FOOTPRINT

Functional Tools for Pesticide Risk Assessment and Management

FOOTPRINT and its potential use within the Thematic Strategy

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What is FOOTPRINT?

> An FP6 project which started in January 2006 and which is finishing this month

> 15 partners, 9 Member States

> A research project with VERY applied outcomes to support policy initiatives
  • Water Framework Directive
  • Common Agricultural Policy
  • 91/414/EEC and its revision
  • The Thematic Strategy

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What have we developed?

> 3 software tools ("the FOOTPRINT tools")
  • which provide an assessment of the risk of transfer of pesticides to water resources for any location or territory in Europe
  • which are based on state-of-the-art research models and science
  • which can be deployed anywhere in Europe
  • which can be used by all stakeholders, from farmers in the field to policy- and decision-makers

> Each of the 3 tools allow users to:
  • i) identify the dominant pathways and sources of pesticide contamination in the agricultural landscape.
  • ii) estimate levels of pesticide concentrations entering surface water and groundwater systems.
  • iii) make recommendations on how to reduce the pesticide contamination in water resources.

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3 tools, 3 scales, 3 user communities

> FOOT-NES
  • National and EU scale
  • EU and MS policy- and decision-makers, ministries, pesticide registration authorities

> FOOT-CRS
  • Catchment and regional scale
  • ‘Water quality’ managers, i.e. regional/local authorities, water agencies, water companies

> FOOT-FS
  • Farm scale
  • Agricultural advisers and farmers

> All 3 tools are coherent across scales
Methodology used

1. Development of agro-environmental scenarios
   - Characterise all agro-pedo-climatic conditions for locations where pesticides are used in the EU (!)

2. Modelling
   - Deploy the best research models to estimate the fate of a hundred pesticides in these thousands of scenarios (!)
   - Integrate all modelling results in simple-to-use software tools

3. Tool development
   - Start evaluating the tools at their scale of application
Developing agro-environmental scenarios for the whole of the EU27

Objective: to provide an extensive characterisation of European agro-pedo-climatic conditions in which pesticides are applied

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FOOTPRINT agro-environmental scenarios

- FOOTPRINT climate zones
- CORINE 2000 + NUTS level 2 statistics
- European Soil geographic database 1:1,000,000

- Combined Climate/NUTS2/CORINE 2000/soil type polygons
- > 16 climates
- > 264 FOOTPRINT soil types
- > 42 crops
- > ~ 100,000 FOOTPRINT agro-environmental scenarios

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The FOOTPRINT concept

Range of pesticides

MACRO
- drainage, leaching

PRZM
- runoff, erosion

(different expressions in the various tools)

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The FOOTPRINT concept

Giant database of modelling results

'Pesticide loss'
(different expressions in the various tools)
Some screenshots of FOOT-FS
What does FOOTPRINT account for?

- Equipment
- Products
- Climate
- Landscape elements
- Land management
- Crop
- Soil
FOOTPRINT and environmental indicators

> FOOTPRINT is the ideal material to support the calculation of risk indicators for pesticides
  - Integrates combined effects of soil, climate, crops, pesticide properties, management options
  - Scientifically robust
  - Supporting databases available for cross-EU and MS deployment
  - Can use nationally-collected statistics

> There are many ways of calculating environmental indicators

> The current FOOTPRINT tools provide indicators based on a comparison between concentrations for exposure and concentrations for effects

> More advanced indicators based on FOOTPRINT are under active study and development (within FOOTPRINT, in the European project TEAMPEST and in research groups)
How can FOOTPRINT support the Thematic Strategy?

> The provision of concrete tools for the implementation of the new policy
  • Identification of risk areas and risk situations (products, practices, soils, location, application periods)
  • Suggestions for tackling risks where identified
  • Support of well-informed decisions at all levels (farmer, authority, policy makers)

> The establishment of robust environmental indicators


Regulation on the collection of statistics on PPP COM(2006) 778 final


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From a practical point of view

> At the level of the European Commission
  • The statistics collected by DG Eurostat as part of the regulation
  • …can be used to calculate FOOTPRINT-based risk indicators
  • …to evaluate the progress of MS with regard to the objectives of the Thematic Strategy

> At the national level
  • FOOTPRINT can very effectively support National Action Plans in ALL member states at the
    − national level
    − catchment level
    − and farm level
    − in a consistent, cross-scale, manner
  • FOOTPRINT can also support national registration of pesticides
The future of FOOTPRINT

> Very strong call from numerous stakeholders and end-users to "not let FOOTPRINT die" with the end of the European funding

> Creation of a new organisation "FOOTWAYS" which brings together internationally-reknown scientists with experienced practitioners

> Objectives

• Disseminate the FOOTPRINT tools and science in the EU27 and provide training and long-term support. The EU funded tools will be distributed and supported for free by FOOTWAYS.

• Apply the FOOTPRINT approach to other environmental compartments (terrestrial, atmosphere, human) and to other contaminants

• Develop specific software tools to support EU/national policies (National Action Plans) and to meet specific demands for advanced tools partly based on FOOTPRINT (e.g. pesticide registration, catchment management)
Take-home messages for today

> 3 FOOTPRINT tools

> The FOOTPRINT methodology and tools are state-of-the-art and designed for stakeholders and end-users

> FOOTPRINT can very effectively support the implementation of the Thematic Strategy at the EC and national levels

> FOOTPRINT will be supported in the long term by leading experts in the field
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