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 (CaSO4), 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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