WAGENINGEN UR
For quality of life

Development and validation of methods for the estimation of spray drift deposition on surface water

Theme: Risk assessment procedures for pesticide registration

BO-06-010-003

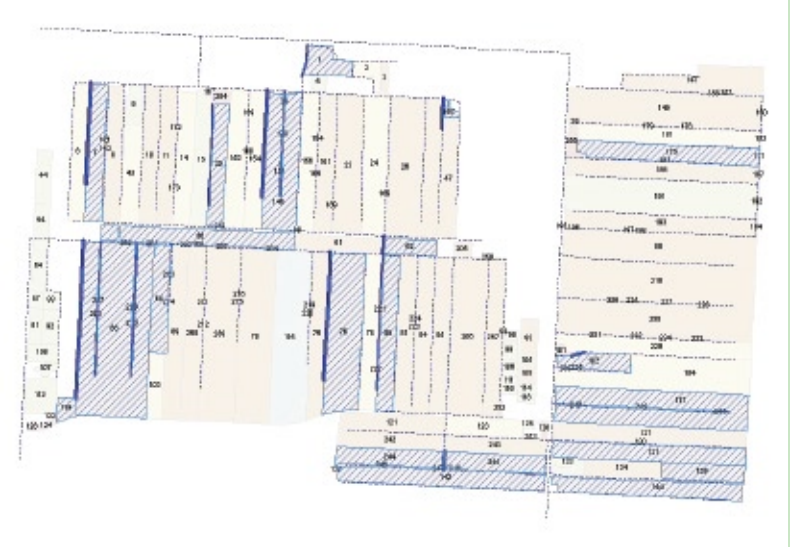
Problem

Risk assessment methodologies are to be developed, validated, reviewed or improved for the protection goal: risk to aquatic organisms. A major input route for the risk to aquatic organisms is spray drift. Differences in spray drift data and the risk to the surface water do occur between countries.

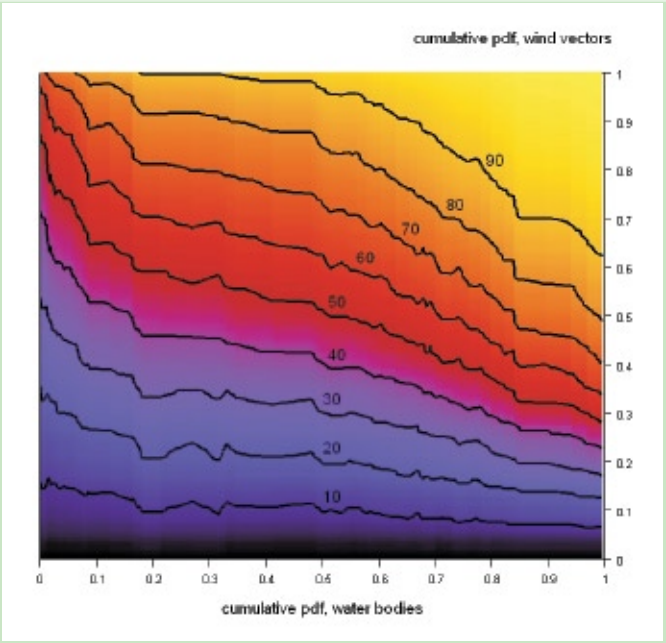
Approach

The research objective is to harmonize information on drift deposition by analyzing spray drift data and identifying the main differences.

- The results from spray drift field measurements are collected in a spray drift database to come to generalized spray drift curves to be used in the authorization procedures of crop protection products
- International spray drift data are collected and compared with the Dutch spray drift data to identify sources of differences
- Harmonization of spray drift data is prepared in international working groups (ISO)



Map of sprayed potato parcels (blue shaded) and water body segments loaded with drift deposits (blue segments, thickness of line refers to amount of drift deposition); wind direction east.



Cumulative Probability Density Functions of water body dimensions and lengths in the Netherlands and spray drift based on 10 years distribution of wind speed and wind direction to determine the 90-percentile predicted environmental concentration of surface water.

Results

- New Dutch standard spray drift deposition curves in fruit crop and arable crop spraying are presented
- First outline of a probabilistic methodology to evaluate spray drift risk at different surface water bodies
- Analyses of the exchangeability of drift reducing technology on spray drift deposition between EU member states

Future use in risk assessment

The results can be directly used for the development of a higher tier approach for aquatic risk assessment in the registration procedure for crop protection products.

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