

Reducing emission of pesticides to the environment

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APPLIED PLANT RESEARCH
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Set up of this part

- Pesticides and surface water in the Netherlands
- Point sources
 - Risks
 - Solutions
- Demonstration Biofilter & Spraying technique



“Those few droplets”

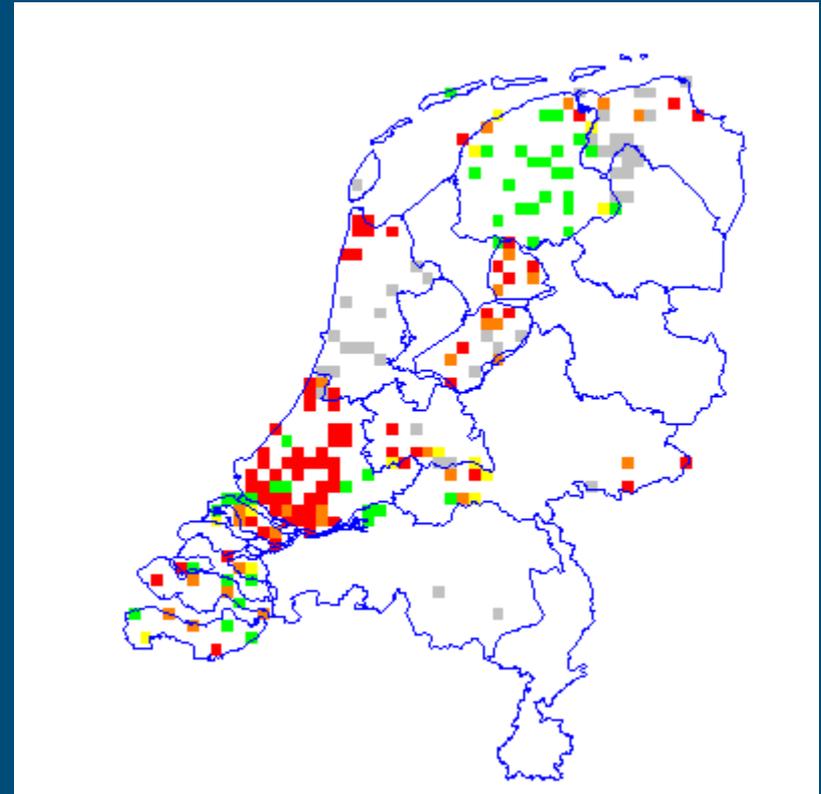
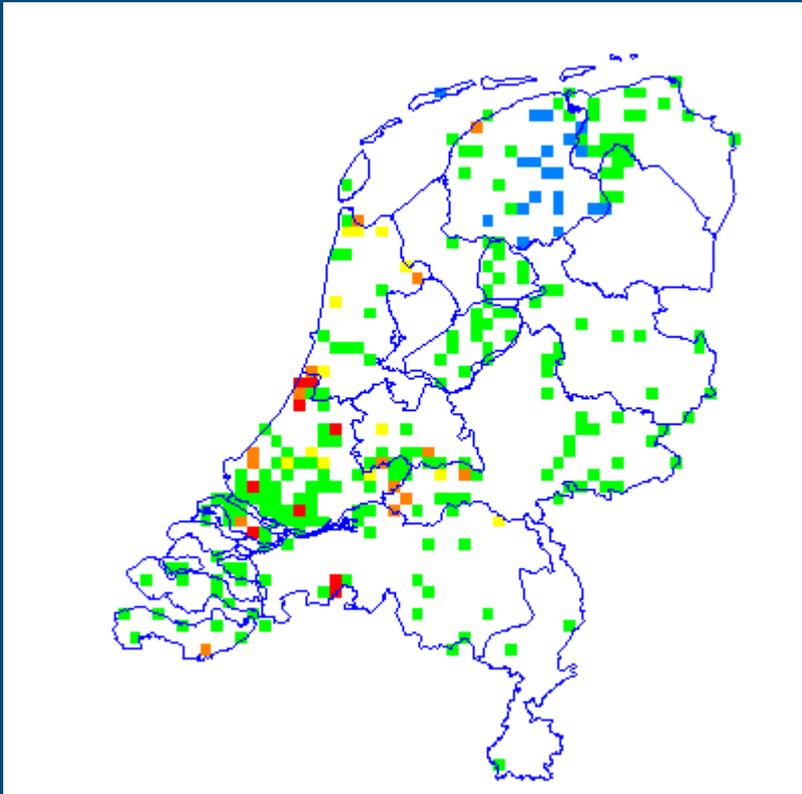
Drinking water standard: 0,1 ug =
0,0000001 gram active
ingredient / Liter water

1 gram product: 20 km ditch
'contaminated'



Topsin M / carbendazim

Admire

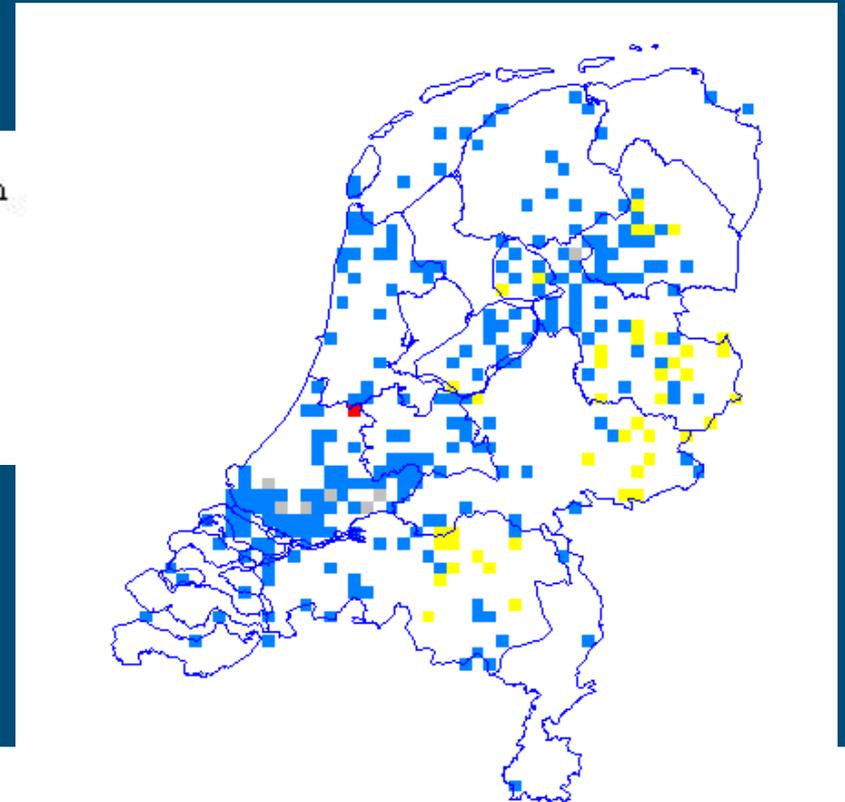


Bestrijdingsmiddelenatlas.nl 2005-2006



Maïs herbicide: Terbutylazin 2003-2004

Exceeds drinking water value in maïs production areas

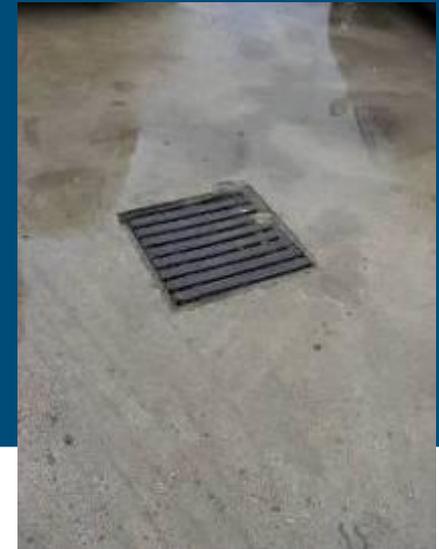


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Emission routes: diffuse and point emission

- Diffuse: spray drift, drainage, etc.
- Point emission:
 - Often linked to the farm yard
 - Left overs or cleaning water with ppp's
 - Field run off
 - Causes high peaks



Point emissions versus total emission

- In UK, Germany and Sweden
 - 20-70% of the pesticide load comes from point sources



Point sources: risks and solutions



Surface run off

- Can lead to standard exceedances
- Soil structure
- Buffer strips



Contamination and cleaning of sprayers



Filling and cleaning sprayers, planting machine, etc.

Practice:

- Outside cleaning: mostly at the farm yard (concrete)
- Internal cleaning: Mostly in the field with clean water tank
- Often emission risk at the farm yard



Cheap and simple methods for collecting wastewater



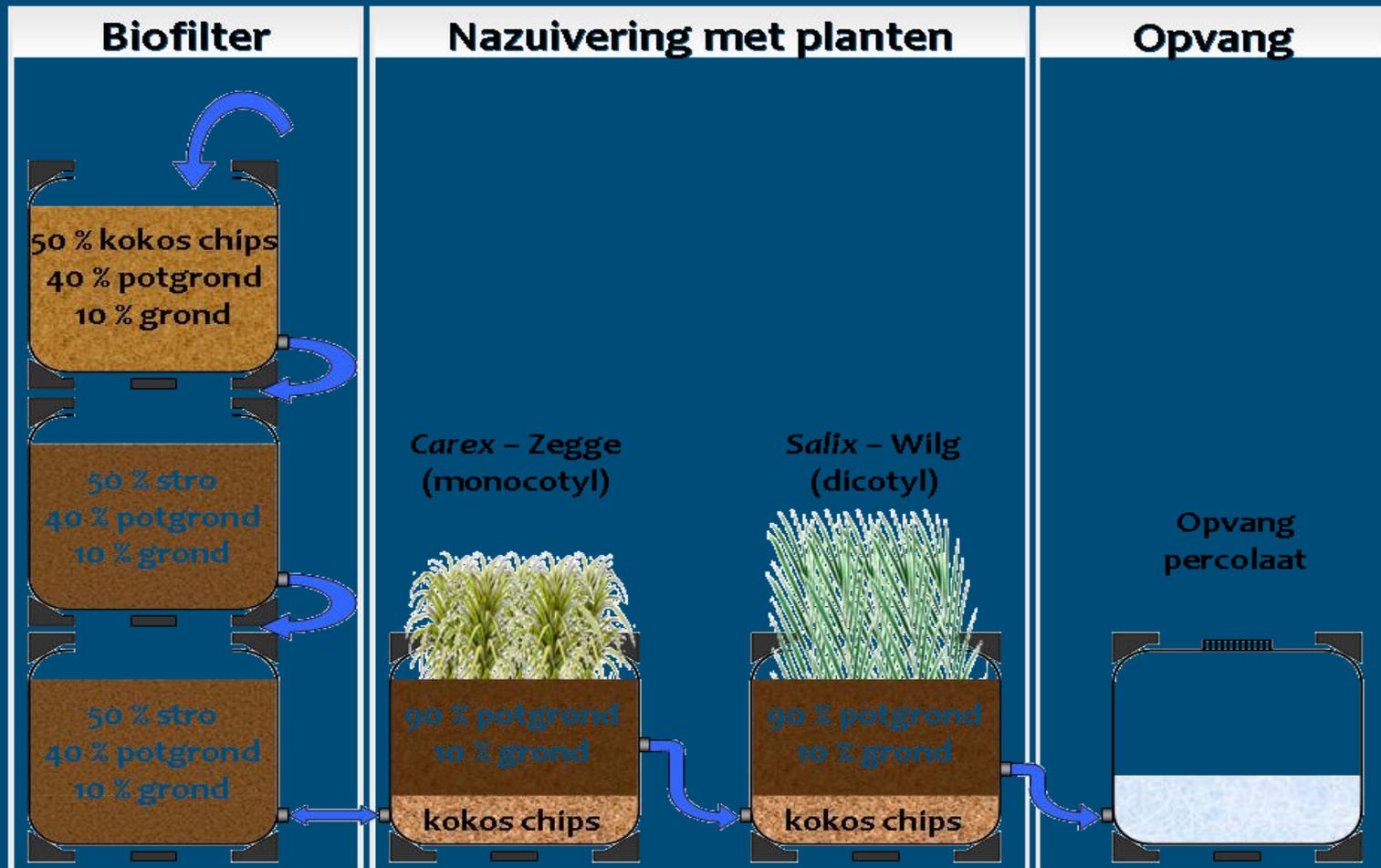
Space saving



Low budget: water cleaning with biofilter



Biofilter for purification



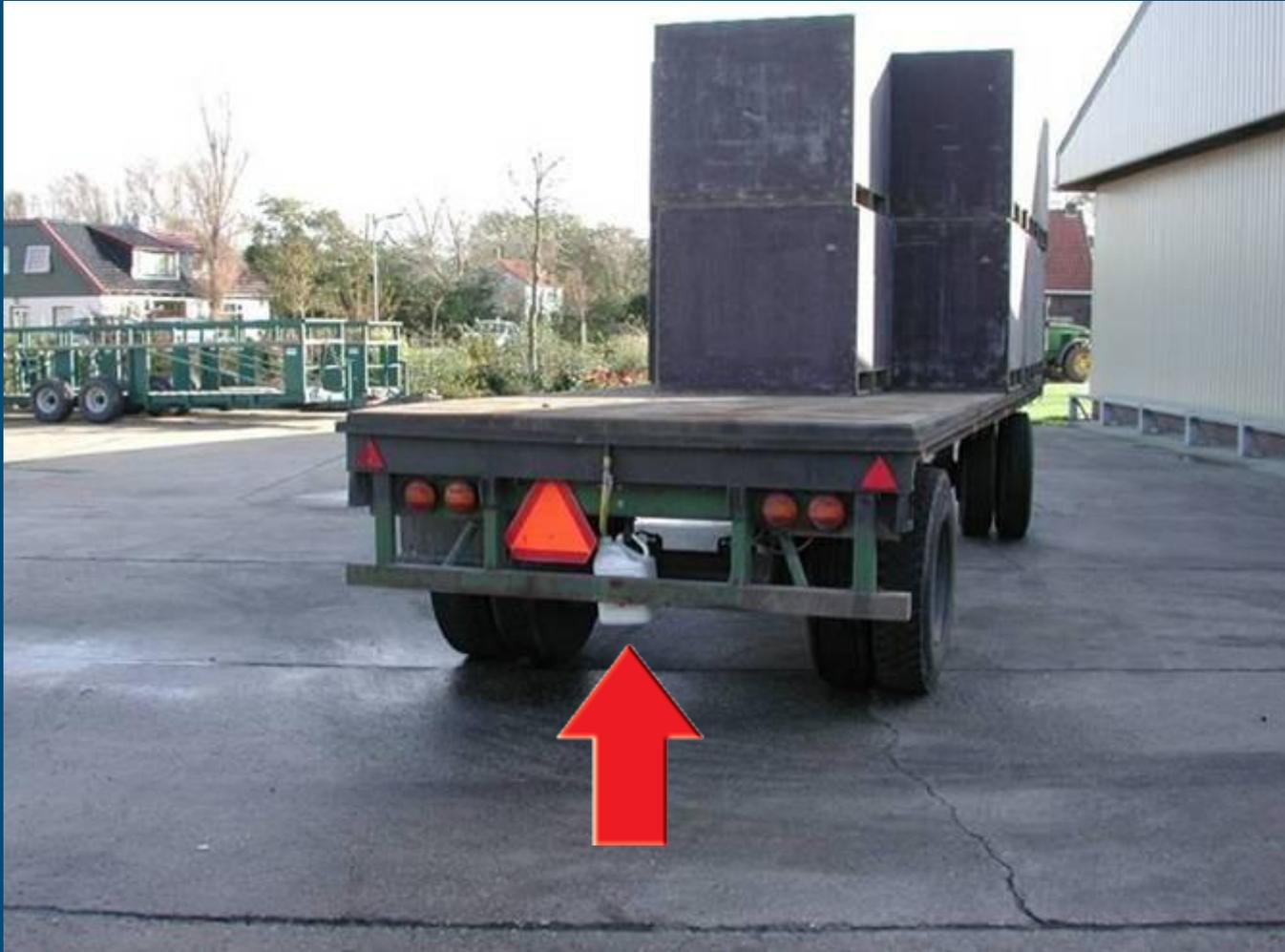
Bulb dipping before planting (flower bulbs, potatoes, onions)



carbendazim,
imidacloprid



Transport of treated products: no leakage



Always be carefull



Contaminated boxes and crates

- Wash of by rain



- Loss of cleaning water



Emission from glasshouses

Problematic in many old and modern greenhouses

Emission risks

- Drainage water!
- Condensation water
- Used substrate



Emissions from glass houses

Solutions (under development)

- Better water source / more rain water storage
- (Optimised) recirculation through water treatment
- Purification (oxidation / carbon filtration) of waste water before emission to surface water or sewage system



Comparable: drainage water container field



Transport water from fruit sorting



Rinsing harvested product: leek, flower bulbs...

Reduce water volume and optimise recirculation

- First dry cleaning (leek)
- Enlarge water bassin (dirt and fungal spores settle at bottom)



Summary point source emissions of pesticides:

- Emission risks are very divers
- Awareness is the key

- Waste water management is the central subject

- Options
 - Reduction of water volume or contamination
 - Change location of the activity



Questions?

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