

**RUMINANTS AND GREENHOUSE GASSES: SUSTAINABLE
FEEDING STRATEGIES TO BALANCING THE ISSUES**

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Domestic ruminants contribute 16.5 % of the total methane emission to the environment and 3.5% of the global warming effect. Methane emission needs to be reduced by 10-20% to stabilize the methane concentration in the atmosphere. Emission of methane from ruminants can be reduced by two ways; reducing per animal emission by efficient fibre digestion and reducing the number of ruminants by efficient nutrient utilization. Feeding strategies based on fossil-fuel-demanding concentrate diets produce more CO₂ and consume valuable natural resources while reducing methane. The most widely used second feeding strategy uses low quality forages and agro-industrial by products. Even though this practice reduces the problems associated with the first one, it emits more CH₄ due to the deficiencies of many critical nutrients required for efficient microbial activity in the rumen. These critical nutrients are N, minerals such as P and S, readily available carbohydrates, true proteins and rumen undegradable proteins. Protozoal activity and low undegradable protein levels reduce both the quality and quantity of the amino acids and other nutrients absorbed in the small intestine. The composite result of the second feeding practice is increased total CH₄ emission. Among the solutions discussed in this paper in addressing those problems, tree legumes could play a pivotal role. It is concluded that feeding strategies for ruminants should be based on materials such as forages and agro-industrial-by products that consumes less fossil fuels and natural resources. However, unless the problems associated with these resources are not properly corrected, this strategy would be countered productive.