WAGENINGEN UNIVERSITY & RESEARCH

contaminants of emerging concern

Decision SUpport ToolS for Risk-based Prioritization and Control of Contaminants of Emerging Concern (SUSPECt)

Rural Case: Emissions of Veterinary Pharmaceuticals from Livestock Breeding

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1. Research background

Traditionally, for risk assessment of chemicals there has been used a substance-by-substance approach, which was usually based on empirical testing of fate properties and (eco)toxicity. However, considering the fact that testing and assessment of each substance separately requires an enormous amount of resources and ignores potentially adverse impacts of co-exposures to other substances, we can conclude that there is a need on generating more innovative perspective.

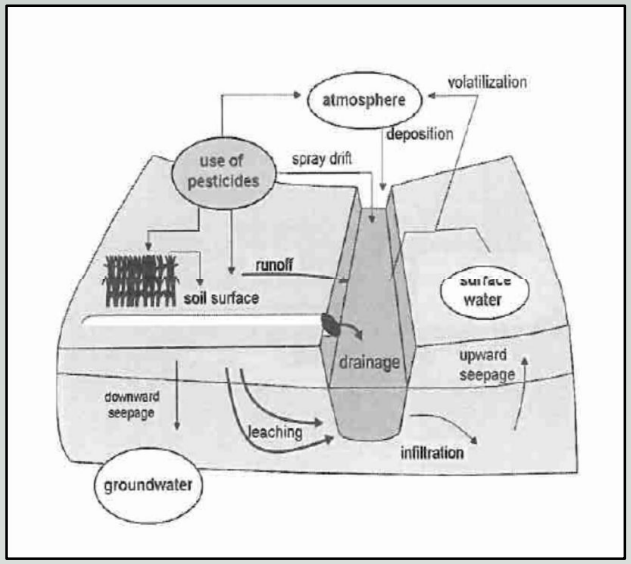


Figure 1. Circulation of pesticides in the environment

2. Main problems

- **Lack of empirical data** on the adverse effects of CEC on aquatic ecosystems and human health.
- **Lack of knowledge** about sources, emissions, fate, exposure and potential effects of CEC.
- **Assessment methods are not implemented** in a practical risk assessment framework.

How to deal with Increasing number of CEC entering the market and environment each day?

3. Objectives

Developing a set of flexible decision-support tools for:

- Location-specific analysis;
- Risk-based prioritization;
- Cost-effective control of CEC and other chemicals.

Tools **validation** regarding both **utility** and scientific output in a solution-focused context.

4. Methods

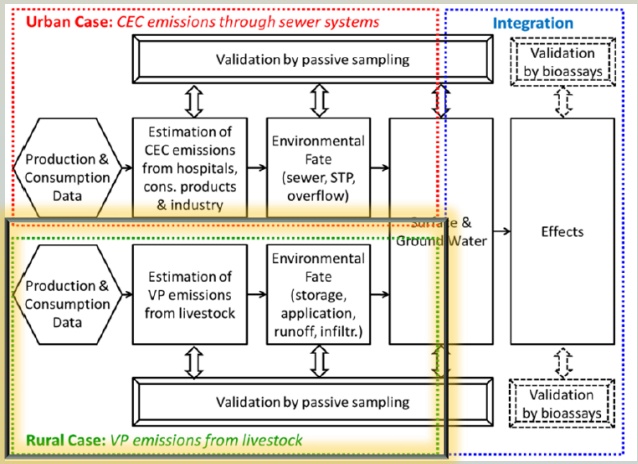


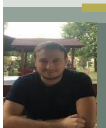
Figure 2. Structure of the SUSPECt project

For **Rural Case** the focus is on:

- Understanding what is happening in storage of manures;
- Manure application to agricultural fields;
- Potential usage of screening approach for pesticides;
- Interaction of VP with soil and soil organisms;
- Defining transport pathways in the soil-water system;
- Considering regional scale;

5. Expected results and usage

Developed tools can be used to **quantify the human** and **ecological risks**, both in **current situations** and in **future scenarios.** They can also be used to **stimulate stakeholders involvement** and to **identify cost effective measures**.



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