Possibilities to inspect seed treatment equipment

SPISE – 6th European Workshop Barcelona

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SPISE 6 –
Possibilities to inspect seed treatment equipment (STE)

- Actual Situation (in Germany)
- Which kind of Seed Treatment Equipment (STE) we find currently on the market
- How to inspect seed treatment equipment and what is needed
- Established certification system in Germany for dust-free seeds
- Next steps
- Some suggestions for requirements
Actual situation (in Germany)

➢ The inspection for seed treatment equipment (STE) must be introduced before the end of the year 2020 – German „ArtikelVerordnung“ from 27 June 2013 based on the plant protection act from 13 February 2012

➢ The discussion of how to implement the inspection of the equipment is just starting

➢ For the moment we don’t have any standards neither for brand new STE nor for STE in use

➢ Both mobile STE (rarely) and stationary equipment (mostly) can be found

➢ The equipment can be located - on farms,
  - on the field (mobile),
  - at contractors,
  - in warehouses
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The discussion of how to implement the inspection of the equipment is just starting!

Many questions:

Inspection staff is not yet available and must be trained first

Most of the inspections are carried out on farms, at contractors or on company ground – inspectors must travel overland

Inspection equipment must be transportable

Which equipment is needed?

For the inspection sufficient quantities of seed are needed – must the farmer/contractor provide it?

For checking and calibration often Plant Protection Products (PPP) are necessary – work safety must be considered
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No standards for STE in the moment

CEN already announced not to draw up new standards for STE

JKI guideline for new equipment for the JKI approval exist
(these requirements are valid until 2011 in the declaration procedure)

Requirements for STE in use are needed soon
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Which devices can be found at the moment?

Mobile STE

- for potatoes
- for cereals
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Which devices can be found at the moment?

Problem of the definition:
Mobile seed treatment equipment?
or
Sprayer for field crops on a potatoe planter?

In Germany inspection as a
row sprayer for field crops (inspection since this year)
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Which devices can be found at the moment?

STE on farms

STE for potatoes

Inspection?

Picture: Eskil Nilsson
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Which devices can be found at the moment?

STE at contractors

Mobile STE - seed treatment with electrons!

Inspection?
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Which devices can be found at the moment?

STE for laboratories or chemical industry

STE in industry often work with more than 20 t/h. The seed treatment equipment is often located over more than one floor!

Work safety is important but is not often used!
How to inspect seed treatment equipment and what is needed

- inspection stuff must be trained in STE

- inspection take place on company ground / farms / contractors
  = Inspection stuff and equipment must be transportable

- which equipment is needed?
  easy: balance, flowmeter, stopwatch, measuring cylinders

  more complicated:
  Photometer, if chemical evaluation of treated seed is needed
  -> mobile equipment available and practicable?
What to inspect every three years?

A) Dosage accuracy
   - Pump: function test, leakages
   - Controls: Pressure gauge if present
   - Flow meter: function test and accuracy
   - Balance: accuracy by using calibrated weights
   - Nozzles (if present):
     Flowrate measurements (if possible

General problem: Often seed and PPP are needed.
The test with water is not sufficient!
What to inspect every three years?

B) Tightness and safety of equipment

- Hoses and lines: leakages
- Container lid: leakages
- Dust extraction (if present):
  damages, leakages
- Dust disposal: container?
- Safety of drives: drives guarded?
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What to inspect every three years?

C) Work quality

- grain distribution μg/corn: not possible, because of the needed instruments (Photometer)
- grain degree (ml/100 kg seed): not possible, because of the needed instruments
- automatic functions:
  + machine stops automatically when seed is missing
  + machine stops automatically when PPP – container is empty

But: Not all devices have this feature (esp. devices at farms)

Can be visually checked
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The Established certification system in Germany for dust-free seeds (voluntary) observe the complete process from grain delivery to filling of the finished seed!

- Investigate as part of the certification process also pickling units
- It is conceivable to inspect the devices during certification
- The experience shows, that calibration of the equipment must be regularly checked and documented by the user!
- Adjustment of the dosage has to be checked by the user for each new batch of seed!
- If documents are available, further analysis of the dosage could be omitted thereby
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The Established certification system in Germany for dust-free seeds (voluntary) observe the complete process from grain delivery to filling of the finished seed!

Experience of the certification up to now:

• The certification process often shows
  - Leakages at the pickling units
  - Poorly cleaned devices
  - Encrustations of seed and PPP

that complicate proper operation of the machine and makes the inspection of the device for the stuff difficult and may cause health problems when handling with PPP.

Inspection of STE with the use of PPP is a no go!
The use of water for function tests produce inconclusive results especially with beet and rape seed.
Next steps:

- The inspectable devices must be determined
- Requirements for STE in use must be worked out
- Inspection stuff must be trained
- In relation to the (not yet worked out) requirements appropriate test equipment is needed

It is proposed for this purpose to draw up an SPISE Advice paper!

Please find in the full paper of my presentation the proposed requirements as a basis for further discussions.
8. Filtering / Atomizer / Other Equipment
   a) If filters are installed in lines, filter inserts shall be changeable.
   b) The filter(s) shall be in good condition and the mesh size correspond to the nozzle(s) fitted in the STE.
   c) Atomizer(s) for PPP shall not be affected in their function, for example, by encrustations / dirt.
   d) Other equipment must be functional.
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Not to be inspected with the proposed requirements:

Quality of treated seed

• PPP on the single corn (µg/corn)
• PPP on a sample (mg / 50 g seed)
• The amount of dust in the seed
• Dosage with PPP / Water / Seed
• Proper storage of PPP
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Thank you for your attention!

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