Experimental determination of the effectiveness of unfertilised buffer strips in the Netherlands

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In the Netherlands we are investigating the effectiveness of unfertilized buffers trips along property boundaries in reducing the load of P (and N) towards the adjoining open water system. The study was initiated in response to an agreement made between the Netherlands and the European Union. In principle, Brussels wants buffers trips that are at least 5 m wide to be created along water ways, just as is now the case in other European countries. The Netherlands has doubts about the effectiveness of buffer strips in flat situations, but does not want to exclude the possibility of implementing the measure with an eye to the water quality targets specified in the EU water framework directive. The Netherlands has mainly permeable soils in a flat landscape, which has little surface run-off, or drained soils. This means that most of the discharge probably passes underneath the buffer zone. This certainly applies to plots of land with pipe drains. In order to take the effects of soil structure and hydrology into account, we make a distinction between six geohydrological situations. In each of these situations we have chosen an experimental site where we determine the load towards the adjoining ditch for a reference treatment and for a buffer strip treatment. The relative difference between the two measured loads then gives an estimate for the effectiveness at that site. Upscaling using (meta)models will give insight in possible locations in the Netherlands where the measure is useful and where not. We will present the chosen five locations, the general experimental set-up, and the first, preliminary results.