

## The necessity of a harmonized procedure for sprayers inspectors training: the Italian activity

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### Summary

European Directive on Sustainable Use of Pesticides requires that the people making inspections of sprayers in use have an official license, recognized at national level, released by the competent Authority.

In Italy, Authorities responsible of training and upgrading of sprayers inspectors are Regional and Provincial administrations. They make this job in collaboration with research institutes that provide qualified teachers.

With the aim to homogenize in the whole country the activity of training and licensing of sprayers inspectors the rules for training courses and the criteria for releasing licenses have been defined by ENAMA. Training courses shall have a duration of at least 40 hours subdivided between theory (60% of total time) and practical (40% of total time). Topics treated during courses are: criteria to apply pesticides, main sprayer types used in agriculture and relative components, test methods and equipment used to carry out the inspections of sprayers in use and to adjust them. The exam to get the inspector license shall consist in: a) filling of a questionnaire with multiple answers (at least 80% of answers have to be correct); the questions are selected among a database approved by ENAMA Working Group; b) oral test; c) practical exam consisting in the complete inspection of one sprayer.

In order to guarantee the same quality level of sprayers inspections in the different European countries and to guarantee the mutual recognition of inspections made it is considered necessary to reach in short terms an agreement to harmonize the activity of training, licensing and upgrading of sprayers inspectors across Europe.

### Introduction

European Directive 2009/128/EC (Art. 8) requires that: “pesticide application equipment in professional use shall be subject to inspections at regular intervals”. The quality of the result of a sprayer functional inspection is closely related to the knowledge and the professionalism of the person that has made the inspection. From these persons depend also the inspection activities success especially in terms of feedback that the farmer could have from it. For these reasons it is very important that these people have access to appropriate training bodies appointed by the competent authorities.

According to the results of a survey made within SPISE in 2009, one of the main requirements that workshops were asked for operating as authorized sprayers inspection centres was an adequate education background of the technicians (Balsari, 2009). Nevertheless the contents of this education background were not homogeneous among Member States and also the duration of the specific training courses for inspectors was different within a range between 10 and 60 hours.

An insufficient qualified training of technicians licensed for the inspection of sprayers in use could lead, in some cases, to a not appropriate execution of the inspection and therefore could originate problems for mutual recognition of inspection results between EU Member States.

### The Italian situation

Actually in Italy, Authorities responsible of training and upgrading of sprayers inspectors are Regional and Provincial Administrations and ENAMA (National Board for Agricultural Mechanization). They make these activities in collaboration with research institutes (mainly University) that provide qualified teachers.

With the aim to harmonize the activity of training and licensing the sprayers inspectors, the rules for training courses and the criteria for realizing licenses (Fig. 1) have been defined by the National Technical Workgroup (NTW) coordinated by ENAMA and DEIAFA -Torino University (Balsari *et al.*, 2007 and Balsari *et al.*, 2010).

Inside the NTW has been decided that, to be admitted to the training courses for getting the sprayer inspector license it is necessary to have at least a secondary school license. Teachers of the training course shall be highly qualified and selected among University personnel, technical managers of the Regional administrations and sprayers expert.

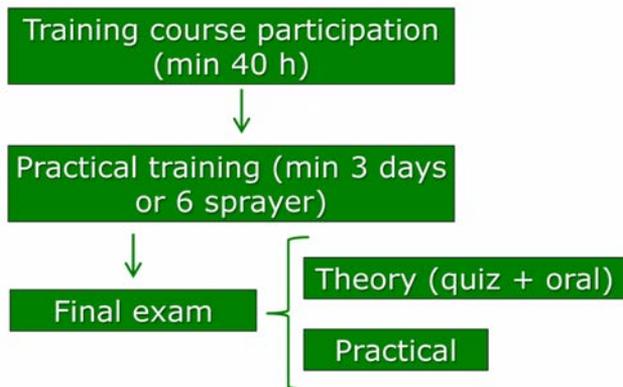


Fig. 9. Steps of the inspectors training courses.

The training course shall be of 40 hours at least and divided between a theoretical part (about 60% of total time) and a practical one (Fig. 2). Items that must be treated during the training courses and that are even defined at national level are summarised in Table 1. Management of the hours for each single item is up to organiser of the course, times values reported in the table are just indicative.



Fig. 10. Training course for inspectors: practical (picture TESAF – Padova).

Tab. 1. Topics of the course defined by Enama Technical Working Group

TOPIC		HOURS
General criteria that governs the distribution of plant protection products and their influence on the effectiveness of application, environmental safety and operator safety.	THEORY	3
Different types of sprayers: classification, components, features, criteria of choice	THEORY	8
Main types of nozzles used on sprayers.	THEORY	2
Different levels of pulverization and spray patterns obtained with different types of nozzles; relationship between flow rate and pressure: (+ practical exercises).	PRACTISE + THEORY	3
Main sprayer components, functionality of hydraulic circuit and description of possible operating functional problems of sprayers	PRACTISE	6
Equipment and test benches used for functional inspection: specifications and minimum requirements	THEORY	5
Parameters to examine during functional inspection and their limits of acceptability	THEORY	3
Practical examples of how functional inspections of orchard and field crop sprayers are carried out	PRACTISE	8
How functional inspection of orchard and boom sprayers is carried out	THEORY	2
<b>TOTAL</b>		<b>40</b>

Upon completion of the course each candidate must perform a practical training (specific for each type of sprayers- field, orchards, other- for which he has request the license) with a minimum duration of 3 days (or at least 6 sprayers inspected, Fig 3).



Fig. 11. Practical training (picture DEIAFA – Torino).

The verification of the knowledge acquired by the technicians who followed the training course is carried out through a final exam which is divided in three parts:

1. filling of a questionnaire (at least 30 quiz) with multiple answers (at least 80% of answers must be correct); the questions are selected among a database of 137 questions defined by ENAMA NTW (Fig. 4);
2. oral test: mainly focused on wrong answers given in the questionnaire
3. practical exam: a complete inspection of a sprayer (one for each type for which the license is requested, Fig. 5)



Fig. 12. Final exam: filling questionnaire (picture: CRA-ING – Monterotondo – Roma).



Fig. 13. Final exam: practical examination (picture: DEIAFA - Torino).

The overall assessment of the candidate and therefore the delivery of the inspector license is up to an official Commission of three persons that shall include at least one of the teachers who made the training course. The inspector license is conferred only to the candidates who passed the final exam.

The inspector license does not expire unless suspended or revoked:

- due to the established irregularity of inspector actions;
- as a result of repeated and unjustified absence at refreshing courses organized by Regional Administrations.

All authorized inspectors (and workshops) are listed in the national database ([www.centriprovairroratrici.unito.it](http://www.centriprovairroratrici.unito.it)).

Following the guideline defined by the National Technical Workgroup coordinated by Enama and DEIAFA, 15 sprayer inspector training courses have been carried out in Italy until 30 April 2012.

## Conclusion

An appropriate inspectors training is mandatory to have a good sprayer functional inspection. The Italian experience could be a useful starting point to harmonize, inside the SPISE Community, the activity of training, licensing and upgrading of sprayers inspectors across Europe in order to guarantee the same quality level of sprayers inspections in European countries and the mutual recognition of the inspections made.

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