

## Sammendrag af anbefalingerne fra "Skellen mellem pesticidpunktkilder og fladekilder", herunder hvad forventer vi at finde fra de to kildetyper - DTU Orbit (09/11/2017)

### Sammendrag af anbefalingerne fra "Skellen mellem pesticidpunktkilder og fladekilder", herunder hvad forventer vi at finde fra de to kildetyper

Pesticides are now detected in more than 35% of all groundwater monitoring wells and more than 25% of drinking water wells in Denmark, and are the most common cause of closure of drinking water wells due to chemical contamination. There are two main types of pesticides sources: diffuse sources, primarily resulting from the use of pesticides in agriculture; and point sources such as those resulting from spills, farm machinery washing, or landfill deposition of pesticide wastes.

This project aimed to develop methods that can be used to determine whether pesticides detected in monitoring and drinking water wells originate from point or diffuse sources. This is particularly important given that the Danish Regions are responsible for point sources, while diffuse application of pesticides is regulated by restrictions on their use. In order for the Regions to administer pesticide point sources, they require methods to identify the source type from monitoring data.

This project was funded by the Danish Environment Protection Agency and was conducted as a collaboration between Orbicon A/S, GEUS and DTU Environment. The project consisted of 4 parts: i) a description of the consumption and use of pesticides in Denmark; ii) a statistical analysis of the pesticide monitoring data held in the GEUS database Jupiter; iii) a modelling study, which aimed to determine the processes leading to pesticide contamination, explain the spatial and temporal variability in pesticide observations and include that knowledge in a series of conceptual models, and iv) to summarise knowledge of pesticide point sources in Denmark.

The project showed that pesticide sales peaked in the late 1970s, and that the types of pesticides used have changed greatly over time as new products became available, and older products were banned. The statistical analysis of monitoring data showed that there are large differences between pesticide concentrations detected from point and diffuse sources, and the modelling study showed how factors such as pump rate, pesticide type, geology and location of the monitoring/drinking water well affect observations. The project report concludes with a set of guidelines for determining the origin of pesticides detected in groundwater.

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