

Abstract

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Impact of crop management on nutrient losses

Gitte H. Rubæk¹, Goswin Heckrath¹, Caroline van der Salm², Oscar Schoumans², Uffe Jørgensen¹, Christen D. Børgesen¹, Peter Sørensen¹

¹ Department of Agroecology and Environment, University of Aarhus, Denmark

² Alterra, Wageningen, the Netherlands

E-mail: Gitte.Rubaek@agrsci.dk

Abstract

Crop management influences the risk of soil erosion, surface runoff and has direct impact on the size of the various N and P pools throughout the root zone. Crop management therefore has multiple impacts on the risk of N and P losses from agricultural land and development of productive crop management strategies, with improved nutrient utilisation and reduced losses are therefore an important topic for research and development in the years to come. The need for new crops and crop management strategies is reinforced by the expected changes in climate, since climate change in many regions will increase the potential for nutrient losses and at the same time, due to the accompanying changes in growth conditions, offer new opportunities for designing cropping systems with tighter nutrient cycles.

Improved crop management for mitigation of nutrient losses is typically introduced as “second step mitigation to be implemented when basic nutrient management strategies have eliminated excessive nutrient supply to the fields without reducing nutrient losses sufficiently. In this COST action the mitigation options allocated to the crop management category include options, where improved crop management is used to protect the fields against nutrient losses through erosion and surface runoff (e.g. Strip cropping, cover crops), to catch and immobilise nitrogen during the main run-off season in winter (catch crops) or to reduce P content in soils with excessive P status (P mining).

This presentation will describe crop management as a tool to reduce nutrient losses. Relations and interactions with other agricultural management options will be discussed. Focus will be on crop management as a tool to manage soil N and P pools. Possibilities and effectiveness of P mining against P leaching losses will be discussed based on data from a pilot modelling exercise using Danish soil data as input to the Dutch PLEASE model.