

GeoPEARL Austria

Dr. DAYTEG Joachim
Fate and Behaviour of Plant Protection Products

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Why GeoPEARL Austria?



- Risk assessment performed on Hamburg and Kremsmünster FOCUS scenarios
- No validation for Austrian conditions
- Local characteristics not taken into consideration

Goals of GeoPEARL Austria



- Risk assessment for GW contamination designed for and adapted to Austrian conditions
- Assessment of the efficiency of mitigation measures
- Deliver lists of "safe" or "unsafe" PPPs to local and regional authorities adapted to local conditions
- Supporting decision tool for groundwater monitoring
- Revision of the Worst Case scenario for Austria

Available data for parameterisation



- High definition GIS maps of Austria
- Data available:
 - Soil properties
 - Climate data
 - Crops data
- Plot size of 1 km x 1 km envisaged

Soil data (1)



- eBOD – GIS based digital maps
- Texture, humus content, pH... to depth of 1 m
- Aggregation to about 1000 profiles
 - Aggregation of humus content kept to a minimum
 - Aggregation of other parameters at a larger scale
- Hydrological data of soil estimated by pedotransfer function

Soil data (2)



- Groundwater level set to 2 m depth
- No horizontal GW flow
- About 1000 one-dimensional soil columns

Climate data



- eHYD – GIS based digital maps
- Data:
 - Precipitation
 - Temperature
 - Aggregation to 10 – 20 climatic districts

Crops data



- Obtained from AgrarMarkt Austria (AMA)
- Data from 2008 (updated every 5 years)
- Major and minor crops at cadastral level
- Percentage of crops
- GIS-data on arable land available

Parameterisation of the model



- GW level fixed at 2 m depth
- No drainage
- Probably follow FOCUS recommendations and parameters
- Quite similar to Kremsmünster FOCUS scenario
- Keep the model conservative
- Model validation using real groundwater data (e.g. annual recharge)

Missing data



- Probably crops data
- Handle them on case by case?
- Merge or copy data from adjacent plots?
- Big challenge to overlap GIS data with the percentage crop areas

Thank you for your attention