



Greenhouse gas emissions from livestock

09/10/2014

Characterization of breed-specific additive and heterosis effects on beef sensory and leather quality traits

Industry Sector: Cattle And Small Stock

Research Focus Area: Sustainable Natural Resource Utilization; Livestock Production With Global Competitiveness

Research Institute: Tshwane University Of Technology, University Of Pretoria

Researcher: Mr CJL Du Toit

Research Team:

Title	Initials	Surname	Highest Qualification
Prof	WA	van Niekerk	PhD
Dr	HH	Meissner	PhD
Dr	L	Otter	PhD

Final Report Approved: 2014

Aims Of The Project

- To calculate on a regional basis the enteric methane emissions from all relevant livestock sectors
- To calculate on a regional basis the methane emissions from livestock manure
- To calculate on a regional basis the nitrous oxide emissions from livestock manure

Executive Summary

There are increasing concerns about the impact of agriculture and livestock production on the environment. The objective of the study was to estimate methane and nitrous oxide emissions of South African livestock industries during 2010 on a provincial and national basis. The study focused on direct methane (CH₄) and nitrous oxide (N₂O) emissions originating from enteric fermentation and livestock manure management systems. Both methane and nitrous oxide are potent greenhouse gasses with 25 and 310 times the global warming potential of carbon dioxide. The Intergovernmental Panel on Climate Change (IPCC) Tier 2 methodology adapted for tropical production systems was used to calculate emissions.

The Tier 2 methodology defines animals, animal productivity, diet quality and management circumstances to support a more accurate estimate of feed intake for use in estimating methane production. Livestock, including privately owned game, emitted and estimated 1330.6 Gg of CH₄ and 3.28 Gg of N₂O during 2010. In South Africa, the principle species comprise of cattle, game and sheep producing collectively an

estimated 95% of the total livestock emissions. Commercial beef cattle were the largest contributors of methane followed by emerging and subsistence cattle, sheep, game, dairy cattle, goats and feedlot cattle with 527 Gg, 276 Gg, 167 Gg, 131 Gg, 130.5 Gg, 40.7 Gg and 30 Gg of methane respectively. The poultry industry emitted the highest amount of N₂O producing an estimated 2.61 Gg followed by dairy cattle, horses and pigs with 0.54 Gg, 0.09 Gg and 0.04 Gg of N₂O respectively. The Eastern Cape, Kwa-Zulu Natal and the Free State were the provinces with the highest GHG emission profiles, incorporating all species, producing 24.3%, 15.3% and 14.9% of the total national emissions.

Please contact the Primary Researcher if you need a copy of the comprehensive report of this project – Linde du Toit on linde.dutoit@up.ac.za

■ Cattle and Small Stock, Livestock Production, Natural Resource Utilisation, with global competitiveness

◆ 2014, duToit, Paper, TUT, UP

> Epitope mapping of two heartwater proteins

DEADLINES for RESEARCHERS 2021

Proposals for 2021: TBC

Progress reports: 28 Jan 21

Final reports: 29 Jan 21 Final includes comprehensive report and popular article

COMMITTEE MEETINGS for 2021

RMRDSA CSS Planning - TBC

Project Committee - TBC

Pork Planning - TBC



Calendar

Apr 2021						
Sun	Mon	Tue	Wed	Tur	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

PORK Priority Areas

Cattle & Small Stock Programmes

1 Sustainable natural resource utilisation

2 Improvement of Livestock production and forage

3 Management of agricultural risk to create a resilient Red Meat sector

4 Sustainable health and welfare for the Red Meat sector

5 Enhancement of production and processing of Animal Products

6 Consumer and market development of the Red Meat sector

7 Commercialisation of the emerging sector

