APPROVING
AUTOMATIC SEED SAMPLERS

Bulking and sampling committee
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Aim:

To revise the protocol how to approve automatic seed samplers

Current:

“protocol for automatic seed sampling and the accreditation of it” is from 1998
What is an automatic seed sampler?

Device mounted in the seed stream

- Primary samples are drawn from seed stream automatically usually by time intervals

- Consists of
  - Sampling unit
  - Outlet for seed
  - Container for composite sample

Pictures from ISTA Handbook on seed sampling
Seed stream

Moving beak

Outlet of sample

Seed stream

Picture from Rationell kornservice
Why automatic sampling?

- Sampling during the process
- Systematic sampling
- Often more primary samples
- No human impact
- Can be used in closed processing system
- Sampling is not depending on sizes and type of containers
Requirements according to ISTA Rules

- Samples the entire cross section uniformly
- No damage to seeds
- No selection according to any seed character
- Seed may not bounce out
- Last step before filling

Picture from ISTA Handbook on seed sampling
Installation

- Sampling after last step of processing
- Close to filling
- Falling distance of sample equal to the one of the seed lot
- Closed duct

- No seeds can remain in sampling system
- Installation instructions must be followed
Operation

- Unambiguous link seed lot – composite sample
- No changes during processing of one seed lot
- Opening large or time long enough for seeds and impurities to fall into the sampler
- At least minimum of primary samples
- At least minimum sample size
Application

- Type, brand
- Description of installation
- Procedures and instructions for operation, maintenance and cleaning
- Responsible person
- For which species the automatic seed sampler will be used
Separate approval for different species groups

4 groups of species

A. Less sensitive bigger seeds (e.g. cereals)
B. Sensitive bigger seeds (e.g. pulses)
C. Small-seeded chaffy seeds (e.g. Festuca)
D. Small-seeded non-chaffy seeds (e.g. Trifolium)
Test plan for approval

- ISTA lab and seed plant in cooperation
- What analysis best showing if the automatic seed sampler
  - Selects
  - Damages
  - Stuck the seeds
- Germination, purity, OSC, TSW
Test plan, principle

- 10 seed lots/species group
- Sample the same seed lot manually and by automatic seed sampler
- Analyze both
- Compare results by tolerance tables
- At least 70 % of the samples within tolerances
New tests required?

• Under good conditions automatic seed samplers work consistently
• Test again
  – if substantial changes are made in the seed plant processing system
  – If automatic seed sampler needs to be approved for a new species group
Annual check

- Check by ISTA laboratory
  - In the protocol there is a checklist included
  - Timer adjustments
  - Cleanliness
  - Correct sampling action
  - Weak points of the brand
Thanks for your attention