



Fate of livestock derived organic matter in grassland soils

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Approximately 90 million tonnes of livestock-derived organic matter (LD-OM) are applied annually in the UK to agricultural land, with grazing livestock returning even more OM as dung and urine to the soils. Grasslands comprise more than 50% of UK agricultural land (ca. 5 million ha). LD-OM additions help build soil carbon stocks, but can result in enhanced loss of organic matter (OM) and associated nutrients, pollutants and pathogens to water. Such losses have impacts on soil and water quality, ecological status and human health. Information and the impacts and fate of livestock derived OM is becoming increasingly important, in view of UK climate change predictions of variations in rainfall patterns and intensities (e.g. wetter UK winters with more frequent and more severe storm events), the increasing quantities of OM (and nutrients) being targeted at agricultural land, and impacts of European legislation on slurry management in nitrate vulnerable zone (i.e. a greater proportion of slurry has to be applied in spring and summer). This talk will highlight of the above issues relation to the fate and impacts of LD-OM in grassland systems, as explored using various novel analytical techniques.