New software to standardise risk assessment of pesticide pollution

Researchers have developed a computer tool to help standardise risk assessment procedures for pesticides across Europe. The software combines climate, soil and crops data specific to each location to help understand the potential impact of each pesticide used.

Pesticides used in farming can contaminate surface and ground waters through a number of means: runoff, infiltration and leaching, for example, and can have a range of impacts depending on how they are dispersed. Extensive and harmonised data are needed to develop appropriate policies which can avoid some of the effects of pesticide contamination.

The FOOTPRINT project, funded by the EU, has developed a number of different scenarios, 7961 in all, each representing a specific type of agricultural area. For each scenario, a unique combination of weather patterns, soil characteristics and crop growth characteristics are specified. The specifications will determine what happens to pesticides after they have been applied. So for example, a user of the FOOTPRINT service can find a scenario which matches an area local to them and discover what the likely fate of a pesticide will be in that area.

The software can be used at all levels, from the farm scale through to catchment management and regional and European scales. The project includes information on routes of contamination by pesticides in agricultural landscapes and the likely concentrations of pesticide contamination entering water bodies. It can be used to develop programmes which reduce the impact of pesticide pollution.

To develop the FOOTPRINT software and characterise the 7961 unique scenarios in Europe, the researchers:

- Divided Europe into 16 separate climatic zones. This was achieved by studying climate data from 1961-1990 and identifying key climatic influences on pesticide pollution.
- Characterised different types of agricultural land use in Europe, using EU statistical data on land use and crop data. Periods of pesticide applications could be estimated by considering the growing conditions of the crops.
- Defined different soil types in terms of their potential to transfer pesticides to surface waters.

These scenarios should also be suitable to investigate other water pollutants, such as nitrates and phosphorus. These can pollute water as a result of similar climate, soil and cropping conditions in the agricultural landscape.

Further work is needed to develop more refined scenarios. For example, this study does not include intensive horticultural areas covered by glass or polythene. In addition, socio-economic factors can have an influence on the scenarios; different agricultural practices, such as large-scale mechanised or small-scale family farming, can play a role in how pesticides are dispersed in the environment.

To access the FOOTPRINT software, please visit: [www.eu-footprint.org/FOOT_tools.html](http://www.eu-footprint.org/FOOT_tools.html)

1. FOOTPRINT (creating tools for pesticide risk assessment and management in Europe) was supported by the European Commission under the Sixth Framework Programme. See: [www.eu-footprint.org](http://www.eu-footprint.org)


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