

## Session 3: The inspections shall verify that pesticide application equipment satisfies the relevant requirements (according article 8/4)

### Introduction paper

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### Summary

The inspection of pesticide application equipment (PAE) according to Annex II of the Framework Directive requires mandated EN standards (article 8/4).

Standards are needed for all pesticide application equipment used by professionals. They should detail the requirements to be fulfilled during the inspection procedure to ensure the protection of health and safety and the environment. Standards for inspection of pesticide application equipment already exist for field crop sprayers and air-assisted sprayers for bush and tree crops (EN 13790-1 and 2), which are the main types of equipment used by professionals. However, concerns exist with this standard in so far as it specifies that the measurement of transverse distribution can be achieved using two different methods (i.e. measurement on patternator or flow rate measurement) which can lead to different results for one same sprayer.

### Introduction

- What harmonised standards are available to this day
- What standards are under developments
- Carry out inspections without harmonised standards

Standardisation mandate addressed to CEN for the development of a series of standards on inspection of pesticide application equipment in use. This mandate concerns the development of standards concerning the inspection of pesticide application equipment used by professionals. Equipment in compliance with standards developed in accordance with the procedure provided for in article 6(3) of Directive 98/34/EC shall be presumed to comply with the essential health and safety and environmental requirements. CEN standards would contribute to harmonisation of inspection systems among Member States and facilitate mutual recognition of control certificates for application equipment. Ongoing discussions in the European Parliament and the Council for the adoption of the proposed Framework Directive (since 24th of November 2009 Directive 2009/128/EC) do not challenge the principle of having regular inspections of pesticide application equipment used by professionals. The only outstanding uncertainty regards the actual list of types of equipment for which no derogation from the inspection provision may be obtained.

#### Article 8/4 (Inspection of equipment in use)

The inspections shall verify that pesticide application equipment satisfies the relevant requirements listed in Annex II, in order to achieve a high level of protection for human health and the environment. Pesticide application equipment complying with harmonised standards developed according to article 20(1) shall be presumed to comply with the essential health and safety and environmental requirements.

#### Article 20/1 (Standardisation)

The standards referred to in article 8(4) of this Directive shall be established in accordance with the procedure provided for in article 6(3) of Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services.

The request for developing these standards may be established in consultation with the Committee referred to in article 21(1)

### **1.1 CEN was requested to**

A. Develop European standards for the inspection of all types of equipment used by professionals that will enable equipment to comply with the essential health and safety and environmental requirements listed in Annex 2 to the Framework Directive on the sustainable use of pesticides. The most common other types of pesticide equipment to be scrutinised belong to the following main categories:

- Tractor mounted, trailed or self-propelled sprayers (including spray trains).
  - Aircraft sprayers (airplanes/helicopters + mixing station).
  - Handheld or portable sprayers.
  - Others (dusters, foggers, granules applicators, seed treatment equipment, large-scale batch treatment, large-scale continuous application (conveyor belt), mist blowers/generators, wipers, etc.).
- Furthermore, standards for specific important spare parts of the application equipments like the nozzles could also be developed under this mandate, if deemed necessary.

B. Analyse whether the technical uncertainties that arise from EN 13790 may be easily solved. If this was deemed to be the case, a revision of the standard may be needed.

### **2. What harmonised standards are available to this day?**

These harmonised standards are not available now, at best only for field crop sprayers and air-assisted sprayers through the medium EN 13790, Parts 1 and 2. What standards are under developments. The work have been organised according to the CEN procedures on establishing CEN standards. A technical committee on tractors and machinery for agriculture and forestry has already been established in CEN to develop EN 13790 Parts 1 and 2. ISO standards developed for some equipment should also be taken into account in the execution of the mandate.

CEN have been provide the Commission with a detailed and prioritised work programme and a timetable for the adoption of the standards needed within three months of the acceptance of the mandate. The European standards are to be adopted within three years from acceptance of the mandate. At this time, the three linguistic versions (DE, EN, FR) must be available as well as the correct titles in the other official Community languages. CEN will keep the Commission informed at least once a year following the submission of the work programme of the measures taken to execute this mandate.

The standard should be developed by representatives of operators in the supply chain and public authorities. Representatives of European associations have shown considerable interest in the project (i.e. SPISE). As appropriate, CEN will invite the representative organisations of consumers' interests (ANEC), environmental protection (ECOS), workers (ETUI-REHS) and small and medium size enterprises (NORMAPME) to take part in the standardisation work. Representatives of farmers' organisations (e.g. COPA-COGECA) and trade unions representing agricultural workers should also be involved in the process.

### **3. Carry out inspections without harmonised standards**

It has to be clarified how PAE inspections according to article 8(1) of Framework Directive without mandated standards can be carried out. Example from the Czech Republic is mentioned in Appendix 1.

#### **3.1 Field sprayers and air-assisted sprayers**

The best way for an uniform inspection of PAE through the EU member states is use of EN 13 790 requirements for field sprayers and air-assisted sprayers until this standards will be prepared as harmonized.

#### **3.2 Aerial application equipment, seed treaters, railway application equipment**

Some of member states use for inspection of aerial application equipment, seed treaters, railway application equipment their own requirements, which are result from national standards.

### **Appendix 1 – Example of national requirements from the Czech Republic**

The technological requirements and the technological procedure of the inspection

#### **4. Special requirements for seed dressers**

##### 4.1 General technical conditions

4.1.1 Seed dressers shall reply to operational documentation, pertinent changes shall not oppose to right application of the plant protection products for seed dressing.

4.1.2 All devices for regulation shall work reliably.

##### 4.2 Dressing dosage.

4.2.1 Device for dressing dosage shall reply to operational documentation and shall work reliably and there shall be no leakages.

4.2.2 Deviations of the real dressing dosage shall not exceed  $\pm 7$  % from the average dosage from seven repeated measurements. This average dosage shall not deviate more than  $\pm 10$  % from the adjusted dressing dosage.

##### 4.3 Seed dosage.

4.3.1 Device for seed dosage shall reply to operational documentation and shall work reliably.

##### 4.4 Exhaust equipment.

4.4.1 Exhaust equipment, if provided, shall work reliably and there shall be no leakages.

4.4.2 Covers of the moveable parts of the equipment shall reply to operational documentation and shall be not damaged.

#### **5. Special requirements for aerial pesticide application equipment**

5.1 Agitation: A clearly visible recirculation shall be achieved when spraying at the nominal pump speed or drive of the agitation, with the tank filled to the half of its nominal capacity. Inlets to every nozzles are closed.

##### 5.2 Spray liquid tank, pipes and hoses and regulation.

5.2.1 There shall be no leakages from the tank, pipes or hoses and every parts of the regulation when tested at the allowable working pressure. Dripping from the nozzles up to 10 drops from one nozzle per 5 s is permitted.

5.2.2 Pipes, hoses and every parts of the regulation shall work reliably.

##### 5.3 Dosage.

5.3.1 Dosage range shall reply to operational documentation. The deviation shall not exceed  $\pm 10$  %.

5.3.2 Deviation of the second batch of the dosage shall not exceed  $\pm 5$  % from the average dosage from three measurements. Measurement is done three times at the minimum working pressure and three times at the maximum working pressure.

### **B. The technological procedure**

#### **4. Seed dressers**

4.1 The compliance with the requirements defined in the sub-section A. points 4.1.1 and 4.1.2 of the regulation and special devices of the seed dresser shall be checked by inspection and function test.

4.2 The compliance with the requirements defined in the sub-section A. points 4.2.1 and 4.2.2 of the dressing dosage shall be checked by inspection, function test and measurements.

- a) For measurement according to requirements defined in the sub-section A. points 4.2.2 shall be on continual seed dressers verified patency of the seed dresser by the seed, namely by the assignment of the seed amount went through the dresser at some time. It's repeated three times, final rate is the arithmetic mean of this three measurements expressed in ton per hour. Then is dressing dosage powered on and after stabilisation is the dressing entrapped to the suitable container for 60 seconds. It's repeated seven times in ca 20 minutes. If the dressing is diluted, its batch is derived from its volume in the dressing liquid.

b) For measurement according to requirements defined in the sub-section A. points 4.2.2 shall be on discontinual seed dressers entrapped the dressing for one batch of the seed. It's repeated seven times at least. If the dressing is diluted, its batch is derived from its volume in the dressing liquid.

4.3 The compliance with the requirements defined in the sub-section A. point 4.3.1 of the seed dosage shall be checked by inspection and function test.

4.4 The compliance with the requirements defined in the sub-section A. points 4.4.1 and 4.4.2 of the exhaust equipment, if provided, shall be checked by inspection and function test.

#### **5. Aerial pesticide application equipment**

5.1 The compliance with the requirements defined in the sub-section A. point 5.1 of the agitation shall be checked by inspection and function test.

5.2 The compliance with the requirements defined in the sub-section A. points 5.2.1 and 5.2.2 of the tank, pipes and hoses and regulation shall be checked by inspection and function test.

5.3 The mechanisation mean shall be got in the lowest recommended work pressure and the flow rate shall be measured for 15 seconds after stabilisation of the output three times at least. Then the mechanisation mean shall be got in the highest recommended work pressure and the flow rate shall be measured for 15 seconds after stabilisation of the output three times at least too. Calculated arithmetic means shall be compared with the requirements defined in the sub-section A. points 5.3.1 and 5.3.2.

#### **4. Inquiry concerning relevant requirement for PAE in use**

Inquiry was prepared in connection with 3rd SPISE workshop realization and sent to the Member States experts. There were received answers from 16 countries. Questions stated in the inquiry table and the MS answers:

1. Is at present inspection of PAE carry out according national regulation (YES/NO)  
**YES** – BE, CZ, EE, DE, IT, LT, NO, SUI, NL, SR, SK, F  
**NO** – PT, IRL
2. Is at present inspection of PAE requirements carry out according to EN standard 13790 (YES/NO)  
**YES** – BE(95%), CZ, EE (not fully), DE, IT, LT, NO, PT, SR, SUI, NL, SK, F  
**NO** – IRL
3. PAE satisfies the relevant requirements listed in Annex II of FD (YES/NO)  
**YES** – CZ, EE, DE, IT, LT, NO, PT, NL, SK  
**NO** – BE, IRL, SR, SUI – what is relevant?
4. Inspection under national requirements (not covered by the EN standards):
  - national standards YES/NO (if yes, specify)
  - other requirements (specify)**YES** – CZ, EE, NO, SK, NL  
**NO** – DE, IRL, IT, LT, PT, SR, SUI

Only short comments were received from:

SE – the Swedish system inspection should be done according to the EN 13790 and national rules simultaneously. Currently the system is voluntary.

RO – PAE in use are not tested or inspected currently.

HR – no regulation in the Republic of Croatia that obliges the control of sprayers. Establishment of this system is planned in 2010.

#### **5. Types of pesticide application equipment covered by article 8 of the FWD**

##### **5.1 Tractor mounted, semi-mounted or trailed sprayers**

Design: machine mounted on or trailed by the tractor; powered by the tractor (mechanical and/or hydraulic power).

Main components: tank (up to 6.000 / 8.000 l or more), pump, boom or fan with nozzles and control systems.

MD 2006/42/EC: covered as 'interchangeable equipment'.

Applicable standards: EN 907 then EN ISO 4254-6 (safety); EN 12761 (environment related requirement for new sprayers).

### 5.2 Self-propelled sprayers

Design: self-propelled machine with integrated engine to power the moving and working functions. Main components: chassis with engine, operator station, drives and control systems, tank (up to 6.000/8.000 l or more), pump, boom or fan with nozzles.

MD 2006/42/EC: covered as 'machinery'.

Applicable standards: EN 907 respectively EN ISO 4254-6 (safety); EN12761(environment related requirements for new sprayers).

### 5.3 Aircraft sprayers

Design: airplane or helicopter specifically designed for pesticide application or (and normally) retrofitted with pesticide spraying equipment (pump, pressurised tank, boom with nozzles, controls).

MD 2006/42/EC: spraying equipment itself is covered as 'machinery' (according to article 2 (a), 3rd indent: an assembly -- mounted on a means of transport).

Applicable standards: no.

### 5.4 Handheld or portable sprayers

#### 5.4.1 With integrated motor.

Design: self-contained portable or handheld sprayer.

Main components: tank, internal combustion engine or electric motor, pump, spray lance with nozzle.

MD 2006/42/EC: covered as 'machinery'.

Applicable standards: EN ISO 28139 (draft) (environment and safety related requirements).

#### 5.4.2 Manually driven with a pressure chamber.

Design: self-contained portable or handheld sprayer with a manually operated pump (activated either prior to or during spraying).

Main components: tank, pressure chamber, manual lever or piston operated pump, nozzle or spray lance with nozzle.

MD 2006/42/EC: covered as 'machinery' (with respect to the pressure chamber).

Applicable standards: ISO 19932 (only applicable to equipment with tanks > 5 l) (environment and safety related requirements).

#### 5.4.3 Manually driven without pressure chamber.

Design: self-contained portable or handheld sprayer with a manually operated pump without a pressure chamber.

MD 2006/42/EC: not covered.

Applicable standards: ISO 19932 (only applicable to equipment with tanks > 5 l) (environment and safety related requirements).

#### 5.4.4 Application by gravity.

Design: handheld container / tank with outlet (for example, watering can); tank volume up 10 to 20 l.

MD 2006/42/EC: not covered.

Applicable standards: no.

## **Acknowledgment**

Special thanks to SPISE Working Group for support and to Mr. Ganzelmeier for consultations.

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