European Commission

Better Training for Safer Food

Initiative

Derogations applied in Member States regarding the need of inspection of certain PAE

Risk assessment

Consumers, Health And Food Executive Agency

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JKI - Institute

European Commission

Outline

- Derogations in different Member States: causes and consequences
- Environmental risk during the spraying application process
- Risk assessment

Derogations in different Member States: causes and consequences

EU regulation

- DIRECTIVE 2009/128/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009
  Establishing a framework for Community action to achieve the sustainable use of pesticides
  (SUD – sustainable use directive)

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Derogations in different Member States: causes and consequences

SUD:

- CHAPTER III - PESTICIDE APPLICATION EQUIPMENT

  Article 8 - Inspection of equipment in use

- Paragraph 1: MS to establish mandatory inspection of PAE in professional use

- Paragraph 2: until 14 December 2016

Derogations in different Member States: causes and consequences

Pragraph 3:

derogating from (1) and (2), on the basis of a risk assessment considering the scale of use, MS may

a) apply different inspection intervals for non-spraying PAE, handheld PAE, knapsack sprayers and other PAE with low scale of use (but not mounted on aircrafts or trains and boom sprayers wider than 3 m)

b) exempt handheld PAE and knapsack sprayers, if users are trained and informed about specific risks

Derogations in different Member States: causes and consequences

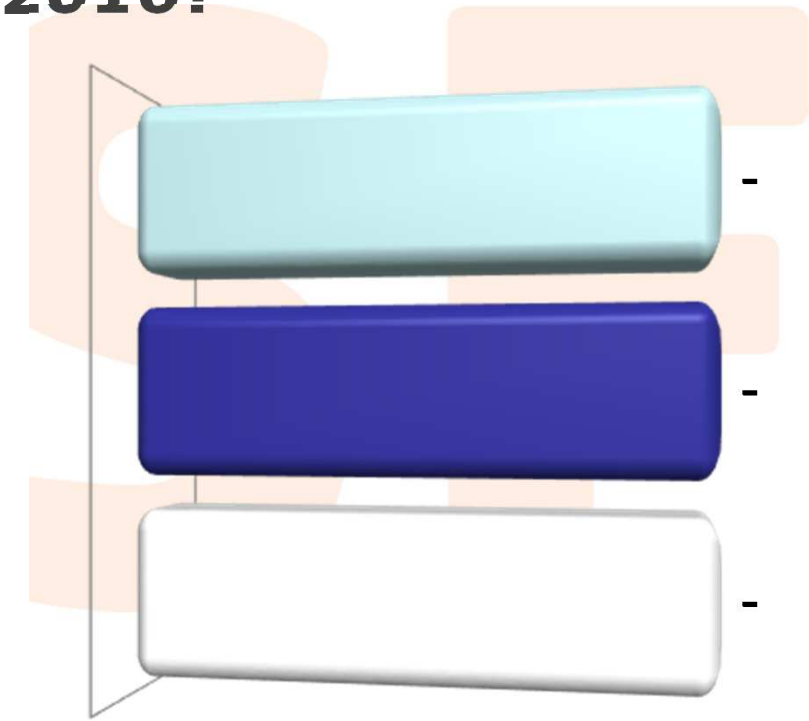
1	boom sprayers 
2	bush and tree crop sprayers 
3	hand-operated PAE 
4	non-spraying PAE 
5	handheld PAE 
6	knapsack sprayers 
7	PAE of low scale use 
8	train and aircraft sprayers 

Paragraph 3 a: different inspection intervals

Paragraph 3 b: exemption

Which of the following equipment has to be inspected for the first time by 14 December 2016?

1. Lever-operated knapsack sprayer
2. Tractor-mounted vineyard sprayer
3. Tractor-mounted granule applicator



A B C

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Derogations in different Member States: causes and consequences

Germany – Legal Ordinance on PAE

- principal requirements on sprayer inspections
- different time table for some equipment
- exemptions from inspection

Derogations in different Member States: causes and consequences

Germany - to be inspected until end of 2020:

- seed dressing equipment

- wiping equipment

- granule applicators

- soil decontamination equipment

Environmental risk during the spray application process

- **Risk** – combination of a hazard and its likelihood
- **Hazard** – potential source of harm or adverse effect

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Environmental risk

1. efficient product
2. right time (state of pest, disease or weed …)
3. right dose and application rate
4. suitable conditions (weather …)
5. appropriate application (sprayer …)

efficacy > environmental risk

Environment

- Humans (operators, bystanders, consumers)
- air
- water
- soil
- non-target organisms

Environmental risk during the spray application process

Main hazards for environmental contamination

- filling “accidents”
- leakage
- over- or under-dosing
- spray drift
- disposal of residues and cleaning

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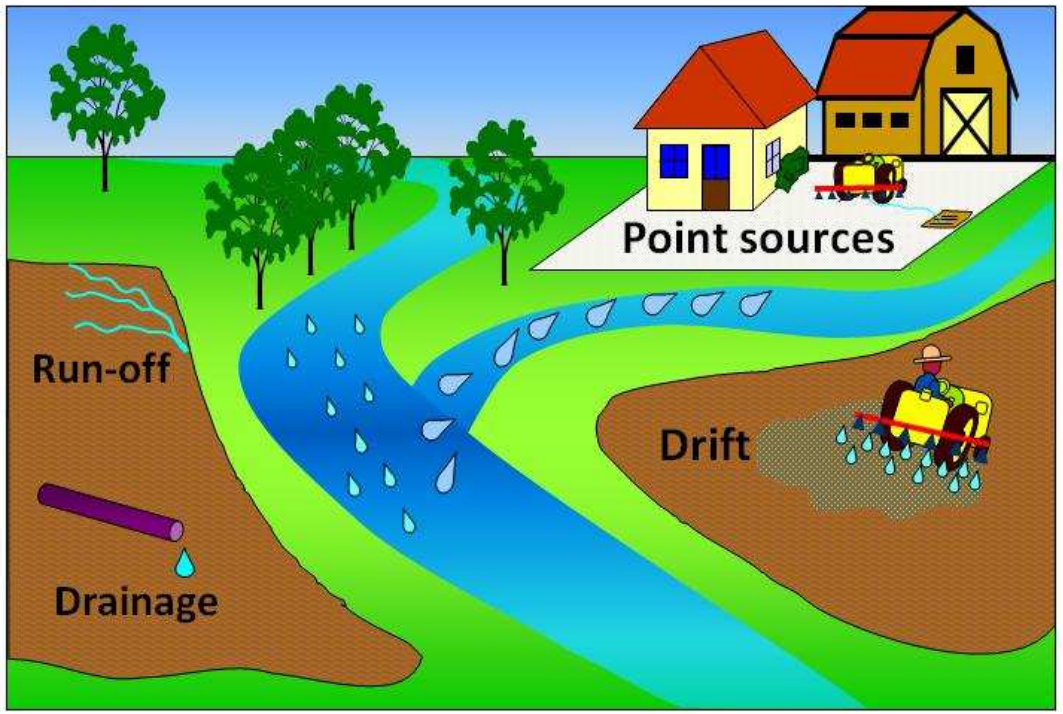
Environmental risk during the spray application process

Example: Risk of surface water contamination

Hazards:

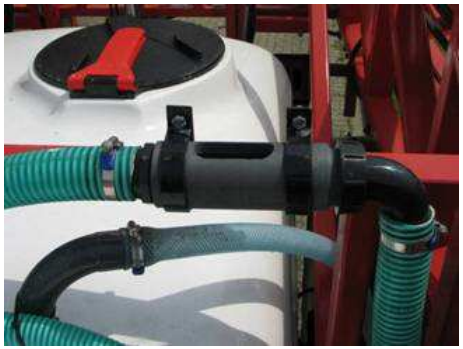
- point sources
  (filling, cleaning …)
- diffuse sources
  (drift …)



Environmental risk during the spray application process

Hazards – filling

- backflow



- overflow (foaming)

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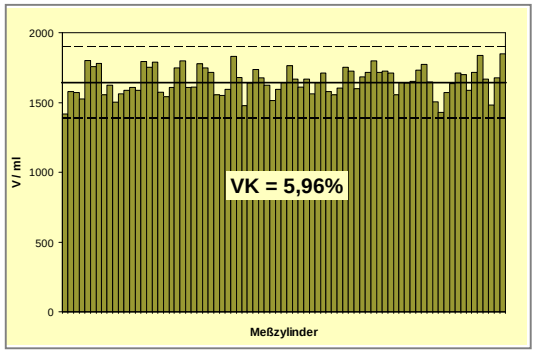
Environmental risk during the spray application process

Hazards – leakage

Environmental risk during the spray application process

Hazards – over- and under-dosing

- uneven distribution



- insufficient agitation

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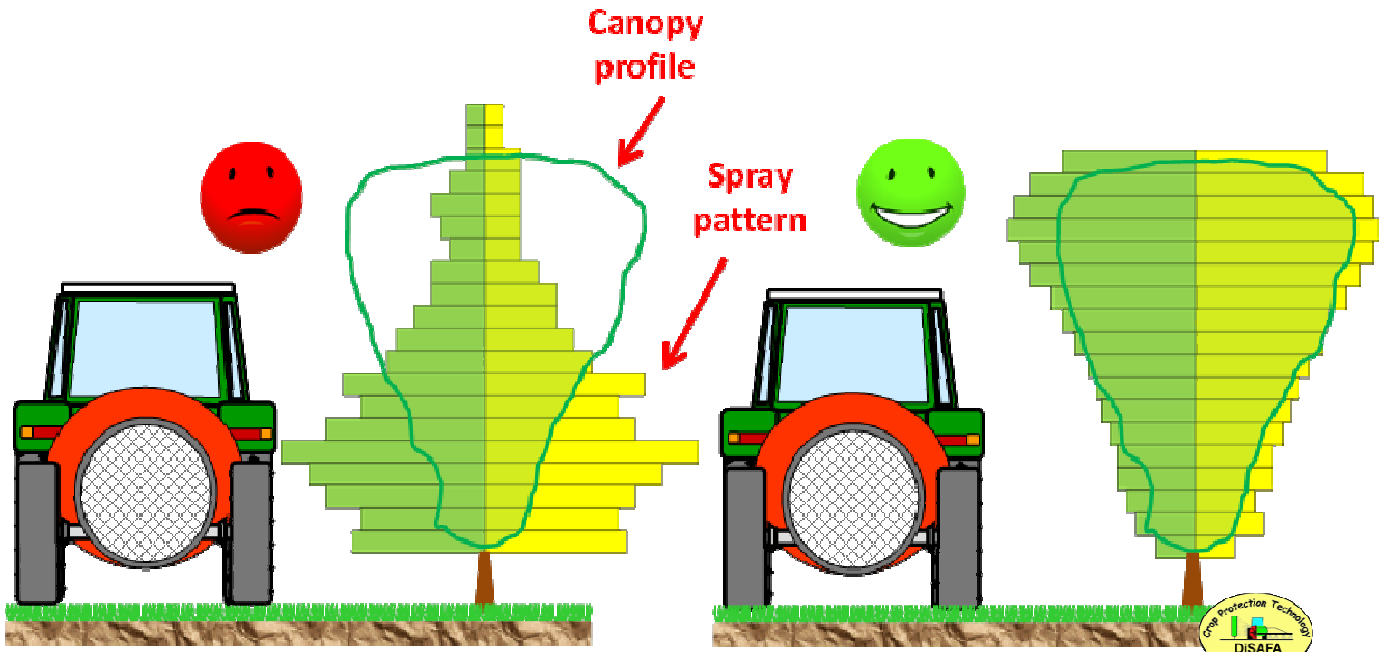
Environmental risk during the spray application process

Hazards – over- and under-dosing

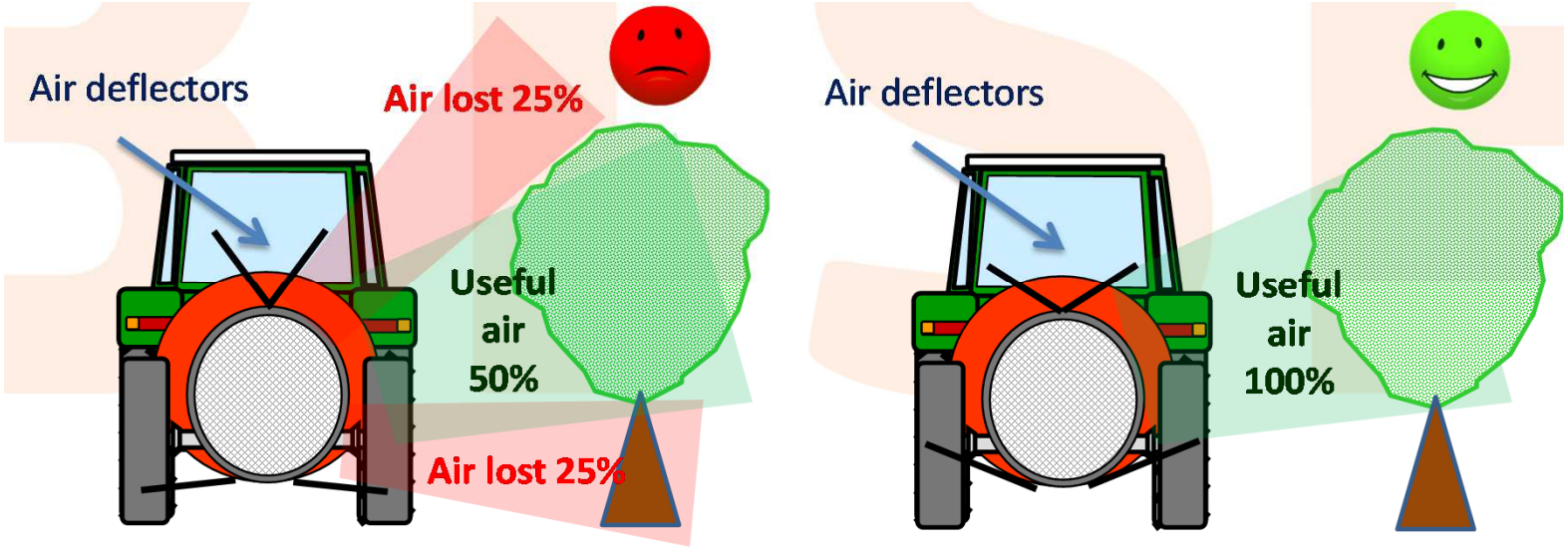
- inappropriate distribution



Environmental risk during the spray application process

Hazards – over- and under-dosing

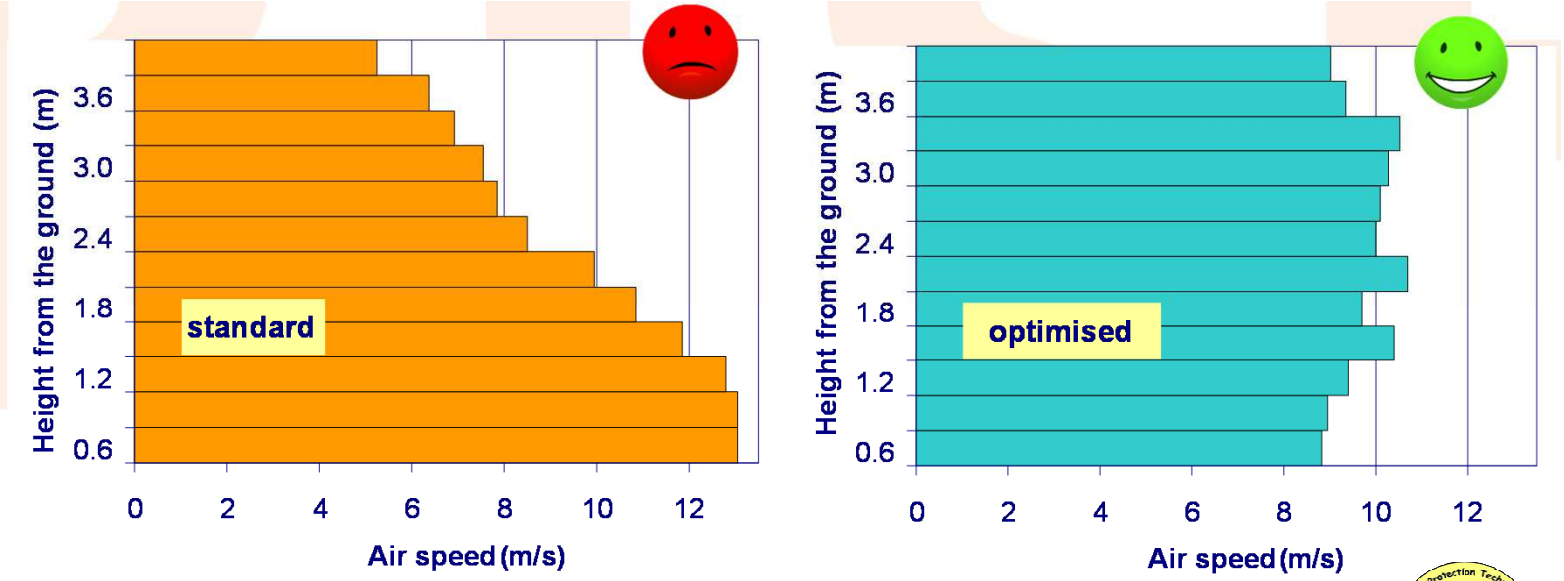
- inappropriate distribution



Environmental risk during the spray application process

Hazards – over- and under-dosing

- inappropriate penetration



Environmental risk during the spray application process

Hazards – spray drift

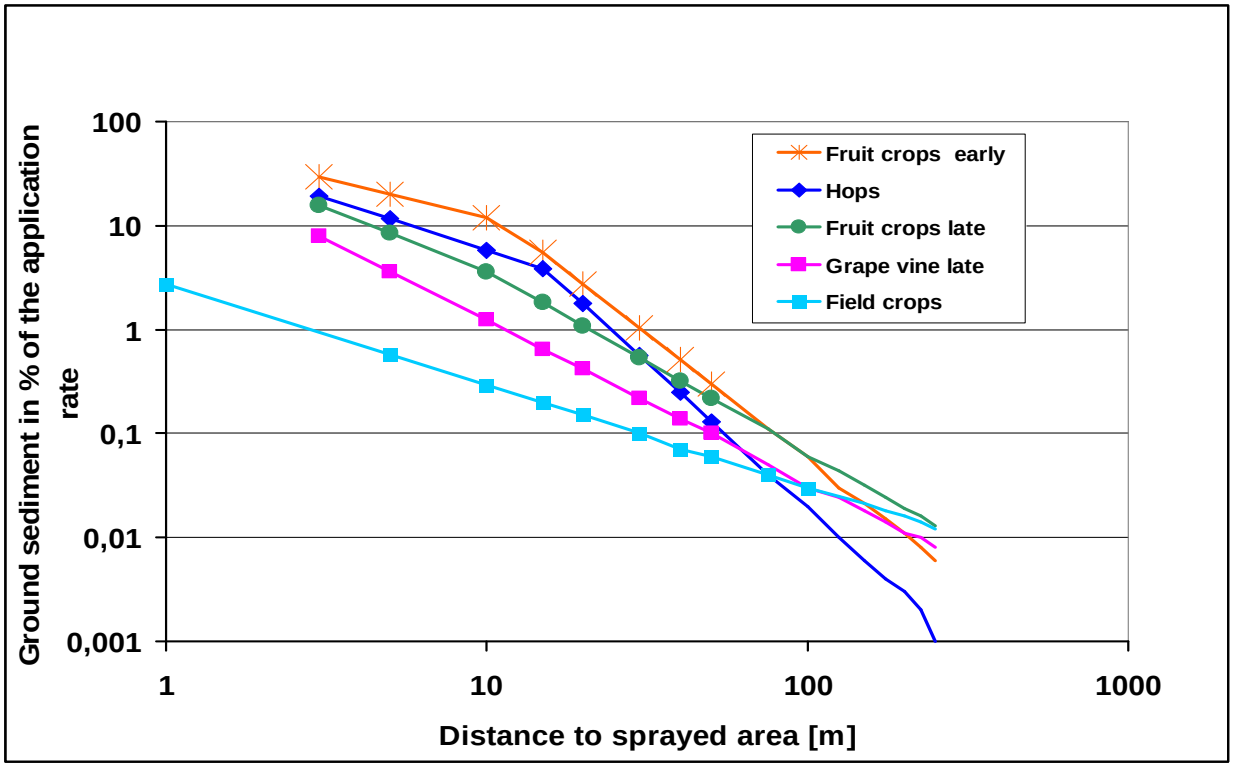
- high drift potential

- poor sprayer adjustment

Environmental risk during the spray application process

Hazards – spray drift

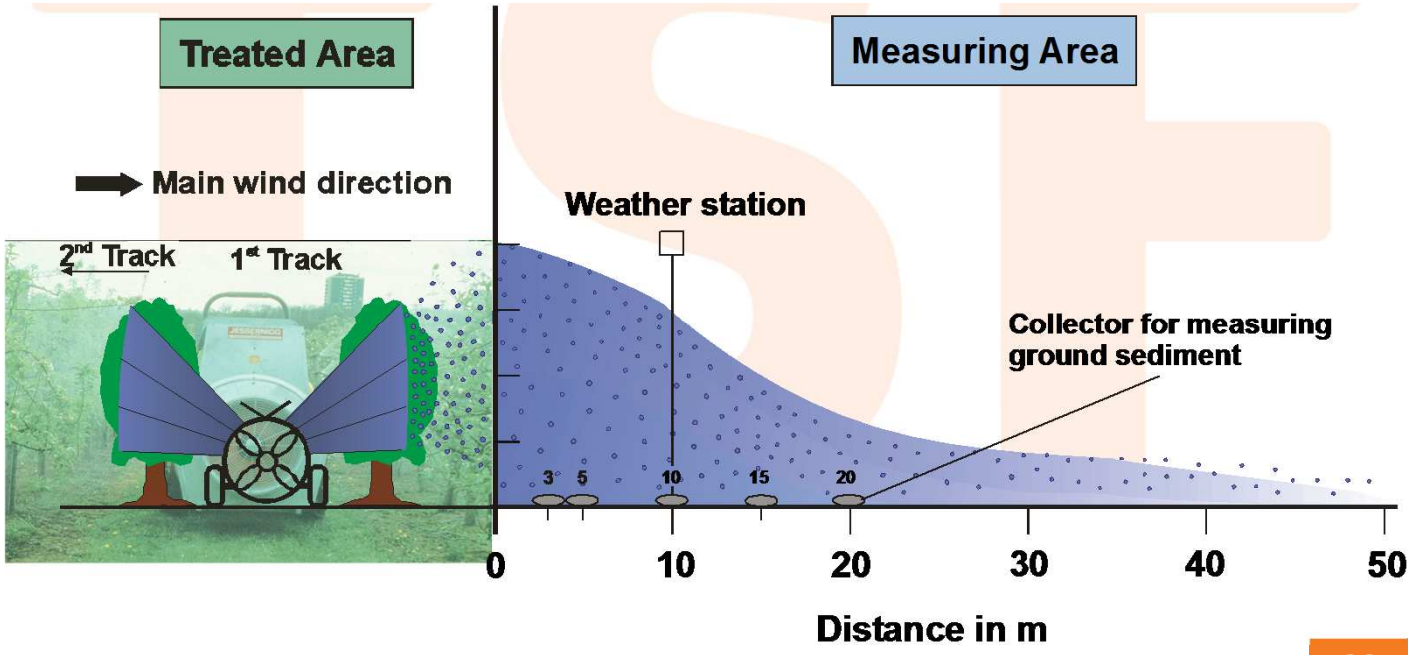
- basic drift values



Environmental risk during the spray application process

Hazards – spray drift

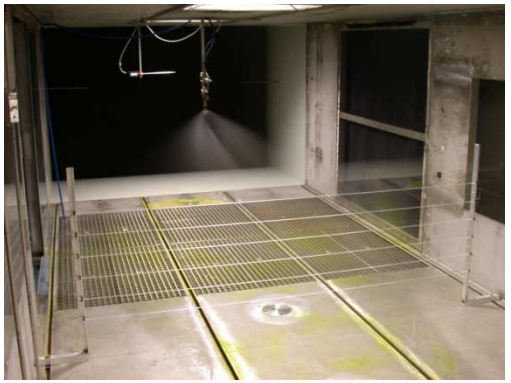
- drift test (field)

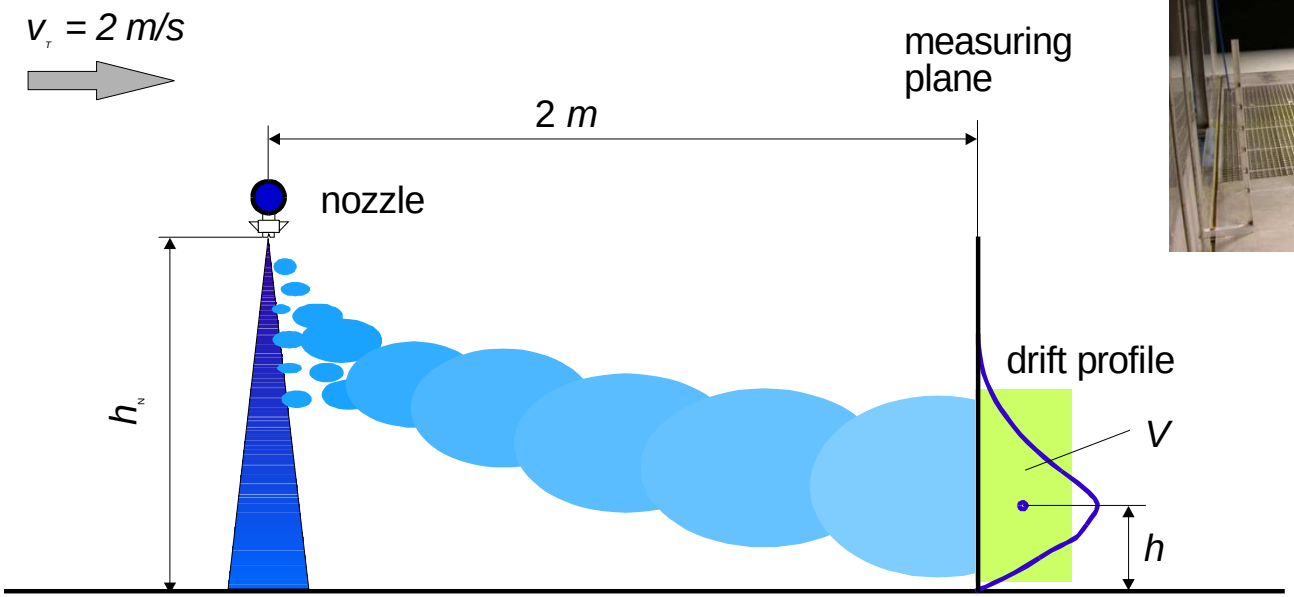


Environmental risk during the spray application process

Hazards – spray drift

- drift test (wind tunnel)

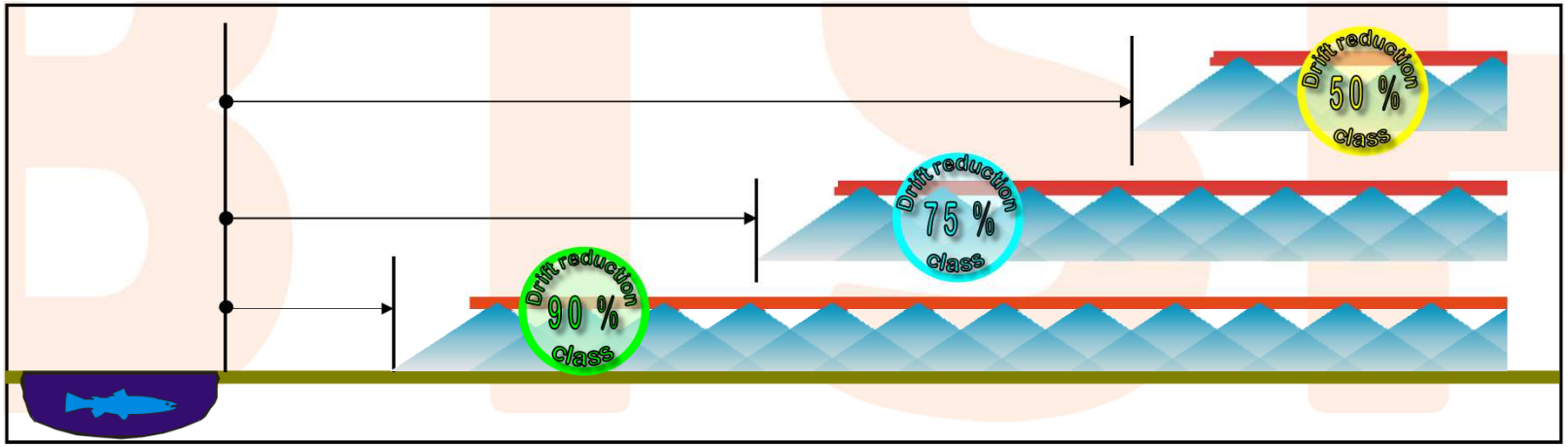




Environmental risk during the spray application process

Hazards – spray drift

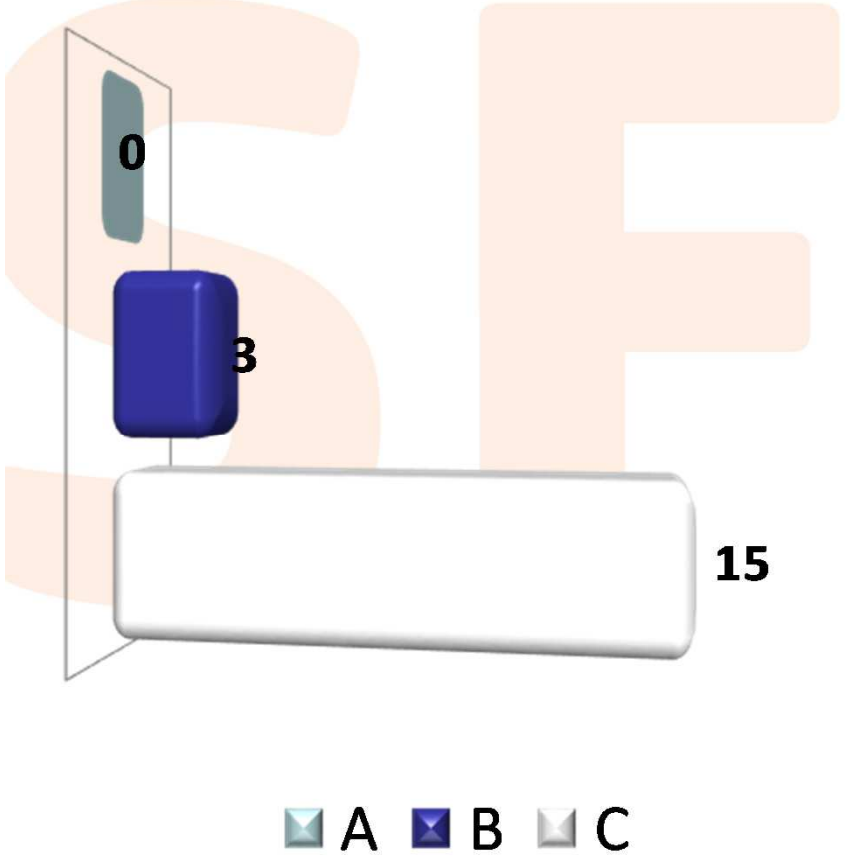
- non-spray buffer zones



PPP x: 10 m	50%: 5 m,	75%: 1 m,	90%: 1 m
PPP y: 20 m	50%: 20 m,	75%: 10 m,	90%: 5 m
PPP z: 20 m		75%: 20 m,	90%: 10 m

Which loss of product belongs to spray drift?

1. Run-off from the treated field during next rainfall
2. Vapor from treated crop the day after application
3. Air-borne droplets above the adjacent field



Environmental risk during the spray application process

Hazards – residues and cleaning

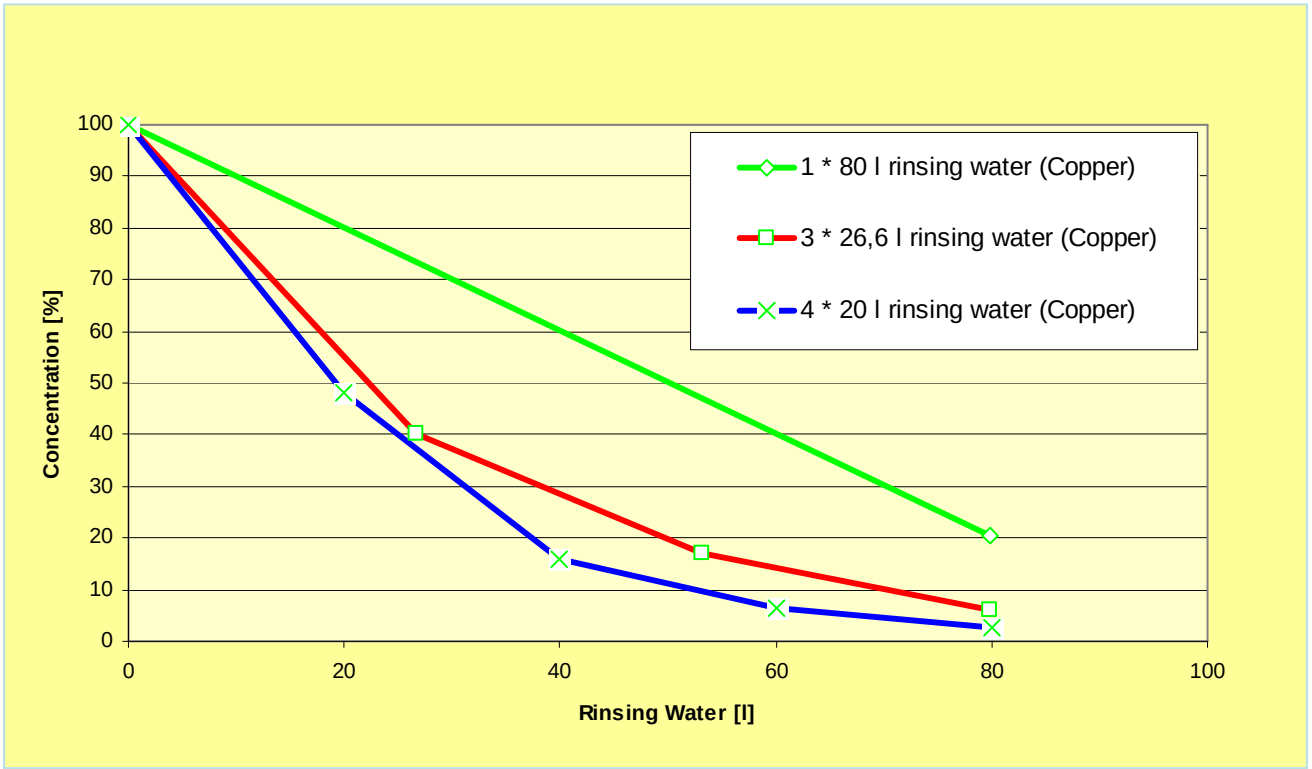
- residues

- clean the sprayer **on the field**

Environmental risk during the spray application process

Hazards – residues and cleaning

- improper cleaning



Risk assessment

- **Risk** – combination of a hazard and its likelihood
- **Hazard** – potential source of harm or adverse effect

Risk assessment – rating of hazards

	Rating: 1 - very low, 5 - very high	boom sprayers	bush and tree crop sprayers	hand-operated PAE	non-spraying PAE	handheld PAE	knapsack sprayers	PAE of low scale use	train sprayers	aerial PAE
1	power transmission	3	3	3	3	3	3	3	3	3
2	pump	4	3	3	1	1	2	3	5	5
3	agitation	3	3	3	1	0	1	3	4	4
4	spray liquid tank	5	5	4	3	3	4	5	5	5
5	measuring, control and regulation	4	3	2	3	0	2	3	4	4
6	pipes and hoses	4	4	4	1	0	3	3	4	4
7	filtering	3	3	2	1	1	1	3	3	3
8	spray boom	4	3	1	1	0	1	3	3	4
9	nozzles	4	3	3	1	1	1	3	4	4
10	distribution	2	4	1	2	0	1	2	4	5
11	blower	1	5	2	0	0	2	0	0	0
	total	37	39	28	17	9	21	31	39	41
	nominal volume / 1000 l	3	1.5	0.3	0.05	0.001	0.01	0.1	10	0.2
	hazard	**111**	**59**	**8**	**1**	**0**	**0**	**3**	**390**	**8**

Risk assessment - Germany

	boom sprayers	bush and tree crop sprayers	hand-operated PAE	non-spraying PAE	handheld PAE	knapsack sprayers	PAE of low scale use	train sprayers	aerial PAE
hazard	111	59	8	1	0	0	3	390	8
number of sprayers / 1000	140	32	32	13.5	220	400	5	0.03	0.008
risk	**15.5**	**1.9**	**0.3**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**

Risk assessment - Germany

PAE exempted from inspection:

- handheld equipment

- motorised knapsack sprayers

- manually operated knapsack sprayers

- handheld centrifugal sprayers

Question 6 – 3: Why are train sprayers not exempted from regular inspection?

1. The environmental risk is too high
2. The individual hazard from a train sprayer is too high
3. It is easy to inspect them

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Thank you for your attention.

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