



sasas
BLOEMFONTEIN
2019

51st CONGRESS OF THE SOUTH AFRICAN SOCIETY FOR ANIMAL SCIENCE

ECONOMIC MANAGEMENT SCIENCE (EMS) BUILDING
UNIVERSITY OF THE FREE STATE

10 – 12 JUNE 2019

WELCOMING

The 51st SASAS Congress with the theme “Managing the ecological footprint of livestock through efficient production” are held from 10 to 12 June 2019 at the University of the Free State in Bloemfontein. Major challenges are associated with climate change and the environmental impact of the agricultural sector. Concerns are frequently raised about the role of modern technology in animal production, welfare and ethical treatment of animals, the degradation of natural vegetation and loss in biodiversity, use of water in a water-scarce country, impact of livestock products on human health, and more recently – the contribution of livestock to greenhouse gas emissions. While these aspects might shed a “long shadow” on livestock production, it is indisputably clear that the world will need almost double the current food supply by 2050 to feed the ever increasing human population. This improved production outputs needs to be achieved by using less land, water and available energy, while ensuring that the degradation and pollution of natural resources are limited. The Agriculture sector must thus comply with a phenomenon called the “Great Balancing Act” by supporting further economic development and uplifting the nutritional status of approximately 100 million undernourished people in the Southern African Development Community (SADEC). Given these multi-disciplinary challenges within the Agricultural industry, it is clear that a scientific approach would be the only viable option to improve the efficiency of livestock production. The theme of the congress therefore aims to address these effects within welfare, ethical and climate constraints.

A black cow stands in a lush green field under a warm, orange sunset sky. The background shows rolling hills and a few trees. The overall mood is peaceful and rural.

CONTENTS

MONDAY | 10 JUNE 2019

08:00	Registration
09:30	SASAS council meeting
12:00	Opening and welcome
12:30	Plenary session
13:45	Light lunch
14:00	Plenary session
16:30	Student quiz
18:30	Informal Meet and greet social function

TUESDAY | 11 JUNE 2019

08:00	Registration
08:30	Scientific program
15:30	SASAS Annual General meeting
18:30	Gala Dinner

WEDNESDAY | 12 JUNE 2019

08:00	Registration
08:30	Scientific program
15:00	Closure & Departure

51st CONGRESS OF THE SOUTH AFRICAN SOCIETY FOR ANIMAL SCIENCE PROGRAMME

DAY 1 - 10 JUNE - PLENARY SESSION - AUDITORIUM

09:30 - 11:30	Council meeting (Venue A102)
08:00 - 12:00	Registration
SESSION 1	CHAIRPERSON: CONGRESS CHAIRMAN
	Dr Foch-Henri de Witt
12:00 - 12:10	Opening and House rules: Congress chairperson – Dr Foch-Henri de Witt
12:10 - 12:20	Welcome: UFS Rectorate – Prof Francis William Petersen
12:20 - 12:30	Welcome: President SASAS – Prof Esté van Marle-Köster
12:30 - 13:15	Keynote address 1: Dr Christien Engelbrecht – Climate change over South Africa: impact on livestock
13:15 - 14:00	Light Lunch @ EMS building
SESSION 2	CHAIRPERSON: SASAS PRESIDENT
	Prof Esté van Marle-Köster
14:00 - 14:45	Keynote address 2: Dr Frikkie Maré – Managing the water footprint of beef through efficient production
14:45 - 15:30	Keynote address 3: Prof Michiel Scholtz – Breeding strategies to lower the carbon footprint of livestock
15:30 - 16:20	Coffee/Tea

16:15 – 16:30	Honorary President address: Mr Frans Naude
16:30 – 18:30	SASAS Student quiz: Quiz Master – Prof Khatu Nephawe
18:30	Informal Meet and Greet social function @ Wynand Mouton Foyer

DAY 2 - 11 JUNE - PLENARY SESSION - AUDITORIUM

08:00 – 08:30	Registration
SESSION 3	CHAIRPERSON:
	Prof Michiel Scholtz
08:30 - 09:15	Keynote address 4: Prof Cathy Dwyer – Can animal welfare contribute to improved production efficiency?
09:15 - 10:00	Keynote address 5: Prof Vincent Ducrocq – Genomic evaluation of dairy cattle – past, present and future
10:00 – 10:30	Keynote address 6: Dr Pradish Rampersadh – Registration, regulation and SACNASP interaction with the SAVC
10:30 - 11:15	Coffee/Tea & Poster Session (G3, LG7, LG8)

DAY 2 - CONCURRENT SESSIONS

SESSION 4 AUDITORIUM QUANTITATIVE GENETICS: DAIRY

CHAIRPERSON:	Prof Frikkie Nesor
11:15 - 11:45	Prof Norman Maiwashe - The genomic evaluation of farm animals in Southern Africa
11:45 - 12:00	M. van Niekerk - Alternative random regression analyses as opposed to current fixed regression analyses for SA Holstein genetic evaluations under two production systems
12:00 - 12:15	C.B. Banga - Modelling alternative herd production models for the smallholder dairy production system in South Africa
12:15 - 12:30	L. Chavinskaia - Making the global cow local: The case of South Africa
12:30 - 12:45	C.J.C. Muller - The effect of including stature in sire selection on the live weight, milk yield, fertility and feed efficiency of Holstein cows



DAY 2 - CONCURRENT SESSIONS

SESSION 4 VENUE G2 ANIMAL HEALTH

CHAIRPERSON:	Prof Norman Casey
11:15 - 11:30	B. Dube - Haematological and differential leukocyte analyses in South African beef breeds infested with Rhipicephalus ticks
11:30 - 11:45	T.J. Mpofo - Gastro-intestinal nematodes co-infection and their interaction as drivers of host heterogeneity in South African communal goat population
11:45 - 12:00	M.I. Malatji - The in vitro activity of Brevibacillus laterosporus and Bacillus coagulans on sheep nematodes control
12:00 - 12:15	N. Nyangiwe - Population dynamics of ticks on and off bovine hosts in the Eastern Cape Province of South Africa
12:15 - 12:30	J.M. Rust - The effect of an anti-tick vaccine on cattle-host tick populations
12:30 - 12:45	H.L. Lucht - Implications of bromide toxicity in livestock production





DAY 2 - CONCURRENT SESSIONS

SESSION 4

VENUE G4

PREDATION WORKSHOP

CHAIRPERSON:

Mr Andries Strauss

11:15 - 11:45

Dr Nico Avenant – Feeding ecology of caracal and black-backed jackal in livestock areas – implications for predation management

11:45 - 12:00

Mr Andries Strauss – Predation management on a sheep farm in the central Free State Province, South Africa

12:00 - 12:15

Ms Quinette Kruger – Human-wildlife conflict and the importance of information in managing predation

12:15 - 12:45

Prof HO de Waal – The need for coordinated predation management in South Africa – quo vadis

DAY 2 - CONCURRENT SESSIONS

SESSION 4

VENUE A101

SILAGE WORKSHOP

CHAIRPERSON:

Dr Ockert Einkamerer

11:15 - 11:45

Mr Richardt Venter – Ensiling practices and its effect on nutrient composition
Prof Robin Meeske – Silage in South Africa: What can improve?

11:45 - 12:15

12:15 - 12:30

J.J. Baloyi – Effects of different inclusion levels of Marula (*Sclerocarya Birrea*) pulp at ensiling on the rumen degradability of Napier grass (*Pennisetum purpureum*) silage

12:30 - 12:45

I.M.M. Malebana – Effect of fungicides on the nutritive value of whole crop maize silage



DAY 2 - CONCURRENT SESSIONS

SESSION 4

VENUE A103

POULTRY NUTRITION: BROILERS

CHAIRPERSON:

Dr Foch-Henri de Witt

11:15 - 11:30

K.J. Edwards - Re-evaluating ideal drinking water pH for improved broiler performance and the effects thereof on the gastrointestinal tract pH

11:30 - 11:45

T.G. Manyelo - Effect of replacing soybean meal with yellow mealworm larvae on performance and gut morphology of Ross 308 broiler chickens

11:45 - 12:00

M.J. Mbukwane - Variability in sunflower meal quality and its effect on the growth performance, gut viscosity and carcass traits of broiler chickens

12:00 - 12:15

X.P. Nduku - Intestinal pH, morphology and microbial counts of broiler chickens fed Moringa oleifera leaf meal

12:15 - 12:30

D. Ngomani - Effect of dietary threonine level on productivity and carcass characteristics of Ross 308 broiler chickens

12:30 - 12:45

S.J. Taylor - Limestone source and particle size effect on Ca and P digestibility and phytase efficacy in broilers

12:45 - 14:00

Lunch @ Centenary Hall

DAY 2 - CONCURRENT SESSIONS

SESSION 5

AUDITORIUM

MOLECULAR GENETICS

CHAIRPERSON:

Dr Linky Makhalela

14:00 - 14:15

K.T.E. Makua - Identification of single nucleotide polymorphisms in epigenetic related genes associated with carcass traits in South African beef cattle

14:15 - 14:30

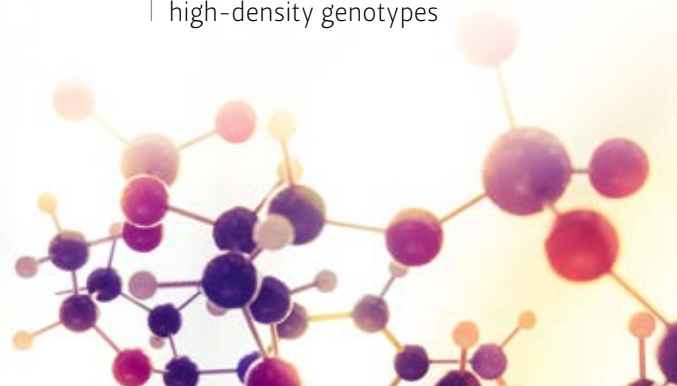
M.M. Selepe - Origin and genetic diversity of Zulu sheep assessed by Mitochondrial DNA D-Loop sequence

14:30 - 14:45

M.D. MacNeil - Identification of genomic regions contributing to wet carcass syndrome in sheep

14:45 - 15:00

S. Mdyogolo - Linkage disequilibrium and characterization of haplotype blocks in South African Brahman and Afrikaner breeds using medium and high-density genotypes



DAY 2 - CONCURRENT SESSIONS

SESSION 5

VENUE G2

REPRODUCTIVE PHYSIOLOGY

CHAIRPERSON:

Dr Helet Lambrechts

14:00 - 14:15

H. Lambrechts - The potential of rosmarinic acid, carnosic acid and carnosol to preserve sheep sperm viability and morphological integrity during heat stress conditions

14:15 - 14:30

A.M. du Preez - Effects of extensive-intensive feeding system on gonadal development, scrotal fat deposition and semen quality of Döhne Merino, Merino and SA Mutton Merino rams

14:30 - 14:45

P.T. Muvhali - Establishment of a minimum sperm dose to optimize fertility after artificial insemination of ostrich females

14:45 - 15:00

A.M. Peta - Correlation of semen parameters and seminal plasma constituents in relation to Bonsmara bull fertility



DAY 2 - CONCURRENT SESSIONS

SESSION 5

VENUE G4

OSTRICH PRODUCTION

CHAIRPERSON:

Dr Mike Fair

14:00 - 14:15

K.R. Nematandani - Determination of variance components for ostrich skin traits

14:15 - 14:30

J. van der Merwe - The effect of varying canola oilcake meal dietary inclusion levels on the production traits and slaughter yields of ostriches (*Struthio camelus* var. *domesticus*)

14:30 - 14:45

S.W.P. Cloete - Genetic parameters for mature ostrich traits

14:45 - 15:00



DAY 2 - CONCURRENT SESSIONS

SESSION 5

VENUE A101 DAIRY NUTRITION

CHAIRPERSON:

Prof Robin Meeske

14:00 - 14:15

N.M. Bangani - Comparing milk production efficiency of Holstein and Jersey cows in a kikuyu pasture-based system

14:15 - 14:30

L.J. Erasmus - Effect of feed additive supplementation on rumen bacterial amino acid profiles in dairy cows

14:30 - 14:45

E. Sihlangu - Evaluation of biogas production from enriched dairy cow manure

14:45 - 15:00

A. van der Vyver - Partial substitution of maize with soybean hulls in a concentrate supplement for grazing dairy cows



DAY 2 - CONCURRENT SESSIONS

SESSION 5

VENUE A103 BEEF & SHEEP NUTRITION

CHAIRPERSON:

Dr Douglas Nkosi

14:00 - 14:15

O.B. Einkamerer - The effect of diet acid-detergent fibre content on the production performance of finishing lambs

14:15 - 14:30

A. Hassen - Effect of supplementing different proportions of cellulase and xylanase enzyme mixtures on intake and digestibility of high forage total mixed ration by sheep

14:30 - 14:45

14:45 - 15:00

T. Tayengwa - Growth performance, carcass and meat quality attributes of Angus steers fed sun-dried grape pomace and citrus pulp

15:00 - 15:30

Coffee/Tea & Poster Session
(G3, LG7, LG8)

DAY 2 - PLENARY SESSION - AUDITORIUM

SESSION 6	AUDITORIUM
CHAIRPERSON:	Prof Esté van Marle-Köster
15:30 - 17:00	SASAS Annual General Meeting
18:30	Congress Gala Dinner at Summerwood Estate

DAY 3 - 12 JUNE - PLENARY SESSION - AUDITORIUM

06:30 - 08:15	Ovine genomics working group meeting (Venue A101)
07:00 - 08:15	New council meeting (Venue A102)
08:00 - 08:30	Registration

SESSION 7	AUDITORIUM
CHAIRPERSON:	Prof Norman Maiwashe
08:30 - 09:15	Keynote address 7: Prof Yan Landau – Behavioural adaptations of goats to brush-grazing: emergence of goat cultures
09:15 - 10:00	Keynote address 8: Dr Michael MacNeil – The versatility of an Animal Scientist
10:00 - 10:30	Coffee/Tea & Poster Session (G3, LG7, LG8)

DAY 3 - CONCURRENT SESSIONS

SESSION 8	AUDITORIUM
CHAIRPERSON:	ANIMAL ETHICS WORKSHOP
10:30 - 11:00	Prof Schalk Cloete
11:00 - 11:30	Prof Cathy Dwyer – Ovine welfare reviewed
11:30 - 12:00	Prof Gareth Bath – Animal welfare: A veterinarian's perspective
12:00 - 12:30	Dr Maud Bonato – Kick back, relax and love your ostriches: advances in ostrich welfare research
	Ms Maricel van Rooyen – Animal welfare: A legal perspective



DAY 3 - CONCURRENT SESSIONS

SESSION 8 VENUE G2

WILDLIFE, RANGELAND & ECOLOGY

CHAIRPERSON:

Dr Beanelri Janecke

10:30 - 10:45

B.B. Janecke - Use of faecal nitrogen to indicate nutritional status and seasonal trends in wildlife species

10:45 - 11:00

T.J. Dugmore - Growing out and finishing beef steers on tall fescue pasture

11:00 - 11:15

F. Deacon - Objective home range analysis of GPS collared livestock using plants and soils as potential prediction indicators

11:15 - 11:30

T.D. Mohlapo - Reproduction performance of beef cattle before and after implementing a sustainable grazing system in a semi-arid grassland of southern Africa

11:30 - 11:45

G.N. Smit - An assessment of woody biomass as a sustainable energy source in a bush thickened area of northern Namibia

11:45 - 12:00

T. Chitura - In-vitro anthelmintic activity of seven medicinal plants used to control livestock internal parasites in chief Chief Albert Luthuli municipality, South Africa

12:00 - 12:30

Prof Yan Landau - Monitoring nutrition of ruminants by faecal NIRS

DAY 3 - CONCURRENT SESSIONS

SESSION 8 VENUE G4

PRICKLY PEAR WORKSHOP

CHAIRPERSON:

Dr Maryna de Wit

10:30 - 11:00

Dr Herman Fouche - The value of cactus pear as alternative fodder
Dr Maryna de Wit - Cactus pears in human food: conventional and unconventional applications

11:00 - 11:30

11:30 - 12:00

Dr Alba du Toit - Young cladodes from cactus pears (*Opuntia ficus-indica*) as a viable food source

12:00 - 12:30

Prof HO de Waal - Utilising invasive spiny *Opuntia ficus-indica* and *O. engelmannii* as processed livestock feed and as a means of mechanical control





DAY 3 - CONCURRENT SESSIONS

SESSION 8

VENUE A101 SWINE & POULTRY NUTRITION

CHAIRPERSON:

Dr Thobela Nkukwana

10:30 – 10:45

I.C. Nwafor – Growth performance and faecal egg count reduction in naturally parasitized pigs fed graded levels of dry chicory (*Cichorium intybus*) roots

10:45 – 11:00

I. Taljaard – Determining an optimal lysine: energy ratio for lean growth in a modern commercial pig genotype

11:00 – 11:15

J.D. Lemmer – Evaluating the use of dietary supplemental ascorbic acid on broiler performance and litter quality under South African summer conditions

11:15 – 11:30

F. Fushai – Effects of xylanase enzyme

on the fermentation and aerobic stability of ensiled citrus (*Citrus sinensis*) pulp

11:30 – 11:45

R.S. Thomas – Growth performance of weaned Large White x Landrace crossbred pigs fed on diets containing ensiled potato hash

11:45 – 12:00

K.M. Venter – The in-vitro analysis of acid binding capacity of South African feed ingredients for broiler chickens and possible effects on performance

12:00 – 12:15

J.C. Venter – Performance and bone integrity of broilers receiving feeds that contain calcium at lower levels than current recommendations

12:15 – 12:30

S.S.M. Nkabinde – Intrinsic factors contributing to variation in the AMEn value of maize for broiler chickens

DAY 3 - CONCURRENT SESSIONS

SESSION 8

VENUE A103 ANIMAL MANAGEMENT & PRODUCTION

CHAIRPERSON:

Mr Andries Strauss

10:30 - 11:00

Dr Karin Wessels – The Mamre Model for sustainable sheep production

11:00 - 11:30

Dr Karin Badenhorst – New economic pathways through green agricultural value chains with reference to the wool value chain in South Africa

11:30 - 12:00

Dr Fritz van den Heever – The effects of controlled and notifiable diseases on sheep production

12:00 - 12:15

J.F. Macdonald - The effect of fibre source on the nutrient digestibility and production performance of finishing lambs

12:15 - 12:30

L. Mbambalala - Growth performance, blood metabolites, carcass characteristics and meat quality of Dohne Merino lambs supplemented with various inclusion levels of canola meal

12:30 - 13:30

Lunch @ EMS building



DAY 3 - CONCURRENT SESSIONS

SESSION 9

AUDITORIUM ANIMAL ETHICS WORKSHOP

CHAIRPERSON:

Prof Esté van Marle-Köster

13:30 - 13:45

N.L. Mhlongo – Evaluation of claw health of dairy cattle housed in dirt lot vs free stall in TMR systems in the central regions of South Africa

13:45 - 14:00

Prof Schalk Cloete – Arena behaviour of Merino is heritable and affected by divergent selection for lambs weaned per ewe mated

14:00 - 14:15

H.A. O'Neill - Catecholamines and the definition of animal behaviour and stress responsiveness

14:15 - 14:30

A.P. Myburgh - Effect of feeding milk once a day to Jersey calves on growth and rumen development

14:30 - 15:00

Discussion session



DAY 3 - CONCURRENT SESSIONS

SESSION 9 VENUE G2

CHAIRPERSON:

13:30 – 13:45

ANIMAL BEHAVIOUR & MEAT PRODUCTS

Prof Khoboso Lehloenyha

M.K. North - The effects of dietary quercetin supplementation and sex on the fatty acid profile of rabbit meat, dissectible fat and caecotrophes

13:45 – 14:00

P. Pophiwa - Translating findings on goat meat research into industry practices

14:00 – 14:15

Z. Soji - Application of Check-All-That-Apply method to visual evaluation of the South African A2 fresh beef steaks from three different breeds

14:15 – 14:30

T.Stempa - Sex and breed effects on heat shock proteins and blood stress indicators in relation to the quality of meat from lambs slaughtered at a commercial abattoir

14:30 – 14:45

J. Tanganyika - Effect of production system on growth performance, carcass and meat quality characteristics of Malawian native Muscovy ducks

14:45 – 15:00

M.Z. Dlomo - Social dominance in South African indigenous rams (Zulu sheep): Effect of body measurements on dominance

DAY 3 - CONCURRENT SESSIONS

SESSION 9 VENUE G4

SMALL STOCK & LARGE STOCK PRODUCTION

CHAIRPERSON:

13:30 – 13:45

Dr Cuthbert Banga

A. Muller - Estimation of genetic parameters and trends of growth traits and lamb mortality in the Elsenburg Dörmer resource flock
C.L. Nel - Genetic trends, principal components and signatures of selection for a Merino resource flock divergently selected for reproduction

13:45 – 14:00

D.A. Van der Merwe - Modelling the growth of seven commercial South African sheep breeds

14:15 – 14:30

K.P Nkgapele - Effective population size, inbreeding rate and risk status classification of Kalahari Red goats in stud flocks of South Africa

14:30 – 14:45

O. Tada - Evaluation of non-genetic factors affecting birth weight of Kalahari red goats in South Africa

14:45 – 15:00

N.T. Chabalala - The blue water footprint of primary beef production systems in South Africa



DAY 3 - CONCURRENT SESSIONS

SESSION 9

VENUE A101

QUANTITATIVE GENETICS: BEEF CATTLE

CHAIRPERSON:

Mr Michiel van Niekerk

13:30 – 13:45

N.P. Bareki - Variance components and genetic parameters for reproductive traits in Afrikaner cattle

13:45 – 14:00

F.J. Jordaan - The effect of weather patterns on growth of beef calves in warmer parts of the country

14:00 – 14:15

M.I. Keoletile - Environmental and genetic factors influencing reproductive traits and calf survival to weaning in Tswana cattle selected for early growth traits

14:15 – 14:30

I.D.M. Mashinini - Evaluation of the sustainability of a Livestock Production Improvement Scheme

14:30 – 14:45

M. Slayi - Foraging behaviour patterns and weight gain of Nguni and Boran steers post relocation and herd regrouping in semi-arid regions

14:45 – 15:00

N. Nemukondeni - Assessment of growth rate and feedlot performance of F2 Nguni × Angus genotypes

DAY 3 - CONCURRENT SESSIONS

SESSION 9

VENUE A103

FEED PROPERTIES & QUALITY

CHAIRPERSON:

Me Charne Josling

13:30 – 13:45

F.N. Fon - The feed and anthelmintic potential of *Kigelia africana* fruit harvested at KwaDlangezwa, Zululand

13:45 – 14:00

S.L. Ibrahim - Influence of purified Black wattle (*Acacia mearnsii*) tannin on in vitro gas, methane and organic matter digestibility of *Eragrostis curvula* hay

14:00 – 14:15

14:15 – 14:30

N.N.P. Msimango - An overview of the role of tannin on microbial fibrolytic activity from wild and domestic herbivores

14:30 – 14:45

M. Sebolai - Prediction of the nutritive value of tree leaves using near infrared reflectance spectroscopy

14:45 – 15:00

J.H.C. van Zyl - Evaluation of methods to determine maize quality and hardness (vitreousness)

15:00

Closure of the 51st Congress of the South African Society of Animal Science



SACNASP

South African Council for Natural Scientific Professions



ORANGE RIVER
CELLARS



Forever Pure Water

