Fourth European Workshop on

Standardized Procedure for the Inspection of Sprayers in Europe -SPISE 4-

27 to 29 March 2012 - Lana (South Tyrol / Italy)

Session 3:
"The inspections shall verify that pesticide application equipment satisfies the relevant requirements" (acc. 8/4)

V. Polveche & J.P. Douzals

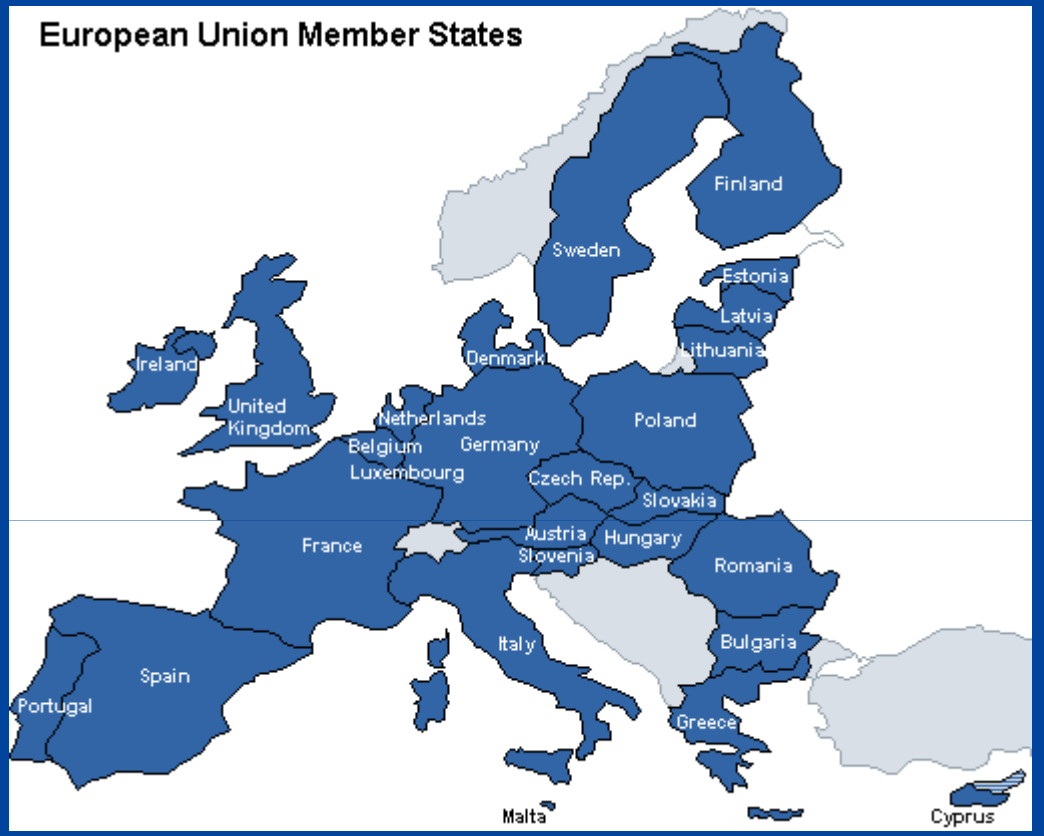
GIP PULVÉS Contrôle des pulvérisateurs

irstea

Principles of the EU Directive enforcement :

Application

Transcription



The transcription describes the national compliance with essential requirements

Existing standards may deliver guidance to specifications, measurements & thresholds

"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 in accordance with Article 20(1) shall be presumed to comply with the essential health and safety and environmental requirements. "

General requirements (Annex II of EU Directive 2009/128/CE)

Main Objectives : Health - Safety - Environment

- Reliability

- Use in conformity : precision in CPP dosage and spraying

- Safe easy and complete filling and emptying, avoid leakages

- Safe handle easy & throughout cleaning. Control and stop immediately from the operator place.

- Simple , accurate and reproductible adjustements

Visual check

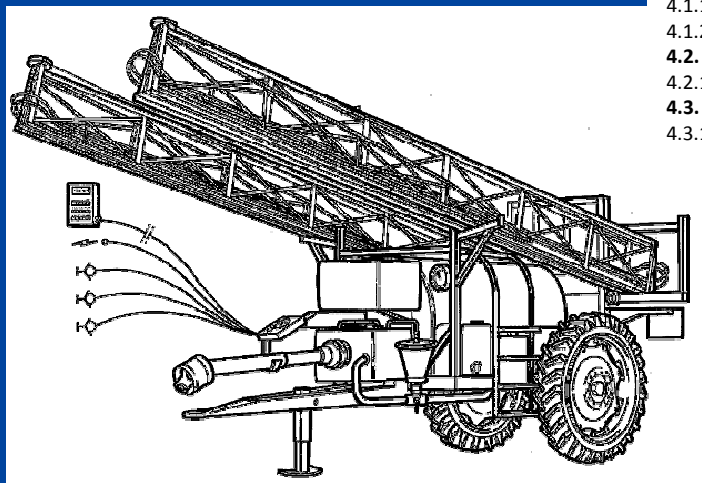
Function test

Measurement

1. PRELIMINARIES

1.1. GLOBAL ASPECT
1.1.1. Sprayer functioning
1.1.2. Clean equipment
1.1.3. Context

1.2. SAFETY ASPECTS
1.2.1. Hydraulic Transmissions between tractor and sprayer
1.2.2. Mechanical transmissions between tractor and sprayer
1.2.3. Mechanical transmissions on sprayer
1.2.4. Attachments to the chassis
1.2.5 Fan discoupling

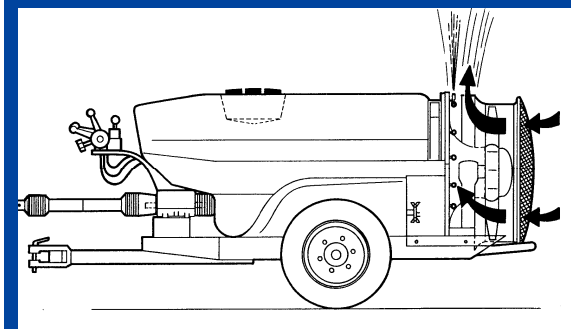


2. GENERAL SHAPE
2.1. 3 POINTS OR HITCH POINT
2.1.1. Deformations
2.1.2. Modifications
2.1.3. Corrosion
2.2. CHASSIS & STRUCTURAL FRAME
2.2.1. Deformations
2.2.2. Default on metallic parts
2.2.3. Default on welds
2.2.4. Corrosion
2.2.5. Backlash
2.3. SPRAY MIX LEAKS
2.3.1. Minor leaks
2.3.2. Major leaks
2.4. SPRAYERTRANSMISSIONS
2.4.1. Hydraulic transmissions
2.5. TIRES
2.5.1. Mounting - Maintenance
2.5.2. Wear

3. PUMP
3.1. GENERAL SHAPE
3.1.1. Oil Leaks
3.2. FUNCTIONING
3.2.1. Pulsations
3.2.2. Air Chamber
3.2.3. Flowrate

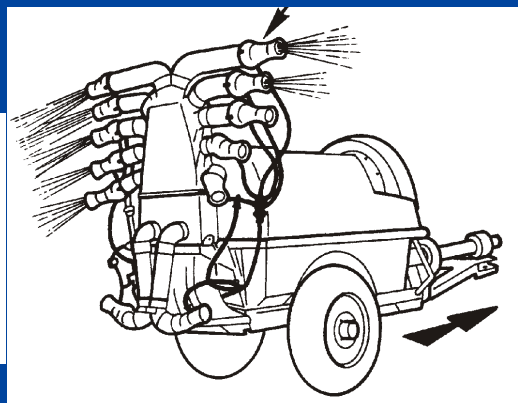
4. SPRAY MIX TANK
4.1. OPENING LID
4.1.1. General shape
4.1.2. Adequation
4.2. TANK LEVEL INDICATOR
4.2.1. General shape
4.3. INTRODUCTION BOWL
4.3.1. General shape

5. MEASUREMENT, COMMAN AND CONTROL DEVICES
5.1. GENERAL SHUT DOWN COMMAND VALVE
5.1.1. General shape
5.2. BOOM SECTION SHUT DOWN COMMAND VALVES
5.2.1. General shape
5.2.2. Calibrated pellets
5.3. PRESSURE CONTROL VALVE(S)
5.3.1. General shape
5.3.2. Functioning
5.4. PRESSURE INDICATOR
5.4.1. General shape
5.4.2. Functioning
5.5. OTHER INDICATORS USED FOR PRESSURE CONTROL
5.5.1. Forward Speed indicator
5.5.2. Flow rate indicator
5.6. OTHER INDICATOR(S)
5.6.1. General shape



6. HYDRAULIC HOSES
6.1. DISTRIBUTION HOSES
6.1.1.General shape

7. FILTERS
7.1. INLET FILTER
7.1.1. General shape
7.2. CENTRAL OUTLET FILTER
7.2.1. General shape
7.3. BOOM SECTION FILTERS
7.3.1. General shape
7.4. NOZZLE FILTER
7.4.1. General shape



8. SPRAYER BOOM
8.1. BOOM STRUCTURE
8.1.1. Deformation on a vertical plan
8.1.2. Deformation on a horizontal plan
8.1.3. Protection of boom end nozzles
8.2. BEHAVIOUR OF THE BOOM
8.2.1. Backlash on joints
8.2.2. Stability
8.2.3. Setting of boom height
8.3. NOZZLE HOLDERS
8.3.1. Distribution
8.3.2. General shape
8.3.3. Functioning

9. NOZZLE SPRAY
9.1. EQUIPMENT
9.1.1. Nature of mounting
9.1.2. Orientation
9.2. FUNCTIONING
9.2.1. Regularity
9.2.2. Flowrate

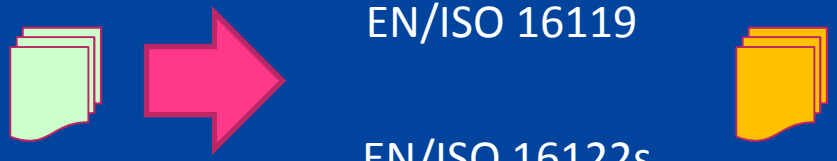
10. AIR ASSISTANCE
10.1. FAN
10.1.1. General shape
10.1.2 Functioning
10.2 AIR DISTRIBUTION
10.2.1. Air hoses
10.2.2. Air outlets

essential requirements

Existing and under development standards

EN/ISO 12761

EN/ISO 13790s



EN/ISO 16119

EN/ISO 16122s

<u>Case of cited sprayers</u> :
A classification of sprayers by functionality rather than by usage

Ex : horizontal boom sprayer vs low crop sprayer

<u>Case of « unsimilar » sprayers :</u> (trains, aerial applications, seed coating, etc.)

Essential requirements must be fullfiled but probably with adapted thresholds /levels of performance

Sprayer Inspection based on :

- Measurements, visual inspection and/or function test
- Test of individual parts or elements (nozzles, manometer, flow controller)
- Inspection of a complete sprayer (leaks, boom stability)

Question of performance thresholds
Question of specification & protocols
Question of references
Question of harmonization

→ A need for methods & standards !

→ SPISE WG – Technical WG ?

3 presentations :

1- Development of ISO/EN standards regarding the inspection of sprayers,
J.-C. Rousseau (France)

2- Sprayer tank agitation check: A proposal for a simple instrumental evaluation,
P. Balsari, M. Tamagnone, D. Allochis, C. Bozzer (Italy)

3- Inspection method for spray rate controllers in Flanders (Belgium),
J. Declercq, D. Nuyttens (Belgium)