# MANAGEMENT PRACTICES TO REDUCE NITRATE LEACHING FROM GRAZED PASTURES

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This review paper gives an outline of the factors affecting nitrogen losses from grazed pasture systems. It highlights the importance of animal urine patches coinciding with winter drainage as key determinants of nitrate leaching losses. The paper also covers the importance of accounting for the whole-farm system in assessing overall nitrogen efficiency, e.g. including areas for winter grazing and forage cropping in estimating total nitrate leaching.

A range of options for reducing nitrate leaching losses from grazed pasture are discussed. These include practices to optimise plant and animal use of nitrogen inputs (especially from fertiliser and supplementary feed). In addition, potential practices to increase the overall efficiency with which nitrogen is cycled, including manipulating the soil (e.g. carbon addition), plant (e.g. plant composition) and animal (e.g. cattle versus sheep versus deer) components of the nitrogen cycle are covered.

Practical strategies for decreasing nitrate leaching from animal urine include strategic winter management (e.g. grazing off-farm, stand-off pads, feed-pads) and nitrification inhibitors. Emphasis is given to the longer-term implications of these specific practices on nitrogen cycling and nitrate leaching losses.