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## German's way to deal with brand-new and very old sprayers in terms of the legal regulation

### 1. Introduction

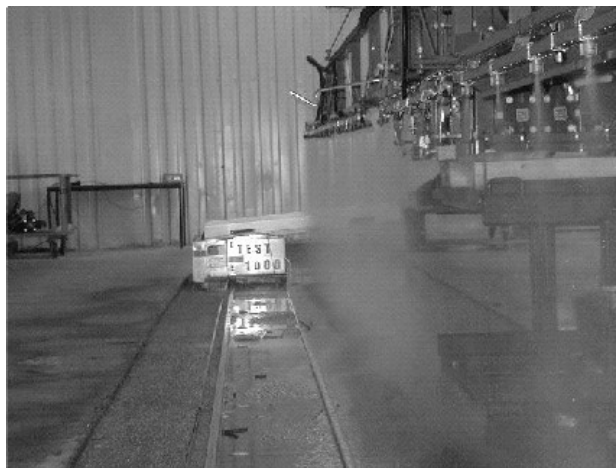
Since 1993 Germany has a mandatory inspection for field crop sprayers since 2001 for sprayers for orchards, vineyards and hops. The mandatory inspection was preceded by a lot of years with voluntary inspections. In these years the inspection stations and workshops could gain experience with the test methods and test equipment.

### 2. Brand new sprayers

According to the German Regulation on Plant Protection Products and Plant Protection Equipment brand-new sprayers have to be inspected within the first six month of their use. A sticker on these sprayers indicates the date for the next inspection. The owner must produce documents which plausibly show at which time the sprayer was taken into use. This inspection comprises the tests for system leakages and the correct installation of pipes and hoses, a test of the pump and the cross distribution test for booms and nozzles of field crop sprayers or the single nozzle output of air assisted sprayers respectively.



**Figure 1** Inspection of a new sprayer comprises pump capacity, pulsations, leakages, safety valve and kinks



**Figure 2** The inspection of new sprayers comprises also the cross distribution, anti-drip devices and size and type of the nozzles

Sprayers to be sold in Germany have to be registered in the German plant protection equipment list. Since 1988 all manufacturers or importers are obliged to declare that their sprayer fulfils all the requirements of the Plant Protection Act and the Regulation on Plant Protection Products and Plant Protection Equipment. These requirements correspond with EN 12761.

All approved workshops may conduct the inspection. Some manufacturers are approved as inspection workshop and deliver their sprayers with the sticker so that the farmer has to have his sprayers tested not before two years. For some manufacturers the inspection of new sprayers is part of their quality management system at the end of the assembly line.



**Figure 3** What is the definition of ‘very old sprayers’?

### 3. Very old sprayers

The German regulation does not differentiate between sprayers in use and ‘very old sprayers’.

Therefore very old sprayers are tested on basis of the same requirements as all other sprayers. There is no special arrangement for very old sprayers. Sometimes additional equipment has to be installed like pressure filters or anti-drip devices on old sprayers to fulfil all requirements. If farmers do not upgrade their sprayers to fulfil the requirements their sprayers may not be used anymore. In Germany after the first years of the mandatory inspection old sprayers either fulfilled the requirements a got a sticker or they were put out of operation.



**Figure 4** SOLO Minor

The SOLO Minor sprayer is a good example of an old sprayer that had to be upgraded to fulfil all requirements.

The major faults of these sprayers were:

- No stirring device
- No pressure regulation
- No pressure gauge
- Defect valves
- No pressure filter
- Uneven nozzle output

To upgrade these sprayers, the manufacturer provided an update set with

- a pump with higher capacity,
- new pipes,
- a pressure filter,
- new controls,
- a pressure gauge,
- stirring equipment and
- flat fan nozzles.

The price for this update set was around 400 €. The vine growers were now able to use this sprayers further on.

#### **4. Conclusions**

In Germany the inspection of new sprayers is necessary but it does not include all requirements. New sprayers have to be inspected within the first six months. Normally manufacturers or dealers deliver new sprayers with inspection sticker so that farmers have to have their sprayers inspected not until two years.

Concerning old sprayers there are no exceptions for 'very old sprayers'. Sprayers that do not fulfil the requirements have to be upgraded or they have to be put out of operation. In Germany manufacturers provided update sets for their sprayers to ensure that farmers could use their sprayers further on.