Introduction to EU legislative framwork and Standards for Pesticides Aplication Equipment

MINISTRY OF AGRICULTURE

Directorate for Food Quality and Phytosanitary Policy

Sector of Phytosanitary Policy

Service for Plant Protection Products

Vlado Novaković, Head of Service

CEUREG FORUM XIX

5th – 6th November 2015

Hotel International, Miramarska 24, Zagreb, Croatia

Information and wide **knowledge**, not only about pesticide, but also about the most suitable conditions for distribution of pesticides, the optimal amount for its application and the **most adequate spraying technique** to be used, **are key factors in the success of any pesticide application process**

Drift and inappropriate working conditions can cause environmental contamination

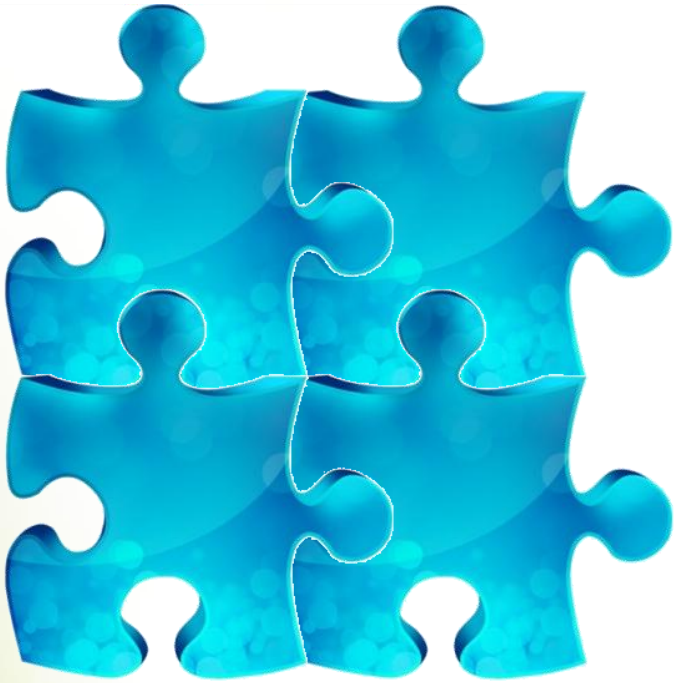
Well adjusted and inspected sprayer, together with training about the process are key elements in the process

Special circumstances and situations need specific care during the PPP use
eg. in residential areas or near water bodies

Operator’s safety MUST be one of the most important aspects to be considered

Pesticide Authorisation (placing on the market) 2009/1107 repl. Directive 91/414

Revision of Machinery Directive (Pesticide application equipment) 2009/127



Framework Directive on Sustainable Use of Pesticides (SUD) 2009/128

Water Framework Directive (WFD) 2000/60/EC

HAVE INCREASED FOCUS ON THE USE PHASE OF PESTICIDES

Legal basis

- **Directive 2009/127/EC – Revision of Machinery Directive sets rules for placing on the EU market new brand PAE**
- **Directive 2009/128/EC on Sustainable use of pesticides sets rules for reduce risks and impacts**
- *Article 8 – Established the rules for inspection of PAE*
- *The interval betveen inspection shall not exceed 5 years until 2020 and shall not exeed 3 years thereafter*
- Annex II of SUD describes health and safety and environmental requirements relating to the inspection of PAE refered to in Article 8
- NAP all MSs
- EU Standards describe in detail how to implement visual and measurement part of inspection of PAE

History of standards on testing sprayers in Europe

Inspection of PAE is not new in Europe

The first inspection of PAE started in 1970s => in Germany
Than in 1980s => in Netherlands and
on collective farms in Eastern Europe

First national Standards/Guideliness were publised

in Germany => by BBA guidelines, then
in Netherlands => by SKL guidelines and
in Belgium => Belgium guidelines

At the end of the 1990s => the work on development of European Standard (EN) started and 2 European Standard were publised in 2003 => Publication of:

EN 13790:1 : Field crop sprayers
EN 13790:2 : Air-assisted sprayers for bush and tree crops

Requirements for brand new sprayers before 2011

Machinery Directive 2006/42

Self Certification - CE mark

EN 12761 series (Part 1, 2 & 3): Agricultural and forestry machinery — Sprayers and liquid fertilizer distributors - Environmental protection

Requirements for brand new sprayers from January 1st 2012

European Directive 127/2009/CE

Self Certification - CE mark

EN ISO 16119 series (Part 1, 2 , 3 & 4): Agricultural and forestry machinery — Environmental requirements for sprayers

European Committee for Standardization

Technical Committee (TC) 144
"Tractors and machinery for agriculture and forestry"
Working Group (WG) 3
"Mobile machines and trailers"

CEN is focused in development of European Standard to define technical characteristics of pesticide application equipment, including procedures for inspection

European Standards for Inspection of Sprayers in Use – EN 13790

EN 13790-1: Agricultural Machinery – Sprayers – Inspection of sprayers in use – Part 1: Field crop sprayers

EN 13790-2: Agricultural Machinery – Sprayers – Inspection of sprayers in use – Part 2: Air assisted sprayers for bush and tree crops

Request from European Commission to CEN

CEN was requested to:

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), mistblowers/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.

Application equipment

European standard for:

- Field-crop sprayers (all types)
- Air-assisted sprayers for bush and tree crops (all types)
- Sprayers on seeders and planters
- High-volume fixed and semi-mobile sprayers
- LVM and fog equipment
- Soil fumigation equipment
- Train-sprayers, aerial equipment
- Band sprayers
- Granulate application equipment
- All types of knapsack or handheld sprayers

Could be developed under the same mandate








Changes in the standards

Harmonized standards
Developed by CEN
Requested by European Commission become ISO standards with world global scope

International Standardization Organization

Technical Committee (TC) 23
"Tractors and machinery for agriculture and forestry"
Subcommittee (SC) 6
"Equipment for crop protection"

Different Working Groups (WG) focused in specific aspects

ISO is focused in development of standards to define assay methods for sprayers

New EN ISO 16119 series

Four parts of new series of standards EN ISO 16119:2014 for placing of the market brand new sprayers is published

Part 1. General – cover health and safeta and environmental	PUBLISHED
Part 2. Horizontal boom sprayers	PUBLISHED
Part 3. Sprayers for bush and tree crops	PUBLISHED
Part 4: Fixed and semi-mobile sprayers	PUBLISHED

Other standards subject to a future part of EN ISO 16119

(Annex A)

- Portable sprayers
- Foggers
- Train mounted sprayers
- Aerial sprayers

New EN ISO 16122 series and others

Four parts of new series of standards EN ISO 16122:2015 for inspection of sprayers in use is published

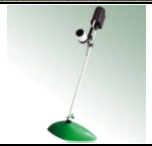
Part 1. General- health and safeta and environmental	**PUBLISHED**
Part 2. Horizontal boom sprayers	**PUBLISHED**
Part 3. Sprayers for bush and tree crops	**PUBLISHED**
Part 4: Fixed and semi-mobile sprayers	**PUBLISHED**
Part 5: Aerial spray systems	**In development**
Knapsack sprayers: ISO 19932-3	**In development**




Application equipment covered by EN-ISO 16122

Different intervals & exemption

In accordance with Article 8, P3a MS may applay different inspection interval and exempt P3b

1 boom sprayers				
2 bush and tree crop sprayers				
3 hand-operated PAE				
4 non-spraying PAE				
5 handheld PAE				
6 knapsack sprayers				
7 PAE of low scale use				
8 train and aircraft sprayers				

Paragraph 3 a: different inspection intervals

Paragraph 3 b: exemption

For other equipment (not to be exempted)

Standard for Air application => EN-ISO 16122:5 in development

For Train sprayers => standard is not available

For Band sprayers/sprayers on seeding equipment => Part 2 of standard may be applied EN-ISO 16122:2

For other equipment (other frequency)

No standards for:
LVM equipment => no standard

Fog equipment => no standard

Soil fumigation equipment => no standard

Granular application equipment => no standard

Injection equipment => is covered by EN-ISO 16122:4

For other equipment (can be exempted)

Knapsack sprayers => is covered by new standard ISO 19932:3 (in development fase)

Standard is not available for => Hand-held sprayers

The main differences between EN 13790 and EN-ISO 16122

13790

- Old Standard has only two parts available: boom sprayers and orchard sprayers
- Environmental aspects were not included
- It is published before SUD
- New developments (i.e. electronics) were not considered

16122

- New Standard has developed four parts, trying to comply with Annex II of SUD
- Part 1–General is developed to considered environmental and safety aspects during inspections
- New inspection procedures have been designed to include new developments in the sprayers
- EN standard (European scope) became ISO standard (world global scope)

Testing equipment

Manometer tester

Horizontal patternator

Pressure measurement

Pump tester

Nozzle flow-rate tester

Vertical patternator

Inspestion of PAE in Croatia

- Until 2014 inspection was carried out by the Advisory Service on a voluntary basis
- Mandatory regular inspections were established in the middle 2014
- Inspections are carried out in accordance with the requirements of Annex II of SUD and the old standards (EN 13790:1 & EN 13790:2)
- MA authorizes testing stations (workshops)
- Testing stations from both public and private sector can be authorised
- Faculty of Agriculture is designated body to provide training for the inspectors

Requirements for testing stations (Workshops)

- Each testing station should have at least 2 employees; 1 employee with at least completed graduate university studies in biotechnology (field agriculture) or in engineering science (field engineering or electrical engineering) as responsible person, and at least 1 technician with at least completed secondary education in agricultural or technical studies in duration of 4 years
- Employees should complete the training conducted by the Faculty of Agriculture in Osijek
- They should have the prescribed equipment to perform inspection of PAE
- They should be mobile (be able to carry out inspection on the owners premises or near their place of residence)

- They should enter and maintain information about the owners of equipment, technical data on equipment and inspection of the equipment in the software application of the MA
- Knapsacks and handheld sprayers are excluded from mandatory testing
- The authorized testing station provides a label to PAE that meets inspection requirements, and issues the report (certificate) on the results of inspection to the owner or user of the PAE
- We have 11 authorized testing stations. Most of them are located in the eastern part of Croatia, where the most PAE is present
- Agricultural inspection controls testing stations and PAE at farm level

Structure of training course

- Training of inspectors is very important to performe inspection in uniforme way
- Both designated training bodies - Faculty of Agriculture in Zagreb and Faculty of Agriculture in Osijek are responsible for the organization of training activities
- The course consists of the initial program of a minimum of 50 hours + additional program of a minimum of 15 hours
- Around 60% of training is theory and 40% of practical lessons
- Exam is oral & written; Included complete inspection of a sorted sprayer

Theory (60%)	Practices (40%)	Exam
• *Inspection* • *Calibration* • *Legislation* • *Best Practices* • *Equipment*	• *Equipment* • *Inspection* • *Software* • *Calibration* • *Safety*	• *Test (oral/written)* • *Practical activity*




Examples of good practice in to make standards more clear

Inspection manual is also interesting tool to perform inspection in uniform way.

Spain **Italy** **Sweden** **Serbia**

Final remarks

We can conclude that:

Standard EN-ISO 16122 for sprayers in use is a useful tool:

- To fulfill Annex 2 of the SUD
- To perform inspections in a uniform way
- To have complete inspections

Standard EN-ISO 16122 can be used for 80% of the used equipment in EU, but for other types, new standards have to be developed

Standard EN-ISO 16122 is based on the history of the existing system, therefore different methods of inspections and measurments are developed to reach the same goal


Thank you for your attention