

Modelling the effectiveness of unfertilized field edges in the Netherlands

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In the Netherlands we are currently carrying out field experiments at five locations differing in geohydrological conditions, to determine the effectiveness of dry unfertilized buffer strips (BS) (see accompanying contribution of Heinen, Noij & Heesmans). Since the number of locations is small we could not vary all factors that determine the BS effectiveness (BSE), such as ditch distance and aquifer thickness. So we need additional tools for scaling up field results and for the assessment of the spatial variability of BSE. The model study aims to identify the dominant key factors, which control the nutrient load from these unfertilized strips. The measurements of the field study will be used to calibrate and validate the model calculations. The model calculations will provide estimates for the variation in BSE over the Netherlands according to varying soil conditions and hydrology. For this purpose we are using a) detailed mechanistic simulation models that describe hydrology and nutrient dynamics, and b) simplified analytical models. We will present the first results, focussing on the latter type.