



Better Training for Safer Food *Initiative*

Case study (Lecture 8)

***SPISE: Standard procedure for
Inspection of Sprayers in Europe***

CONTENTS

- What is SPISE
- Spise TWGs activities and related proposals
- SPISE Advice examples



SPISE: STANDARDISED PROCEDURE FOR THE INSPECTION OF SPRAYERS IN EUROPE

SPISE IS A WORKING GROUP ESTABLISHED BY PROF. HEINZ GANZELMEIER DURING THE FIRST SPISE WORKSHOP IN 2004. THE FIVE MEMBERS OF THE SPISE WORKING GROUP ARE COMING FROM BELGIUM, FRANCE, GERMANY, ITALY AND THE NETHERLANDS. THEY REPRESENT MEMBER STATES WITH EXPERIENCE IN INSPECTION OF SPRAYERS.

SPISE - Standardized Procedure for the Inspection of Sprayers in Europe

- **SPISE:** A voluntary initiative
- **SPISE Working Group:** Prepares the workshops

Huyghebaert
Bruno



Belgium

Wegener
Jens Karl



Germany

Jean-Paul
Douzals



France

Kole
Jaco



Netherlands

Balsari
Paolo



Italy

- **Aim:** Gives advise regarding inspections of plant protection equipment already in use.

MAIN OBJECTIVES OF SPISE WORKING GROUP

- HARMONISING AND PROMOTING SPRAYERS INSPECTION IN EU
- EXCHANGING INFORMATION ON SPRAYERS INSPECTION ACTIVITY BETWEEN EU MEMBER STATES
- POOL OF EXPERTS
- DEVELOPING HIGH QUALITY TECHNICAL ADVISE



Recommendations coming out from the 4th SPISE Workshop held in 2012

Establishing Technical Working Groups (TWG) with the aim to realise Spise Advice series on the following topics:

TWG 1 - Inspection of brand new sprayers

TWG 2 - Risk assessment

TWG 3 - Simplification - additional test methods for inspection

TWG 4 - How to “certificate” the workshop activities (quality assurance)

TWG 5 - Training material

TWG 6 - Field crop sprayers and tree crop sprayers adjustment at the workshop

TWG 7 - Inspection of special spraying trains for chemical weed control on the tracks

Additional SPISE TWGs established in 2015:

- Dusters
- Microgranulators
- Soil fumigation equipment
- Foggers and LVM
- Mobile seed treatments



SPISE ADVICE SERIES

Considered as **a tool to carry out sprayer inspection activity as homogeneous** as possible



SPISE advices could represent a **reference** when International Standards are not available.

TWG 6 – EXAMPLE OF SPISE ADVICE SPISE ADVICE ON HOW TO MAKE SPRAYER ADJUSTMENT AT THE WORKSHOP

Article 8, paragraph 5 of EU Directive 128/2009/EC says that:

“Professional users shall conduct regular calibrations and technical checks of the pesticide application equipment in accordance with the appropriate training received as provided for in Article 5.”



**SPRAYER CALIBRATION AT
FARM**

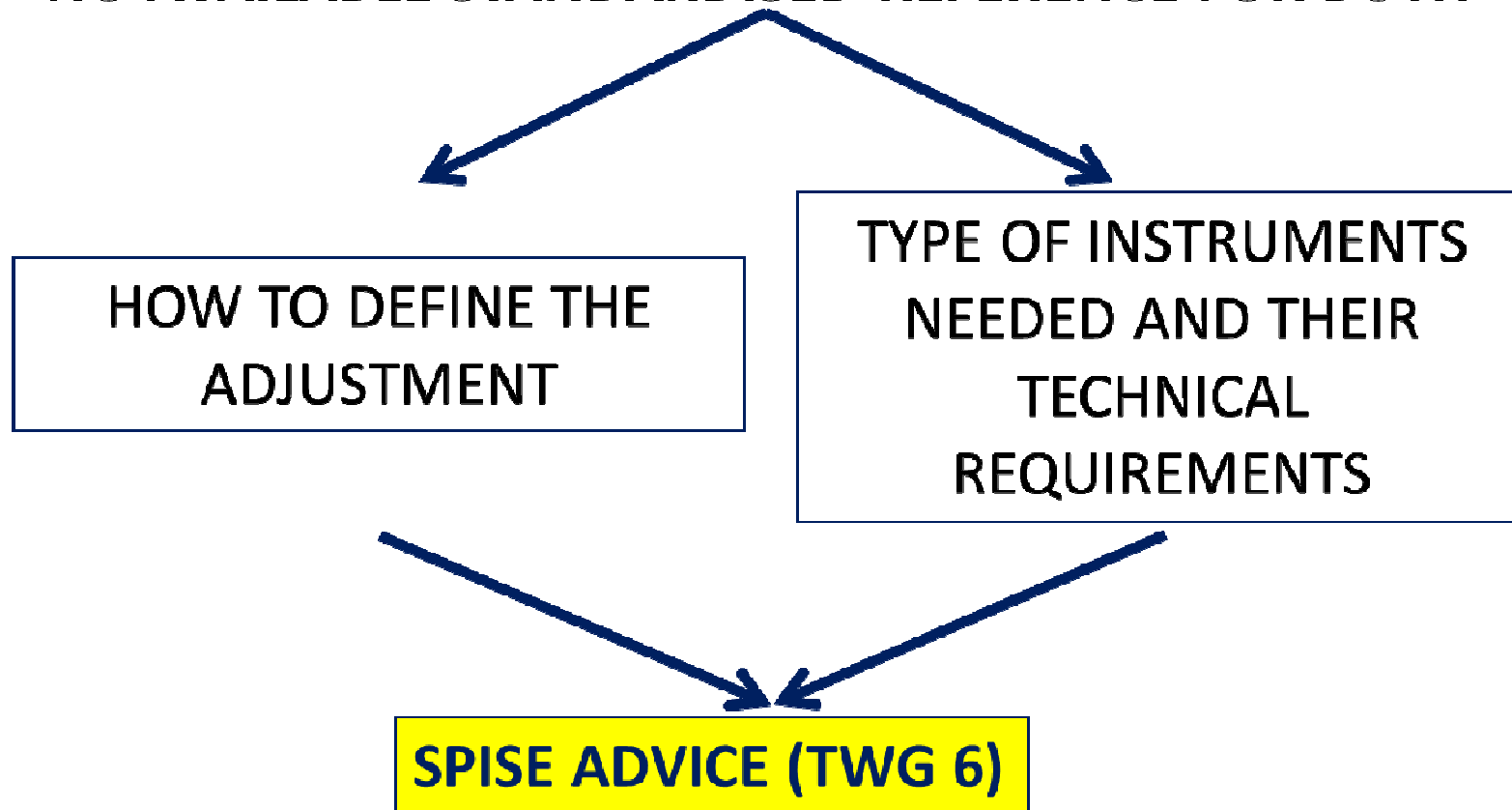


**SPRAYER ADJUSTMENT AT
AUTHORISED WORKSHOP**

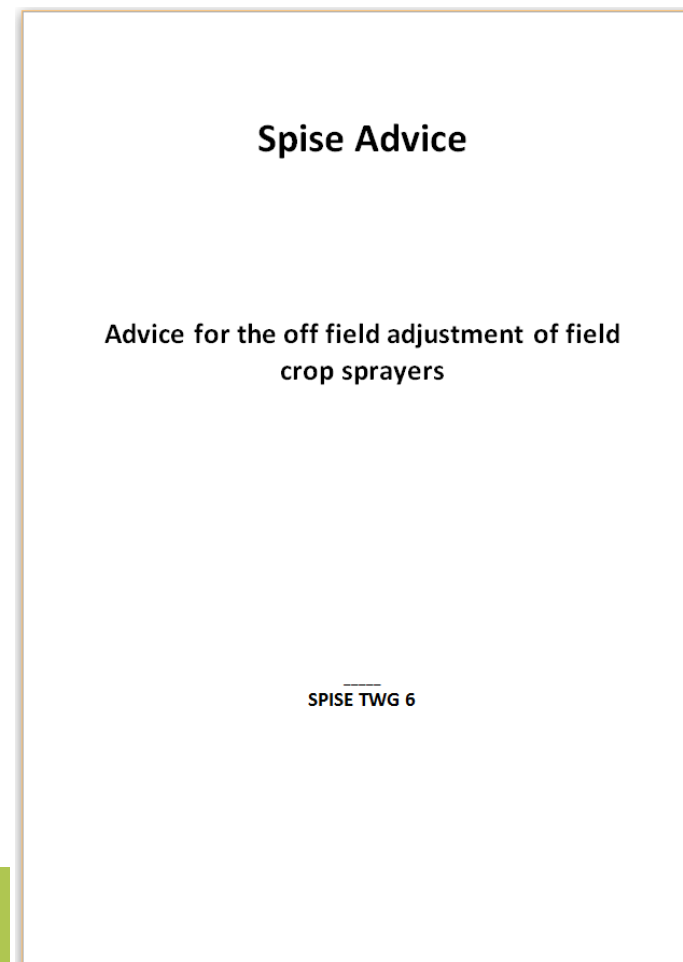
**TO BE ABLE TO REDUCE ENVIRONMENTAL IMPACT OF PESTICIDE APPLICATION IT IS
ESSENTIAL TO MAKE THE SPRAYER INSPECTION FOLLOWED BY SPRAYER ADJUSTMENT**

SPRAYER ADJUSTMENT AT AUTHORISED WORKSHOP

NO AVAILABLE STANDARDISED REFERENCE FOR BOTH



SPISE TWG 6 Chairmen: P. Balsari, A. Herbst, J. Langenakens



SPISE Advice for the off field adjustment of field crop sprayers



THE SPISE ADVICE

FIELD CROP SPRAYER ADJUSTMENT AT THE WORKSHOP

1 - OPTIMISE THE
BOOM HEIGHT

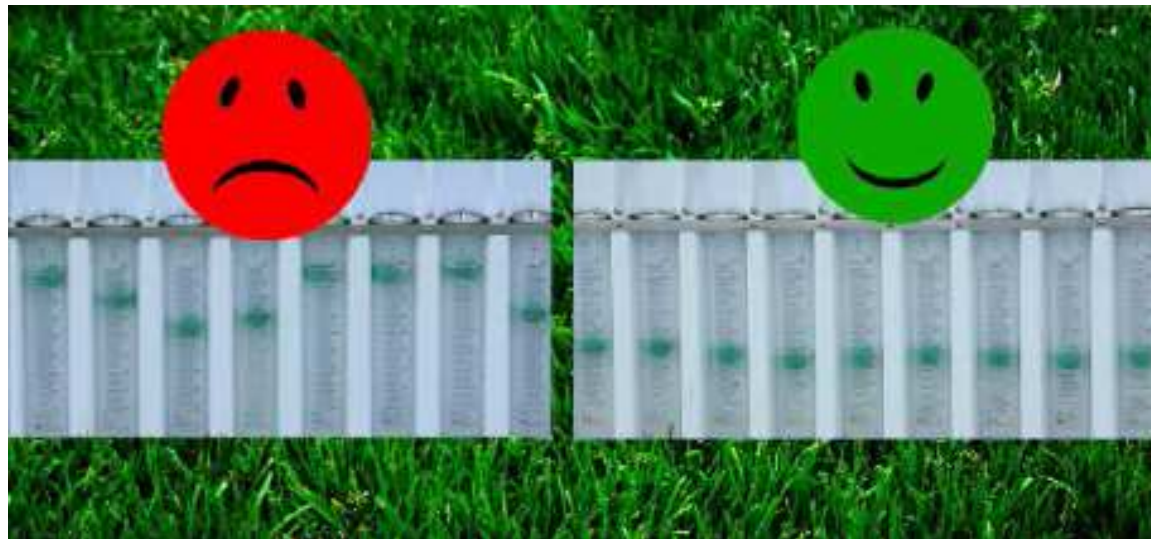
2 - OPTIMISE AIR
STREAM VELOCITY
AND DIRECTION

1 - OPTIMISE THE BOOM HEIGHT

OBJECTIVE



TO ACHIEVE A SUFFICIENT EVENNESS OF
TRANSVERSAL SPRAY DISTRIBUTION



1 - OPTIMISE THE BOOM HEIGHT

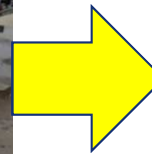


MINIMAL TECHNICAL CHARACTERISTICS OF THE HORIZONTAL TEST BENCH

- Grooves $100 \pm 2,5$ mm wide (100 ± 1 for electronic test bench) and at least 80 mm deep, measured as a distance between the top and the bottom of the groove
- Length of the groove: at least 1,5 m.
- Graduated spray liquid measuring cylinder capacity: ≥ 500 ml
- Scale graduation: ≤ 10 ml

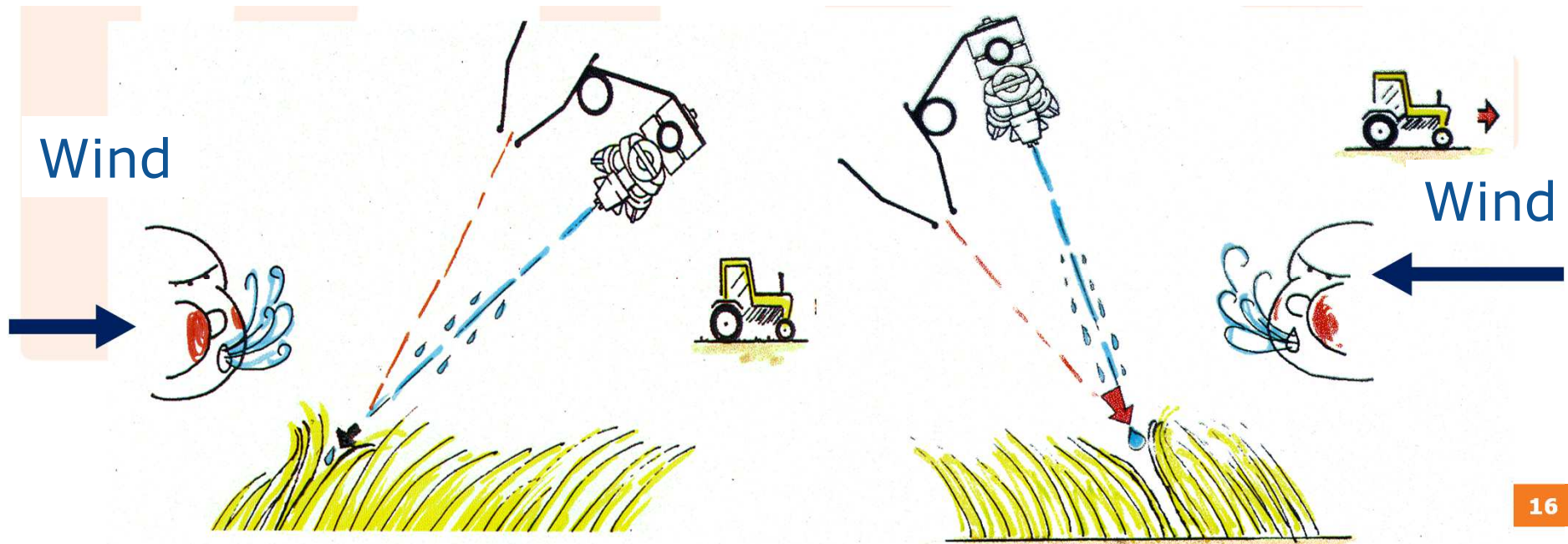
1 - OPTIMISE THE BOOM HEIGHT

After checking that the field crop sprayer is positioned on a horizontal surface and is set according to the parameters (operating pressure and boom height) normally used in the farm, activate the nozzles (and data acquisition in case of electronic test bench) and position the test bench under the boom section to examine



2 - OPTIMISE AIR VELOCITY AND DIRECTION

When air-assisted boom sprayers are operated, it is necessary to adjust the air stream velocity and the inclination of the nozzles (or of the air sleeve itself, when possible) with respect to the air flux according to the spray application conditions



2 - OPTIMISE AIR VELOCITY AND DIRECTION

To assess the air velocity it is necessary to use a specific test bench provided with an anemometer having at least the following technical features:

Numbers of anemometers: 1

Anemometer measuring range: $0 \div 25$ m/s

Error max: 0.25 m/s

Longitudinal distance between measurement positions: max 100 mm

Transversal distance between measurement positions: max. 500 mm

Number of measurements per position: 1





European Commission

ADJUSTMENT REPORT - FIELD CROP SPRAYER

ANNEX 1

REPORT OF FIELD CROP SPRAYER ADJUSTMENT

SECTION 1

Test station: _____
 Owner's identity: _____
 Owner's address: _____

Sprayer
 Manufacturer: _____
 Model: _____
 Serial/inspection number: _____
 Boomwidth (m): _____

Mounted [] Trailed [] Self propelled []

I

Consumers,
Health And Food
Executive Agency

ANNEX 1

SECTION 2¹

CROP _____

Treatment

Pre emergence weed control [] Post emergence weed control []
 Insecticide [] Fungicide []

Nozzle Type

Flat fan [] Twin [] Hollow cone [] Mirror []
 Opening angle 80 [] 110 [] other _____
 Air induction or similar [yes] [no]
 Working pressure (bar): _____
 Nozzle spacing (m): _____

Optimum boom height established(m): _____
 CV (%) at the boom height _____

Air assistance system

Presence [yes] [no]
 If yes, main goal of air assistance system
 Anti drift [] Increase penetration into dense canopies []

Optimum air stream velocity

PTO revolution (rpm) _____
 Air velocity (m/s) _____
 (mean values along the spray boom)
 Air assistance system inclination respect to forward direction

Backward [] Forward [] Vertical []

 (date)

 (inspector's signature)

 (Test station stamp)

¹ Fill out a new section for each crop and treatment for which sprayer adjustment has been carried out

II

Attendants using also SPISE website have to answer to the following questions:

- 1) Are SPISE Advices considered useful for fullfilling art. 8 Directive 128 requirements and for **improving the sprayers inspections?**
- 2) Which could be other topics/sprayers to be considered by SPISE Advices? ***Make a list with a priority order***