Surface runoff of pesticides in Sweden – risk assessment and mitigation

Alms
A knowledge compilation to determine:
- Importance of surface runoff of pesticides in Sweden
- Relevance of FOCUS R1 scenario for Sweden
- Possible mitigation strategies for Sweden

Background
- Pesticides are commonly found in Swedish surface waters (Figure 1)
- Mitigation aimed at safe handling of pesticides during the 1990s reduced concentrations (Figure 1)
- Diffuse sources are on the agenda for legislation, support systems and risk assessment for product registration
- Contribution from surface runoff and potential effect of mitigation measures is currently unknown

Conclusions
- There is very limited data on surface runoff in Sweden (none on pesticides)
- FOCUS R1 scenario over-estimates risks for Sweden (Figure 2)
- Surface runoff is deemed a locally important transport route for pesticides (Figure 3)
- Suggested possible strategies:
  - Identification of risk areas through GIS-based modeling
  - Locally adapted mitigation measures
  - Developing a Swedish scenario for product risk assessment
- Research should focus on:
  - Identifying main transport pathways for pesticides and the most important controlling factors
  - Monitoring effects of mitigation measures in real situations
  - Development of modeling tools for risk assessment and mitigation

References
- http://jordbruksvatten.slu.se (data from environmental monitoring of nutrients and pesticides in surface waters in Sweden)
- http://www.slu.se/ckb (Centre for Chemical Pesticides, Sweden)