

Assessment of leaching to groundwater German view on higher tier modelling and experimental approaches for submission in Germany and EU



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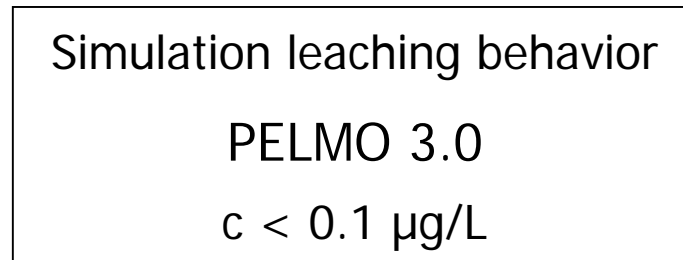
Germany: Assessment of leaching to groundwater

Tiered approach:

Tier 1

active substance, metabolite

$DT_{50} > 21 \text{ d}$, $Koc < 500$



yes



no



Rationale for using PELMO 3.0

Results of PELMO 3.0 are

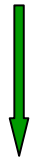
- sufficiently conservative estimation
- validated by comparison with results of numerous lysimeters

Input parameters

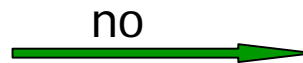
- follow FOCUS recommendations
- published (Nachrichtenblatt Deutscher Pflanzenschutzdienst 2004)

Acceptance of FOCUS_{GW} simulations in Germany

1. EU intended uses = national submitted uses ?



yes

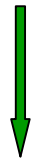


no

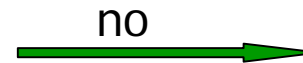
PELMO 3.0 /
higher tier

2. FOCUS-PELMO: $c < 0.1 \mu\text{g/L}$

Hamburg, Okehampton, Kremsmünster and Piacenza



yes



no

PELMO 3.0 /
higher tier

authorisation possible

Leaching to groundwater: Higher tier assessment

simulation based $PEC_{GW} > 0.1 \mu\text{g/L}$ (average annual concentration)

- higher tier modelling and experimental approaches
- German/UBAs view

Higher tier: 1. Simulation (Modelling)

Input parameters for PELMO 3.0

- tier 1: DT_{50} from laboratory studies
- higher tier: DT_{50} from field studies
 - no degradation in soil due to volatilisation, photolysis, soil leaching, plant uptake

Higher tier: 2. Studies

- lysimeter studies
 - mass balance (distribution of ^{14}C in soil, plant, water)
 - unknown metabolites can be identified in the leachate
 - NIR in leachate can trigger further (ecotox-) studies
- field leaching studies only case by case
(in accordance to lysimeter guideline)
- relevant for decision: highest measured average annual concentration in a single lysimeter or in a single well

Summary: Assessment of leaching to groundwater

- Germany: simulation PELMO 3.0
- higher tier modelling:
 - Input parameter for Pelmo 3.0 as published
- higher tier studies: lysimeter
 - results take precedence over calculation
- acknowledge of FOCUS simulation:
 - FOCUS-PELMO < 0.1 µg/L
 - PEARL, PRZM: in discussion → FOCUS Groundwater

(A comparison of FOCUS Groundwater models - where and to what degree are differences ?)