

Gypsum reduces methane emission during the storage of pig slurry

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Abstract

Methane is the most prevalent greenhouse gas from animal agriculture. The main source of methane emission is ruminant metabolism; however, animal manure also makes a significant contribution. Manure management can offer possibilities for emission reduction. The influence of sulfur, in the form of gypsum (CaSO_4), on methane emission from liquid pig manure during storage was determined at the laboratory scale. Manure was stored in open vessels (75 kg/vessel) over a period of 14 weeks. Three different dosages of gypsum, 1, 2 and 3 kg per vessel, were added at the beginning of the experimental period. There was a linear correlation between methane concentration and amount of added gypsum. Adding 4% gypsum to pig slurry by mass (3 kg) almost halved methane emission. Nearly all nitrous oxide emissions were eliminated by the gypsum treatments.

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