

Training of inspectors for the periodic inspection of spraying equipment in a system of authorised mechanic workshops

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Summary

Within a system of authorised mechanic workshops personal must be well trained in order to conduct the inspection according to technical requirements. The presentation outlines the start training program for inspectors and organisation and contents of successive courses in order to keep the personal up to date with technical and regulatory aspects. The first day of the course deals with legislation, technical requirements, test stands, responsibilities, authorities, etc.. The second day is practical and contains information about sprayer function, nozzles, sprayer cleaning and other technical aspects. There is a specific program for field sprayers and air blast sprayers. A special course is offered for the inspection of spray gun equipment. The training course ends with a written test and an interview. Mechanic workshops have to apply for official stickers annually and have to prove that the inspectors are trained and have passed the test successfully.

Introduction

Within a system of authorised mechanic workshops, personal must be well trained in order to conduct the inspection according to technical and legal requirements.

In Germany a system of authorised mechanic workshops is established while e.g. in Belgium state employed persons carry out the sprayer inspection.

In Germany the federal Plant Protection act made sprayer inspections mandatory for air assisted sprayers in 2002, for field sprayers even earlier. The states (Länder) are responsible with respect to establish administration and the conduct of inspections for sprayer in use and have established the organisation according to the state structures (Koch et al., 1998).

In Rheinland-Pfalz the administration in terms of authorisation of workshops, supervision of the inspection quality as well as supervision of official inspection stickers on sprayers in use is the responsibility of the ADD (Aufsichts- und Dienstleistungs-Direktion, Trier). In addition the DLR RNH (Dienstleistungszentrum Ländlicher Raum Rheinhessen-Nahe-Hunsrück, Bad Kreuznach) is designated as the competent authority responsible for the periodical function check of testing equipment and training of test operators (Anon, 1993).

DLR RNH organises training of test operators

1. Annually offered training program for beginners meaning for persons who want to get the certification as an authorised inspector.

Annually we have about 20 – 30 beginners and offered 3-day-course which is structured in:

Day 1: general aspects, guidelines, legislation, responsibilities, application for authorisation

Day 2: Field sprayer - practical issues, test stand, knowledge about sprayers and sprayer function, nozzles, drift and drift reduction, sprayer cleaning, electronic devices, ...

Training at test stand, operation of test equipment

Day 3: air blast sprayer - practical issues, test stand, knowledge about sprayers and sprayer function, fan types, nozzles, drift and drift reduction, sprayer cleaning, ...

Training at test stand, operation of test equipment

An extra course is organised for persons who are certified only for spray gun equipment.

Persons who apply only for field sprayer inspection or air assisted sprayer inspection respectively have to attend day one and two or day one and three. Those who want to get a certificate for both sprayer types have to attend the full 3-day program. The course ends with a multiple choice test in writing for each sprayer type. After the written test candidates are interviewed in order to find out misunderstandings and get an impression of their understanding of the relevant issues.

Usually candidates get the information about a course via personal invitation or from the mechanic workshop where they are employed because the workshops have to have trained personal. Nevertheless each person has to apply itself for the course because the certificate is issued to the person not to the workshop. This has been decided because mechanics may change their employment and the certificate will be accepted in any other state.

Persons who want to attend the course are asked to be prepared for the course. It is well known that persons very often will not finish the course successfully in case they have no technical understanding and experience with sprayer technique. Thus as prerequisite to attend the course only persons with a technical education and knowledge in agricultural machinery are accepted.

The training course ends with a test in writing with 20 questions which is a multiple choice test.

Questions cover aspects like:

- Technical/functional issues
- Test equipment
- Conduct of test
- Technical requirements
- Administration/responsibility
- Organisation
- Knowledge about nozzles, drift, drift reduction, environmental aspects

The test in writing is followed by an interview and the final decision about the candidate.

After passing the test successfully the candidate will receive a certificate which enables the person to carry out inspections of sprayers in Germany, i.e. this certificate is accepted in any other state in Germany. The mechanic workshop has to demonstrate to the authority that certified personal is employed and carries out the sprayer testing.

2. Refresher courses are offered in 3-4 years interval, decided by DLR RNH and ADD, depending on novel procedures, legislation and requirements

Certified persons have to attend the refresher courses. An example of the refresher course program could be:

Responsible Authority (ADD)

- Evaluation of reports
- General information on the authorising procedure

Competent Authority (DLR RNH)

- New legal requirements
- Conduct of sprayer inspection according to JKI-Guideline 1-3.2.1 (ISO)
- Handling of test fluid
- Procedure of the regular inspection of test stands (2-year interval)
- New technical developments, nozzles, equipment and procedure of sprayer cleaning, electronic devices

Herbst Prüftechnik:

- Software for sprayer inspection and for spray scanners
- How to use electronic test stands for field and air blast sprayers

The program depends on recent developments, new requirements, test standards, environmental aspects, drift reduction, nozzles, of sprayer cleaning, etc.

Presently the number of trained inspectors is:

for field sprayers	172
for orchard/vineyard sprayers	154
for gun sprayers	22

Conclusions

Training and authorisation of test operators within a system of authorised mechanic workshops have been proved itself in practice as an appropriate measure to fulfil the legal requirements of the mandatory sprayer inspection. The legal obligation of the sprayer inspection is a function test. Crop adapted calibration, crop specific sprayer adjustment or training of applicators is not included. Such issues might be due to extension and advice activities and shall not be implemented into the mandatory sprayer tests. The training program in the first step ends with a test and a certificate which enables the person to do inspections in Germany. Refresher courses are offered in 3-4 year intervals depending on what aspects and developments have to be updated.

References

- ANON, 1993: Landesverordnung Rheinland-Pfalz über die Kontrollstellen zur Prüfung von Pflanzenschutzgeräten, GVBl 1993, S. 343
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Fig. 1. Certificate of a mechanic (example), showing that the person successfully passed the training and the test.