Will the GER-COM then have the **duty** to survey the new accepted in-house methods and to pick the best ones, to validate them and to **bring them into the RULES**?

• **Regarding politics:** With “flexibility in germination” all doors get opened - also to allow the use of methods from private sector, nationally, from AOSA and others, - would ISTA lose the status of “internationally adopted methods”?

**It is already possible**
to state test results of any other germination test method on ISTA Certificates under “Other determinations”. Is there really need to state “any” test results in the “GER- boxes”?

• We will have to find a wise solution and to respect the perspectives of **ISTA Laboratories, Seed Trade, Seed Producers, farmers** and the official certification bodies
By allowing in-house germination test methods

ISTA may no longer stand for Uniformity in Seed Testing?

need a new motto?
need a new logo?
break with its history?

Many thanks for your attention.