

PHOSPHORUS TRANSFER IN AGROECOSYSTEMS

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Diffuse (non-point source) transfer of phosphorus (P) from soil to surface water (and groundwater) in overland flow (runoff) and subsurface flow has been the subject of extensive research in recent years. This has been prompted by mounting evidence that increased P transfer from agricultural land to water bodies can have adverse impacts on water and environmental quality. In particular, the presence of elevated P concentrations in streams, rivers, lakes and estuaries can contribute to accelerated eutrophication, which in turn results in significant limits on water use for drinking and fishing, as well as for industrial and recreational use. Achieving the correct balance between maintaining plant productivity and minimising P transfer is a vital component of strategies for the long-term sustainable management of intensive agroecosystems. This paper presents an overview of current research on P transfer from agricultural land, with an emphasis on relationships between P status and transfer at different scales. This includes description of the process and significance of P loss at the soil, field and catchment scales in different ecosystems. The development and implementation of management practices designed to effectively reduce P transfer from agricultural land will also be described and discussed.