

Impact of Animal Nutrition on Global Warming

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Abstract

Nutrition is defined as the interrelated steps by which a living organism assimilates food and uses it for growth, tissue repairs and replacement. There is a strong relationship between excessive nitrogen in the atmosphere and the location of intensive farm animal production areas. Upward trend in animal production has led to increasing pressure on pasture; consequently there is greater competition for available forage and compaction of the soil. Single stomach animals like chicken excretes about 100g daily, and 36kg yearly faecal nitrogen. As various experts have identified, reducing GHG emissions is both urgent and critical. As the largest anthropogenisers of land and responsible for more GHG emissions than transportation, the animal production sector must be held accountable for its many deleterious impacts, and changes in animal agricultural practices must be achieved. Improving animal nutrition is therefore expedient to reduce urinary and faecal nitrogen which in turn is proportionally reduces Nitrogen emission into the air.

Key words: Green house gases, Nutrition, Fertilizer, Feed Production, Farm Animal Waste, Fermentative Digestion, Ruminants

INTRODUCTION

Nutrition was defined as the interrelated steps by which a living organism assimilates food and uses it for growth, tissue repairs and replacement (Morrison, 1950). However, what is assimilated? It is nutrients inherent in the food. A nutrient refers to any chemical element or compound in the diet (or giving parent rally) in special cases) that support normal reproduction, growth, lactation or maintenance of life processes. The six classes of nutrients are water, proteins and amino acid, carbohydrate, lipid, vitamins and inorganic elements (National Research Council. 2001). In an attempt to meet the nutrient needs of animals and consequently ensures food security for man, a lot of agricultural interventions were practiced, all having far reaching impart on global warming (National Research Council. 2003).

Animal nutrition may therefore be define as the interrelated steps by which animals or livestock assimilates food and uses it for growth, tissue repairs and replacement. It may also be define as the process of ingestion, digestion ,absorption and assimilation of food in animals (Havenstein, 1994).

Global warming refers to an increase in average global temperatures, which in turns causes climate change, such as changes in seasonal temperatures and wind velocity, and the amount of precipitation and humidity for a given area or region(U.S. Environmental Protection Agency

2008). Climate change can involve either cooling or warming.

Global warming and climate change has been facilitated by three major gases, Carbon dioxide (CO₂),methane(CH₄) , and nitrous oxide (N₂O) (Steinfeld, 2006). In naturally occurring quantities, these gases are not harmful; their presence in the atmosphere helps to sustain life on planet by trapping some heat near the Earth surface. Over the past century, however, human activities have added additional Green House Gases to the atmosphere, contributing to global warming climate change. The global warming potential (GWP) of each of these gases differs. CO₂ has been assigned a value of one GWP, and the warming potentials of other gases are expressed relative to its power on a CO₂-equivalent basis (Paustian 2006).

CO₂ has the most significant direct warming impact in the atmosphere for two reasons;

(1) The sheer volume of its emissions.

(2) Its persistence in the atmosphere.

While some GHGS have a half-life of decades, the half-life of Carbon dioxide is at least 100 years (IPCC, 2001). Recent studies have implicated activities within the animal agriculture as a major source of CO₂ emission (Wang zhoghua *et al.*, 1999). These activities are products of human interventions in an attempt to ensure adequate nutrition for farm animals.