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THE USE OF PEAT-BASED BIOCHAR AS AN ADDITIVE TO MANURE MANAGEMENT SYSTEMS TO REDUCE GREENHOUSE GAS EMISSIONS

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Climate change is a naturally occurring phenomenon which is affected by anthropogenic greenhouse gas emissions. The agricultural sector accounts for 10-12% of global emissions. Out of which manure management causes almost 10% of global agricultural greenhouse gas emissions, making it an important target area for mitigation strategies. The Irish agriculture sector accounts for nearly 33% of the total national greenhouse gas emissions in Ireland and is obliged by national and EU-Kyoto Protocol regulations to lower these emissions. The use of biochar has been recognized in the abatement of greenhouse gas effluxes in the manure management cycle. Biochar is the product of the thermochemical conversion of biomass in a process called pyrolysis. Although the production from many common sources is well understood, there remains considerable uncertainty over the efficacy of biochar production from peat. At the moment, peatlands (blanket and raised bogs) cover approximately 17% of Ireland, suggesting that a small portion of the overall peat land area could provide a significant feedstock bio-resource for biochar production. In this study the profile and character of peat-based biochar relative to other feedstock sources will be explored, its potential to mediate reductions in greenhouse gas emissions for manure management systems will be evaluated. Initial analysis will focus on peat samples selected from the upper layers of a drained raised bog and the extracted fibre content of this peat as a biochar feedstock.

BIOGRAPHY

Josephine Getz is recently pursuing PhD at Dublin Institute of Technology, after completing master's degree from Humboldt University of Berlin in 2016. Josephine also worked at The University of Edinburgh as a pyrolysis research assistant.

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