SPISE
Standardized Procedure for the Inspection of Sprayers in Europe

ADVICE

compiled by:
SPISE Technical Working Group 5

Advice for inspector’s training
Advice for functional inspection of special spraying trains and other vehicles for chemical weed control on railways and public roads

This document has been compiled by the SPISE Technical Working Group 6.

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1 INTRODUCTION

In the Article 8 of the EU Directive 128/2009/EC it is foreseen that Member States shall ensure that pesticide application equipment (PAE) in professional use shall be subject to inspections at regular intervals. Each Member State shall establish certificate systems designed to allow the verification of inspections and recognize the certificates granted in other Member States. One of the prerequisite for such mutual recognition of inspections is a minimum specification for training of inspectors.

During the SPISE workshops in 2012 and 2014 were presented surveys on how training courses of sprayer inspectors are performed throughout Europe. At that time the training has considered national testing protocols or inspection according to the norm EN 13790. Course length, course content and examination procedures vary between countries. This can be explained by some different factors; the basic training or professional education of the staff that shall be trained in inspection of PAE varies. Some countries have an education of mechanic for agricultural machinery – in other countries such training does not exist. The purpose of the inspection of PAE varies. Countries may focus on inspection of the sprayer or inspection combined with advising the owner, repairs, upgrading or calibration of the equipment.

A result of SPISE workshops has been that it has not been considered possible to give recommendations for a common course plan or course length. However, the analysis shows that main part of countries has basic training courses of 3-4 days combined with exams that are a combination of written and oral exams sometimes with performance of a complete inspection. Trainings are performed by authorities, institutes or staff with some national approvals. Additional to the basic training courses several countries have regular refresher training. The time intervals vary between annual to five years. In the perspectives that several countries have no previous activities in inspection of PAE and that recently new standards for inspection of sprayers in use are published, EN ISO 16122 – series, there is a need for information on the aspects of training of inspectors.

Based on discussions in SPISE workshops and work in SPISE TWG, SPISE TWG 5 has developed SPISE Advice to identify topics that may be considered as relevant in examination and the training of Inspectors of PAE. It is expressed in general terms to be applicable in all situations independent on kinds of equipment, local regulation etc.
2 BASELINE FOR INSPECTOR’S KNOWLEDGE

Criteria for the basic knowledge of inspectors of PAE exist in different countries. Essential parts are listed below as SPISE proposals on demands on inspector’s knowledge:

The inspector shall:

- have participated and be approved in a recognized training course
- have knowledge of the organizational aspects of inspection and testing procedure
- be able to carry out the test safe and without pollution of the environment
- have sufficiently knowledge of the functioning of the sprayer and requirements for an effective and efficient execution of the inspection
- be able to interpret the technical data required for the testing independently and in a correct manner
- be able to carry out the inspections, function tests and measurement independently and in a correct manner
- be able to operate the necessary testing equipment and to interpret the measured values in the correct manner
- be able to use independently and in the correct manner the valid National approval - and rejecting criteria for the sprayers
- be able to fill in independently the test forms in the obligatory manner
- be able to formulate a correct, clear, objective and well founded recommendation on how the sprayer can fulfill the requirements to the owner of the sprayer
3 EXAMINATION CONTENT IN BASIC COURSES

In order to assure that the inspectors have sufficient knowledge an examination of the participants in training courses is necessary. The purpose of the examination is to verify the level of knowledge. This knowledge can be achieved independently from course length or course content, depending on the local required background education or training. SPISE TWG has identified topics that can be relevant to assure the same level of knowledge between countries.

An official exam comprising questions from the proposed topics for exam should be arranged. Preferable is combined exams, including theoretical questions (oral/written) with practical exercises (complete inspection of at least 1 equipment of relevant type)

The proposed head topics to be considered in examination:

- Environmental, technical and biological background motives for inspection
- Basic knowledge on PAE
- Health and safety for inspection staff
- General and local legislation and administrative procedures
  - training and approval procedure of inspectors
  - approvals of workshops
  - Bureaucratic procedure for reporting of result of inspection
  - Requirements on inspection site
  - Requirements on test equipment and calibration of test equipment
- The inspection of PAE
  - requirements on PAE
  - test methods
  - use of test equipment
- The practical inspection on PAE
- Identifying defects on PAE
  - advise how to repair defects or upgrading of the equipment

Additional in case the inspection may be combined with adjustments and calibration:

- Knowledge in spraying including nozzle choice advising, new technologies + identifying DRT
- Calibration of sprayers, adjustment, nozzle selection
4 BASIC COURSE

The length of course, the course content and the relative size of the different topics, could vary depending on national or local situation and on e.g. dominating crops or types of used equipment. In the following chapter is given proposal for topics, could be called also course modules that may be relevant. The content should reflect the needs according to the requirements in the examination. Course length and emphasis on different topics is also depending on the background training of the staff.

The proposed topics can be considered as “modules” connected to relevant parts of the training. They have no priority order and do not specify details about the content, only the topics and subtopics that may be relevant in the basic courses.

Fig. 1 – Depending on national or local situation the training content can and should vary. (Photos: BTSF course)
4.1. THEORY & PRACTICES

The total time of the course should be dedicated to include theoretical and practical activities to assure that participants get familiar with the topics, the inspection procedure and the test equipment.

Fig. 2 – Practical activities around a mist blower to deepen the learned (Photo: BTSF course)

4.2 COURSE TOPICS/COURSE MODULES

4.2.1 Environmental-technical and biological motives for inspection

- Risks for pollution of water courses and other surrounding environment
- Distribution influence on applied dose
- Used amount of PPP
- Risks for residues in food
- Risk for environment

4.2.2 Basic knowledge on sprayers

- Basic on machines working principles
- Influence of different parts on the equipments working mode and results
- Defects influence on environment and biological results
4.2.3 General and local legislation and administrative procedures
- training and approval procedure of inspectors
- approvals of workshops
- bureaucratic procedure for reporting of result of inspection
- Requirements on inspection site
- Requirements on test equipment and calibration of test equipment
- National quality control or certification system for the workshops and inspections

4.2.4 The inspection of PAE
- requirements on PAE in inspection
- test methods
- available test equipment
- use of test equipment
- test report and reporting (protocols, stickers, etc)

4.2.5 Theory and practice on inspection of different equipment/modules
- Emphasis on equipment due to national or local conditions depending on which kind of equipment is mainly used. E.g.:
  - Boom-sprayers
  - Sprayers for bush and tree crops
  - Fixed and semi-mobile sprayers.
  - Seed-treatment equipment
  - Knapsack sprayers
  - Granular spreaders
  - Etc…

4.2.6 Health and safety for inspection staff
- Importance of clean working conditions
- Risks for test operators
- Relevant personal protective equipment

4.2.7 Test equipment and calibration of test equipment
- Relevant available test equipments
- Procedures for regular calibration or official control of test equipment
4.3 ADDITIONAL IN CASE THE INSPECTION MAY BE COMBINED WITH ADJUSTMENTS AND CALIBRATION

- Knowledge in spraying including nozzle choice advising, new technologies and identifying drift reducing technique
- Calibration of sprayers, adjustment, nozzle selection

5 REFRESHER COURSE

According to SPISE surveys, refresher courses are used as a forum for inspectors to meet and exchange experiences. The two-way communication between the responsible organisation or authority and the inspectors and workshops has shown to be fruitful. Information is given about news in regulations, test methods and test equipment. Discussions about detailed problems in the test procedure or on certain equipment will result in needs to define advice or changes in regulations. News on the market regarding PAE or components is transferred. In order to assure a harmonised performance of the inspection it may be relevant to repeat regulations and test procedures.

5.1 COURSE TOPICS

- Inspectors experiences
- Reporting, test equipment, test procedures, special problems
- News on regulations, test procedure, test equipment, reporting system
- News on sprayer market (Machine types, sprayer models, nozzles)
- Refreshing on
  - Regulations
  - Test procedure
  - Test equipment
  - Test protocol
  - Reporting of inspection

When needed. Second day or additional day

- Detailed training for additional PAE depending on local needs or new available methods, e.g.
  - Fixed and semi mobile sprayers
  - Granular spreaders
  - Railways sprayers
  - Aerial spraying
  - Seed treatment
- Test methods and requirements in theory and practical training
- System for reporting to authorities
6 REFERENCES


SPISE – Standardized Procedure for the Inspection of Sprayers in Europe
Established in 2004 by founding members from Belgium, France, Germany, Italy and the Netherlands, the SPISE Working Group aims to further the harmonisation and mutual acceptance of equipment inspections. In regular meetings, several Technical Working Groups (TWG) prepare advice about the items taken into account by the EU Directive 128/2009/EC but still not considered in the actual ISO/CEN Standards. The present document is intended to provide technical instructions and describes a procedure which is not mandatory but can be voluntary adopted in the course of inspection or calibration.

Further information can be found at http://spise.julius-kuehn.de

An electronic version of this document is freely available at https://ojs.openagrar.de/index.php/spise/issue/archive

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