ANIMAL DIETARY MANIPULATION AND THEIR MANURE MANAGEMENT SYSTEMS TO MITIGATE GREENHOUSE GAS EMISSIONS: A REVIEW PAPER

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Animal production is a significant source of greenhouse gas (GHG) emissions worldwide. This current paper was reviewed on the method of animal dietary manipulation and their manure management practices for mitigating methane (CH_4) and nitrous oxide (N_2O), i.e. non-carbon dioxide (CO_2) GHG emissions from enteric fermentation and animals manures. The chemical composition of animal dietary is an important factor which affects rumen fermentation and GHG emission by the animals. Feed additives have been comprehensively studied *in vitro* and *in vivo* for their methane mitigating potential. The use offodder trees has been developed through the process of pelleting; *Leucaena leucocephala* leaf pellets (LLP), mulberry leaf pellets (MUP) and mangosteen peel and/or garlic pellets, can be used as good sources of protein to supplement ruminant feeding. These approaches could help to decrease rumen protozoa and methanogens and thus mitigate the production of methane gas. GHG mitigation from manure should be targeted at farm specific management practices. Anaerobic bio-digesters, covered lagoons or manure storages with methane flaring systems or small electricity generators, land application at appropriate time are gaining popularity as viable technologies to abate GHG emissions from manure storage. Considerable additional research is still needed in order to use both conventional and non-conventional feed resources, their potential to affect green house gas emission by the animals. Manure GHG emission mitigation practices should be evaluated for co-benefits and pollution swapping effects at a whole farm level.

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