
Guidelines for training, examining and monitoring Authorised Seed Samplers within the European Union

Document elaborated by France, the Netherlands and the United Kingdom in collaboration with the members of the European Seed Certification Agencies Association (ESCAA)

Latest update: April 2023



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I. FOREWORD

The European Seed Certification Agencies Association (ESCAA) has been discussing the topic of sampling under official supervision since its annual meeting 2012 (ESCAA meeting in Slovenia).

In 2014, a questionnaire was sent to the ESCAA Members on issues related to training, examination and supervision for activities realised under official supervision. 29 replies were received and presented during the meeting in Belgium. At the end of the meeting, it was decided to look into the issues on seed sampling under official supervision in more depth and a working group including initially France, Denmark, the Netherlands, Poland and the United Kingdom was set up to deal with this topic.

The working group was asked to:

- Provide some recommendations on training, examination, supervision etc. of samplers under official supervision,
- The recommendations must meet current directive requirements,
- The development of a guideline would be useful to improve harmonisation within the MS,
- Suggest areas of Directives that need changing/modernising possibly.

In 2015 in Latvia, some additional points arising from the 2014 questionnaire were further analysed by the working group and discussed with the participants of the meeting in order to refine the first recommendations.

The work on this topic was continued by France, Netherlands and United Kingdom and a presentation was given during the 2016 meeting in Austria, outlining a series of general recommendations for:

- Requirements to grant an authorisation to samplers (training, examination methods)
- Monitoring (check-sampling and other appropriate checks)
- Corrective and preventive actions including withdrawal of the authorisation if required
- Automatic seed sampling.

The presentation was well received. Some points were further debated and from the outcomes of these discussions, the working group was asked to produce a Guideline.

II. INTRODUCTION

1. These Guidelines have been prepared to assist Member States within the European Union (EU) in harmonising the requirements, training and authorisation of persons undertaking seed sampling under official supervision.
2. When authorising seed sampling duties, it is essential that the Authority has a clear understanding of the responsibilities involved, and should ensure that the persons are competent enough to carry out the sampling duties.
3. There may also be legal, financial, organisational and other criteria involved in the process of authorising sampling.
4. These Guidelines are strictly voluntary and have been written in the interest of co-operation and harmonisation through sharing experiences. It should not be considered as (international) standard.
5. The official Authority in a Member State is free to adapt or develop these guidelines to meet the needs of their Country, certification or legal system, so long as the minimum requirements of the European union legislation is met.
6. {These guidelines can also be used as a tool to cover the OECD requirements for authorised seed samplers (Common Appendix 5). }
7. For clarity, the term “seed sampling” also includes labelling and sealing of seed lots and submitted samples.
8. This document uses the term “authorised” for a person operating under official supervision. This term is not absolute, and other terms such as “licensed” may be used with a Member State.
9. The appropriate Authority in a Member State is responsible for the operation of the process of authorising a seed sampler to operate under official supervision.
10. The Authority needs to maintain some form of confidentiality in relation to the information obtained in the course of the authorisation process.
11. The authority should consider a system for the control of all documentation relating to the authorisation system, which should include authorised samplers receiving any amendments to relevant documentation or other required changes to their work practices.

III. EU REQUIREMENTS FOR SAMPLERS ACTING UNDER OFFICIAL SUPERVISION

Below is the wording from the Directives:

1. Member States shall require that, for the checking of varieties, and for the examination of seed for certification, samples are drawn officially or under official supervision in accordance with appropriate methods. However, seed sampling with a view to controls pursuant to Article 19 shall be carried out officially.

1a. When the seed sampling under official supervision provided for in paragraph 1 is carried out, the following requirements shall be complied with:

(a) seed sampling shall be carried out by seed samplers who have been authorised for that purpose by the seed certification authority of the Member State concerned under the conditions set out in (b), (c), and(d);

(b) seed samplers shall have the necessary technical qualifications obtained in training courses organised under conditions applicable to official seed samplers and confirmed by official examinations.

They shall carry out seed sampling in accordance with current international methods;

(c) seed samplers shall be: (i) independent natural persons; (ii) persons employed by natural or legal persons whose activities do not involve seed production, seed growing, seed processing or seed trade; or (iii) persons employed by natural or legal persons whose activities involve seed production, seed growing, seed processing or seed trade.

In the case referred to in (iii), a seed sampler may carry out seed sampling only on seed lots produced on behalf of his employer, unless it has been otherwise agreed between his employer, the applicant for certification and the seed certification authority;

(d) the performance of the seed samplers shall be subject to appropriate supervision by the seed certification authority. When automatic sampling is in operation appropriate procedures must be adhered to and officially supervised;

(e) for the purposes of the supervision referred to in (d) a proportion of the seed lots entered for official certification shall be check-sampled by official seed samplers. That proportion shall in principle be as evenly spread as possible over natural and legal persons entering seed for certification, and the species entered but may also be oriented to eliminate specific doubts. That proportion shall be at least 5%. This check sampling does not apply to automatic sampling.

The Member States shall compare the seed samples drawn officially with those of the same seed lot drawn under official supervision;

IV. ACADEMIC QUALIFICATIONS

There are no requirements for any initial academic or vocational qualifications for persons to carry out seed sampling activities under official supervision. Where these individuals are being employed by a non-government company, it is for the company to decide its recruitment requirements.

The EU Directives only require that the individual obtains the necessary technical qualifications in appropriate training courses for seed sampling, similar to those that are required for the official seed samplers and followed by official examinations to confirm an individual's ability.

A Member State may require that an individual wishing to apply for training should have some practical experience of working in a seeds warehouse or have spent some time shadowing an authorised or official seed sampler.

V. GENERAL PROCEDURE

The authority in a Member State should define and publish a clear procedure for the authorisation of person to take samples under official supervision.

This procedure should include:

- a) An outline of the elements required for training
- b) Types and frequency of examinations
- c) How skills are to be maintained
- d) Procedure for granting an Authorisation
- e) How the official supervision of the seed samplers will be carried out
- f) Corrective measures and the possibility of a withdrawal of the authorisation where there is a non-compliance (or non-compliances)

VI. TRAINING

Seed sampling should be carried out in accordance with internationally recognised rules. In practice this means following the ISTA Rules/requirements.

The aim of the training is to give the ability to the trainee to draw a sample of seed which is representative of a seed lot and which allows the seed testing station to determine the quality of the lot that has been sampled. In addition, the trainee must know how a seed lot must be correctly labelled and sealed. In addition, the training should include information on the potentially severe implications of submitting a “bad” (non-representative) sample for seed testing.

Member states are free to operate their own training regime, and the training courses that they use can be tailored to suit the individual’s circumstances, or can include the full breadth of all the sampling topics and requirements. The information below is meant to include the full breadth of sampling elements that should be considered for inclusion in the training programme, and is based on meeting ISTA requirements.



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The training should consist of both theoretical and practical modules, and the duration of each part should be a minimum of a half day. Where the training takes place is at the discretion of the Authority in the Member State, and will depend on the suitability of the training facilities, sampling equipment and seed in containers etc for the practical elements. It is possible for the training to be in a purpose designed facility, or to take place in a commercial seed warehouse.

It may also be desirable for trainees wishing to be authorised to gain some initial background experience in their work place by working with, for example, a seed sampler who is already authorised.

Member States should ensure that these training courses are similar to the training courses organised for official /Government seed samplers. It is possible that the training courses can be run by the Authority, or for the Authority to delegate the training course to another competent body (eg ISTA, or a training organisation recognised by the Authority). However, the Authority should carry out the examination and authorisation.

Theoretical Training

The detail below contains the main points that Member States might wish to consider including in their training programme:

- ✓ Assessment of the knowledge of the participants at the start of the training
- ✓ Explanation and discussion on the Directive requirements (or National Regulations implementing Directive requirements)
- ✓ Importance of taking a representative sample
- ✓ Heterogeneity
- ✓ Definition of a seed lot
- ✓ General principles of seed sampling
- ✓ Sampling intensities
- ✓ Calculation of the required number of primary samples
- ✓ Sampling methods for manual sampling, eg:
 - ↳ Nobbe trier
 - ↳ Walking Stick (or sleeve trier)
 - ↳ Sampling by hand
 - ↳ Silo / bulk sampler
 - ↳ Examples of wrong equipment, for example, the Thief trier
- ✓ Sample mixing and sample reduction, eg:
 - ↳ Mechanical reduction methods:
 - Soil or Riffle divider
 - Centrifugal divider
 - Conical divider
 - Rotary divider
 - Variable divider
 - ↳ Hand reduction methods:
 - Spoon method
 - Modified halving
 - Hand halving method
- ✓ Sealing, identification and dispatch of samples to the seed testing laboratory (Including information on submitted sample weights)
- ✓ Sealing and labelling of containers
- ✓ How to take a moisture sample
- ✓ Automatic sampling
 - ↳ Types of automatic samplers
 - ↳ Calculation of the number of primary samples
 - ↳ Sampling process
 - ↳ Checking log books etc
 - ↳ Packaging, storage and dispatch of samples
 - ↳ Administration
 - ↳ Accuracy of random sampling
 - ↳ Homogeneity of the seed lot



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- ✓ Health and Safety issues
- ✓ Hygiene measures (to prevent contamination of disease)
- ✓ Keeping records

Practical training

- ✓ Sampling of seed in bags with Nobbe trier
- ✓ Sampling of seed in large containers with stick (sleeve) trier
- ✓ Sampling of small packages
- ✓ Mixing and reducing the composite sample into the submitted sample
- ✓ Sealing of samples (including the moisture sample)
- ✓ Calibration of the sample reduction equipment (soil divider, conical divider etc.)
- ✓ Examples of “how not to do it” eg - poor / wrong technique, incorrect sampling, and sealing and labelling mistakes / errors



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VII. EXAMINATION

There must be some form of examination to determine an individual's competence in seed sampling.

It is recommended that the examination should be in 2 parts, with a theoretical and a practical examination. The examination should be designed to test an individual on as many aspects of seed sampling as possible, but it should be tailored to suit local conditions / expectations. The examination can either be structured so that it tests an individual on all aspects of seed sampling, or just those that the individual will encounter / use in their workplace. If it is more convenient, the examination (either the practical or both the theory and practical) could be conducted in the individual's place of work. Both examinations should include questions/tasks in all seed sampling aspects that the sampler will work with.

Theoretical examination.

This could consist of a number of questions that are designed to cover aspects of seed sampling that cannot be covered in the practical sessions, and should test an individual on as many aspects of seed sampling as possible. The individual's performance should be scored.

Practical examination

This should also be designed to cover as many aspects of seed sampling as possible. For example, it might consist of:

- Seed lot identification/labels
- Sampling of bags
- Sampling of boxes
- Sampling of big bags
- Automatic sampling
- Sample mixing and reduction
- Dispatch of submitted sample
- Automatic seed samplers



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It is recommended that the Authority should use a checklist to record an individual's performance in the practical examinations, and the Authority should score the individual's performance.

The Authority may wish to provide each individual passing the examination with a Certificate or Diploma to confirm their success.

The Authority should keep a record of the examination results to be able to manage any requests for an authorisation.

VIII. AUTHORISATION

After successfully completing their training and examination, the individual may be authorised by the Authority to sample under official supervision.

The Authority in each Member State can decide if an individual's authorisation should include "total sampling" within its remit, or a selection of the sampling activities within the Authorisation. For example, an Authorisation may have some or all of the following:

- Species (all species covered by the Directives or a range of species)
- Manual sampling
 - This may even specify specific equipment or type of sampling
- Automatic sampling
- Mixing and reducing samples
 - This may even specify specific equipment
- Labelling and sealing
- Preparing mixtures
- Access to appropriate sampling equipment
- Carry out sampling according to National and ISTA Rules

It is important that the authorisation should make it clear that the individual must not derive any private gain from sampling.



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The authority can issue a separate authorisation for a sampler to operate an automatic seed sampler or it can be a separate function within an authorisation.

(An Authorisation should include all species covered by the Directives)

Maintaining of the authorisation

Authorised individuals must maintain their proficiency, for example by:

- Taking samples regularly
- Regular training
- Attending refresher courses
- Following sampling rules and guidelines (and Standard Operating Procedures)
- Actively follow-up and resolve any sampling issues (or non-conformities)
- Having a satisfactory relationship between the test results of their samples and check sampling results

The Member State can decide if the authorisation should be for an unlimited time or for a limited time. It is suggested that a period of 5 years could be considered as a reasonable time before the authorisation requires renewal. An authorisation can be for a specific time to strengthen the maintaining of skills.

Withdrawal of an authorisation

The Authority must have a system in place to deal with any samplers who for any reason fail to meet the requirements of the Authorisation. This can be a staged process, for example, by suspending the Authorisation for a set period of time, or if the issue is serious, a complete withdrawal of the Authorisation.

Serious faults and or intentional faults should result in a withdrawal of the Authorisation.

However, if the sampler's mistakes are of a less serious nature, the Authority can put in place a number of measures for corrective action before even suspending the authorisation. This can include:

- Further training
- Supervision by a more experienced seed sampler
- More audits
- More check samples
- Clearer instructions / Standard Operating Procedures.

Should any of these measures prove to be ineffective, the Authority should consider suspension or a complete withdrawal of the authorisation.

IX. USEFUL DOCUMENTATION

Authorised seed samplers should have copies of, or at least access to, documentation that will help with their sampling activities. These documents should include the Authorities official documents that relate to seed sampling or documents of an

authorised company. The documentation should include material used as part of the initial training course, and might include:

- Copies of appropriate Regulations
- Sampling guidance documents
- A job description with key tasks
- Operating procedures and or handbooks
- Information on seed lot sizes and submitted sample weights
- Health and Safety documentation

X. SUPERVISION / MONITORING OF AUTHORISED SEED SAMPLERS

Check-sampling

- The EU Directives requires that a minimum of 5% of seed lots have to be check-sampled by official seed samplers.
- It is recommended that the analysis of the sample taken by the authorised sampler and the check sample should be carried out in the same laboratory (to avoid a laboratory effect in the testing results).
- Testing results of both samples have to be compared to detect if there is possible significant differences which could reflect a problem in the sampling technique.
- For the comparison, Germination capacity, which is an important criteria of the quality of a seed lot, can be used, but other quality results can be used also. Use of statistical tools (eg ISTA tolerance tables, internal statistical tests) is recommended to help with the comparison and the decision-making. When using the ISTA tolerance tables, it is recommended that at least 10% of the samples should be out of tolerance before the Authority takes action against an individual sampler.

Audits

The audit of sampling practice may be considered as the simplest and most effective method to be able to detect a potential non-compliant sampling practice of an individual.

An Authority should check the following points as a minimum:

- Proof of a system of skills maintenance (eg date of the last training session (internal or external)),
- sampling material used,
- Standard Operating Procedures or other work instructions available to the individual
- On-site observation of a sampling operation
- Labelling and sealing

Regular re-examinations

Regular re-examinations of individuals, either in the workplace or somewhere else that is suitable can be an effective method of determining the seed sampling ability of the individual.



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XI. GUIDANCE ON AUTOMATIC SEED SAMPLERS

It is recommended that Authorities follow the ISTA protocol for the approval of automatic seeds samplers in order to check the compliance and to test the reliability of the device prior to it being used in the certification programme.

This protocol also provides requirements for an annual check of the equipment in the form of an audit.

Although EU directives indicate that the proportion of check sampling does not apply to automatic sampling, it is recommended that the Authority monitor the automatic sampler during the period of seed production in order to verify that the automatic device is still reliable, and seed lots are labelled and sealed correctly. This should be carried out taking manual samples on a number of seed lots and comparing the test results with those obtained from the samples taken by the automatic sampler.



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Sampling flowchart

