

# Improvement of methods for assessing risk of pesticide leaching to groundwater within the EU

Theme: Risk assessment procedures for pesticide registration

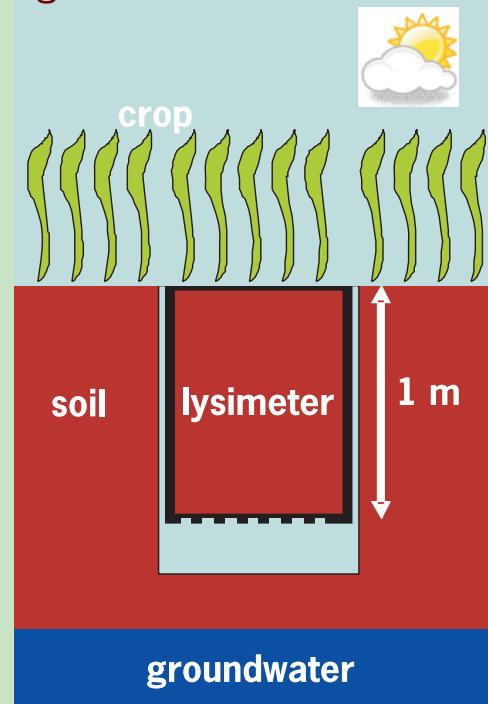
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## Problem

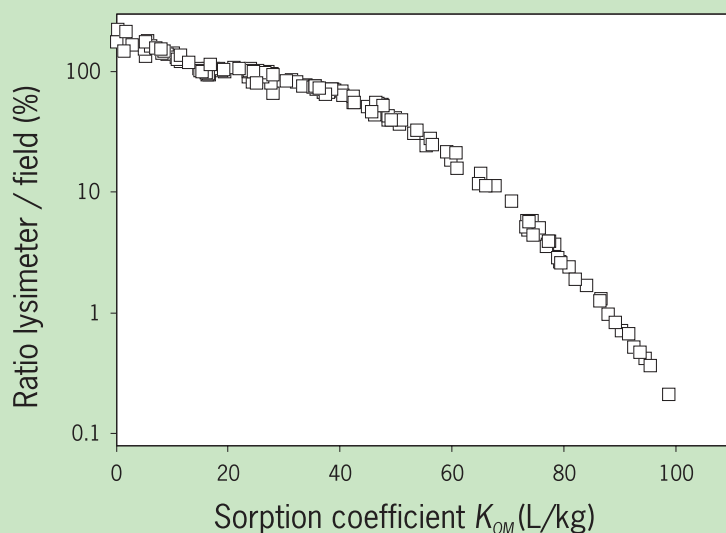
- If lower tiers in the assessment of pesticide leaching to groundwater indicate a risk, notifiers submit often lysimeter leaching studies with one soil type to demonstrate that leaching is no problem in reality
- Many EU Member States use measured lysimeter leachate concentrations directly for decision making. It is questionable whether this is acceptable

## Approach

- Purpose was to test whether pesticide concentrations leaching from lysimeters may be lower than in the field
- Leaching was simulated for one of the nine groundwater scenarios used at EU level (i.e. the FOCUS Hamburg scenario) and for 200 hypothetical pesticides with realistic but randomly generated sorption and degradation properties
- Leaching was simulated (i) for a field soil with a fluctuating ground water level using a 60-yr weather series, and (ii) for a typical lysimeter study based on a 2-yr leaching period



*Schematic representation of a lysimeter.*



*Ratio between concentrations leaching from lysimeter and under field conditions as a function of the sorption coefficient of the pesticide.*

## Results

Concentrations leaching from lysimeters may be much lower than in the field because

- There may be more time available for degradation in the lysimeter than in the top metre in the field
- For pesticides with a sorption coefficient ( $K_{OM}$ ) above 40 L/kg, a study duration of 2 year for the lysimeter is too short to measure the maximum leaching concentration

## Future use in risk assessment

Results demonstrate that measured lysimeter concentrations cannot be used directly for regulatory decision making so alternative approaches are needed.

## Communication 2008

This study was part of the activities in the FOCUS Groundwater Workgroup which develops guidance for EU risk assessment and has prompted there the need for alternative approaches.

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