Periodical inspection of fixed and semi-mobile sprayers

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Outline:

• History
• What equipment
• Content + specific differences with part 2 and 3
• Administration - testreport
• Problems / challenges for the future
• Conclusion
History:

• Mandate EC
• CEN TC144 WG3
• Project-team
• Connection with standard new equipment (EN-ISO 16119:4)
What equipment:

• Wide variety of equipment
• Equipment mostly used in greenhouses
• High Volume application equipment
• Two parts:
  – (semi) fixed Pump/tank unit
  – Application unit
    • Handgun/-lance
    • Vertical spray-boom
    • Horizontal spray-boom
Equipment covered:

- (semi) fixed Pump/tank unit
  - Semi-mobile
  - Fixed
- Transport
  - Reel with hose
  - Pipeline
- Application unit
  - Handgun/-lance
  - Vertical spray-boom
  - Horizontal spray-boom
Extra’s:

– Air-assistance

– Direct Injection System

– Motorized/automatic application unit (spray-robot)
Specific differences with part 2 and 3:

2 en 3 Pump/Agitation

1. Sprayers build according to EN-ISO 16119:4
   1. Manufacturers shall specify the flow (in l/min) minimal needed for agitation.
   2. Minimum capacity spray pump:
      Minimum needed capacity=liquid needed by application unit + minimal needed agitation capacity

2. Older sprayers

   As in part 2 and 3 (90% of nominal capacity + visible agitation)
Specific differences with part 2 and 3:

4 Spray- tank

1. Lid
   a. Always present
   b. For semi-mobile equipment this must be tightly sealed

2. Strainer
   1. Only for semi-mobile sprayers

5. Tank content indicator
   Visible from where the tank is filled.
Specific differences with part 2 and 3:

5. Measuring systems, controls and regulation systems

2. Pressure indicator
   1. Presence
      a. Always present on tank/pump unit
      b. Additional pressure indicator on application units
      c. On spray guns / lances only after publication of EN-ISO 16119:4 (1 dec. 2012)

2. Scale
   a. Same requirements as part 2 and 3
   b. how to deal with high pressure units (60 bar or higher)?

5. Direct injection systems (dosing units)
   - No leakage
   - No backflow
   - Mixing chamber
   - Accurate
7. Filters

1. Presence
   a. Suction filter (in case of positive displacement pumps)
   b. At least one pressure filter present:
      • On the application unit
      • In case of spray-gun/- lance on the tank/pump unit
Specific differences with part 2 and 3:

8. Application unit(s)

2. Horizontal spray-boom
   => same requirements as in part 2

3. Vertical spray-boom
   => same requirements as in part 3

4. Spray guns and lances
   => same requirements as in part 2 and 3
Specific differences with part 2 and 3:

10. Distribution

2. Nozzle output
   • Same requirements as in part 3

3. Spray distribution
   • Measuring horizontal or vertical distribution optional
Specific differences with part 2 and 3:

11. Autonomous application units

1. Drive system
   - In good condition and function

2. Travel speed
   - Not deviate more than +/-10% as declared by the manufacturer
Administration – sticker and test report:
Administration – testreport:
Administration – sticker:
Problems / challenges for the future:

• How to deal with specific equipment
  – Spray booms
  – Complete sprayers
Problems / challenges for the future:

Installation consists of different elements:

• One pump/tank unit is used with more as one application unit
• Elements as handguns are replaced
Problems / challenges for the future:

How to deal with elements as:

- Capacity pump / agitation
- Lid/cover on fixed installations
- Emptying spray tank
- Readability tank content => from outside or inside
- Pressure indicator => scale for higher pressures
- Filter => cleaning and control possibilities (both for suction and pressure filters)
- Measuring nozzle flow rate handgun/lances when no manometer is present.
- Speed motorized application units.
Missing in the standard:

• Pressure indicator
  – Scale requirements for higher pressures

• Reel
  – Requirements are missing (spring/rolling speed/etc.)
Conclusion:

This version of the standard EN-ISO 16122:4 is a good base to start the inspection of the fixed and semi mobile sprayers. Based on experiences gained in the different member states together we can improve the standard. Revised standard has to be extended with missing elements.
Thank you for your attention