



CLIMATE SMART LIVESTOCK FARMING

for Sustainable Food Security

CONFERENCE & STUDY TOUR - (CSFS 2023)



28th, 29th & 30th August 2023
PROTEA HOTEL • BLOEMFONTEIN • FREE STATE • RSA

*Driving Innovation in Livestock Production and Accelerating The Adoption of
Regenerative Practices To Future Proof The Livestock Industry*



MOVING TOWARDS SUSTAINABLE AGRICULTURE

The Livestock Sector

Supporting livestock farming development in South Africa is primarily intended to generate income and meet the growing demand for animal sources of protein for South Africa's growing population. Sustainable production of high-quality animal proteins for a growing world population is the key challenge for the livestock industry in the future.

In 2050, resilient and healthy animals need to produce enough animal proteins in a resource-efficient and societally accepted way to feed the world's population. Animal breeding relies on research and development and on long-term commitment to meet the changing consumer demands to increase efficiency in the food chain, to reduce the ecological footprint, to minimize the use of antibiotics, and to contribute to food safety, and to better health and welfare of livestock.

Join Empire Conferencing as we embark on a 3-day intensive conference and study tour on improved strategies for raising livestock for sustainable food security .

THE PURPOSE OF THIS EDUCATIONAL AND PRACTICAL STUDY TOUR IS TO:

- Offer delegates the opportunity to adopt regenerative farming practices
- Showcasing innovative technologies to advance and drive the 4IR in the livestock sector
- The impact of livestock on climate change
- Sharing of industry best practices through networking and open forums
- Case study driven onsite tours offering best practices within livestock farming
- To explore Opportunities and Challenges
- Adopt new methods of precision feeding to reduce CO2

PARTICIPATING COMPANIES



Hinkos (Pty) Ltd





HIGHLIGHTS: OUR LIVESTOCK FARM TOURS INCLUDE:

- **Bishops Glen Dairy** -Your Key Guide to Implementing a Seasonal Pasture - Based Dairy
"Active and Precise Pasture Management" -Presented by Mick Quin successful dairy farmer
- **Hanzyl Bonsmara's Pure Beef (Dewetsdorp)** -Higher Output with Regenerative Grazing Practices-Join us as we discover the 25-year journey of breeding some of the best Bonsmara genetics with Gerrit Van Zyl
- **Heuningkrans Merino's** - Latest Developments in Breeding and Innovation, as well as Wool Quality And Production
- **Taaibosch Piggery (Virtual Tour)**- Biosecurity and New Technologies in the Swine Industry
- Free State University Experimental Farm Paradys

CONFERENCE DISCUSSIONS AND AIMS:

- To share current, scientific knowledge and expert perspectives on the important role of animal production and animal protein in a sustainable food system
- To explore opportunities and challenges for the future
- What should the animal production of the future look like?
 In the coming decades, the sector hopes to become carbon neutral, antibiotic use should be reduced, and nutrient losses minimised. These goals can only be achieved through science, innovation in new technologies and the commitment of the sector to respond to the needs and interests of consumers
- Experts will address issues of new sources of protein, precision feeding to reduce environmental impact, additives for efficient livestock diets, and examples of farm management in terms of the circular bioeconomy
- How Livestock Production can mitigate its environmental impact through

approaches that improve production efficiency, reduce disease burden and improve access to nutritious foods

- The challenges facing livestock farming in terms of antibiotic resistance, from the overall situation to prudent use, factors influencing the gut microbiota, and new alternatives
- Most innovative advances in livestock feeding systems on farms from the perspective of biosystems engineering, animal welfare, and consumer demand
- Smart Solutions for control and management in livestock farms. Is AI the way to go?



PARTICIPATING COMPANIES



THE CSFS STUDY TOUR 2023 hosted by Empire Conferencing, connects you to the most innovative and sustainable farmers within the Free State - and provides worldwide support to livestock projects.

Following the success of the Sustainable Livestock Summit 2022 and based on research with the market, this year we are excited to introduce the Sustainable Animal Production and Health study tour!

Join us in Bloemfontein for this 3 - days of re-uniting the industry focused on future-proofing livestock production and driving innovation to combat the detrimental challenges that are affecting production animal health and the sustainability of the protein production industry.

Our new programme will address not just the sustainability issues throughout livestock production, but also the-specific challenges that are occurring in, poultry and ruminant production that are impacting animal health and production efficiency. Livestock farmers have an essential role to play in the economic growth, health, and sustainability of South Africa. Understanding the depth and importance of their roles is essential in boosting the sector and encouraging farming in rising generations in South Africa, for our country's food security and overall community health.

Livestock farming is not just about the business of keeping animals and selling them. Amongst the varied roles of producing a constant supply of safe sources of animal proteins, like meat, poultry, milk, eggs, cheese etc., they are also responsible for the nutritional content of their products and sustainable farming practices that reduce the impact of their sector on the environment. Today, livestock farming is well positioned to contribute to social transformation within resource-poor communities globally.

Through the series of tours and our conference, the aim is to share knowledge and to interact on innovations in the area of genetics applied to livestock production that enable to breed animals that allow livestock production chains to meet future needs. African countries are on a drive to grow the agriculture sector hence the conference comes at an opportune time providing stakeholders a platform to exchange ideas on boosting the livestock sub-sector

Join Empire Conferencing as we share knowledge and interact on innovations in the areas applied to livestock production enabling the breeding of animals that allow livestock production chains to meet future needs.

Look forward to hosting you in Bloemfontein this August 2023!

Regards,
Empire Conferencing

PANEL INCLUDES



Dr Gerhard Kriel
CEO Friends of Agriculture
Krieltech
Former CEO of the Milk
Producers Organisation



Dr Noluvuyo R Magadla
Dir: Animal Health Dept.
of Agric. & Rural
Development
President: SASVEPM



Dr Masindi Mphaphathi
Researcher: Germplas
Conservation &
Biotechnology
Agricultural Research
Council



**Dr Karin and Manie
Wessels**
Founders Mamre Stud
Consultants



Professor Amit K Mishra
Associate Professor:
Electrical Engineering
University of Cape Town



Mr Leon Kruger
Department of Animal
Science
University of Free State



Mr CP Kriek
Managing Director-
Taaibosch Piggery



Mr Lewellyn Angus
Stud Breeder/Animal
Scientist



Mr Gerrit Van Zyl
Founder:
Hanzyl Bonsmara



Mr Eddie Prinsloo
Heuningkrans Merino's
Director: BKB



Dr Hinner Koster
Director and Owner
Hinkos Pty Ltd



Mr Mick Quin
Owner-Bishops Glen Dairy



Dr Fanie Steyn
Director Absolute Genetics

AGENDA AT A GLANCE (TOURS AND CONFERENCE DAYS)

28 th August 2023	Tours
Morning	Hanzyl Bonsmara Cattle Farm
Afternoon	Heuningkrans Merino Farm
29 th August 2023	Conference Day 1 (Refer To Agenda)
30 th August 2023	Tours
Morning	Bishops Glen Dairy Farm
Afternoon	UFS Experimental Farm Paradys



ITINERARY

Sunday 27th August 2023

Delegation arrives in Bloemfontein Free State

Monday 28th August 2023

Morning: Depart to Hanzyl Bonsmara Cattle

The ability of Bonsmara cows to breed high-quality replacement heifers from a Bonsmara bull, or any other breed, is one of the reasons the Bonsmara has grown to become the most popular cattle breed in South Africa in the 55 years since the establishment of the breed society back in 1964.

Taking into consideration the criteria required to qualify as a breed with good maternal ability, the Bonsmara should be at the top of the commercial cattle farmer's list. This trait is not merely important to the cattle farmer; it is one of the cornerstones of a successful, profitable herd.

Tour Director: Gerrit Van Zyl

27 Golden Years of Breeding Top Bonsmara Cattle.

Hanzyl Bonsmara's have been breeding fertile, well-adapted and economically efficient cattle for 27 years.

Mr Gerrit van Zyl is running a stud Bonsmara herd on the farm Struisfontein Dewetsdorp SE FS over the last 28 years. The last 8 years he adopted a regenerative farming approach with the main aim of ecological health in mind.

The legacy Gerrit aim for is to leave the planet a better place and to teach as many agriculturists, as possible, to respect the planet and to improve soil health while farming in a sustained manner

Learner Outcomes:

- Use of new technologies in a stud operation
- Breeding values
- Regenerative principals
- Diseases management
- Nutrition and supplements

Visit a personal Study Project: Aim is to push the boundaries to determine maximum regarding stock levels. Find the best way to deal (get rid of) with Turpentine (unpalatable) grass

Lunch

Afternoon: Depart to Heuningkrans Merino's - latest developments in breeding and innovation, as well as wool quality and production

Heuningkrans Merino Stud was started in 1927 by Eddie's great-grandfather David Prinsloo. When it was registered in 1939 the stud only ran about 200 ewes. Realising the need for good rams, David imported two rams from Australia soon after registration. In 1951 David's son, Hennie Prinsloo, took over the stud. He was successful and well known and chaired the Wool Board for many years. In 1987 he was voted the Free State farmer of the year.

Merino farmer Mr Eddie Prinsloo took over Heuningkrans farm, based in Smithfield in the Free State, in 1975 from his father Hennie. Not only is he a director at BKB but was also voted national farmer of the year in 2003. In 1975 Heuningkrans Stud had just over 500 Merino ewes. Realising the need to sell more rams, Eddie began to increase the number of ewes in the stud to the current figure of 2 000. This makes it one of the

largest studs in SA, and each year it lambs 500 ewes in March and 1 500 in August and September. Over the past few years, the stud has achieved an average lambing percentage of 120%. E

Tour Director: Eddie Prinsloo

Learner Outcomes:

- Sheep farming Profitability
- Land requirements and Housing
- Feeding and Technology of Sheep
- Breeds, Nutrition and Diseases
- Merinos for wool production
- Art and Technique of Sheering

Conference Agenda

29th August 2023

Venue: The Protea Hotel Bloemfontein Free State- RSA

Improving the Sustainability of the Livestock Industry

Strengthening breeding stock:

Session 1:

Discussion: Strategies for implementing advanced embryo production technologies

Presenter: Dr Masinda Mphaphathi Animal Researcher Agricultural Research Council

Research projects on in vivo & in vitro embryo production and cryopreservation/freezing of gametes (semen and embryos). Provide and support on in-situ and ex-situ conservation programmes.

Offering cattle & pig artificial insemination and reproduction courses to farmers and universities students.

Synchronization, artificial insemination and pregnancy diagnosis in cattle.

Semen collection in bulls, bucks, boars, cocks and rams and evaluation by Computer Assisted Sperm Analyzer (CASA) system.

Session 2: Embryo transfer in Dairy, Beef, Sheep and goats.

- gender selection
- semen sorting

Presenter: Dr Fanie Steyn Director Absolute Genetics

Dr Fanie qualified as a Veterinarian (B.V.Sc.) at Onderstepoort Veterinary College. Where after he became one of Ramsem's Veterinary Reproductive Team Leaders in Embryo flushing, transfer and laparoscopic inseminations in sheep and goats. He is currently Director at Ramsem (Pty) Ltd, Absolute Wagyu (Pty) Ltd and Absolute Genetics (Pty) Ltd.

Dr Fanie is responsible for the Juvenile In Vitro Embryo Transfer (JIVET) practices. With his reproductive and embryo experience at Ramsem, he is a great asset to the Absolute Genetics team.

Discussion: Nutrition and Feeds

Session 3: Precision Feeding in beef production operations

Presenter: Dr Hinner Köoster, Director and owner of Hinkos (Pty) Ltd

Dr Hinner Köoster received his B.Sc. Agric. in 1986, his B.Sc. Agric. (Hons.) in 1987 and his M.Sc. Agric. (Animal Nutrition) in 1990 at the University of Pretoria. In 1995 he completed his Ph.D. in Ruminant Nutrition at Kansas State University, USA, where he still serves as adjunct faculty Professor since 2008. He has published more than 40 international and national scientific papers and abstracts, more than 600 popular scientific papers and presented 22 papers at international conferences and symposia and more than 600 presentations on animal nutrition related topics on other platforms. He further is a member of the American Society of Animal Science, South African Society of Animal Science where he served on Council until 2012, and South African Council for Natural Scientific Professions.

Lunch

Session 4: Using technology for profitable feed formulation that immediately improves the bottom line

Presenter: CEO Friends of Agriculture Krieltech, Former CEO of the Milk Producers Organisation.

Dr Kriel's previous positions included that of general manager of trade at OVK Agriculture and CEO of Free State Agriculture. Mr Kriel holds a bachelor's degree in food science, dairy science, microbiology and biochemistry from the University of the Free State and a master's degree in Business Leadership (MBL) from the University of South Africa.

Session 5: Assessing all farm animals traits such as growth and fertility.

Fertility: how to increase it under our climatic conditions

Presenter: Mr Llewellyn Angus is a registered animal scientist and a South African Interbreed Judges Association examiner. He has won many awards for stud breeding and is a former president of the South African Simmentaler/ Simbra Society.

Received the 2022 LRF Merit Award for "outstanding services to the livestock industry.

Session 7: Management of Infectious Animal Diseases: tools and strategies.

Presenter: Dr. Magadla qualified as a veterinarian at the former Medical University of Southern Africa (MEDUNSA) and holds a master's degree in veterinary science from the University of Pretoria and a postgraduate diploma from the University of London Royal Veterinary College. She has worked for State Veterinary Services for over 20 years. She is currently a Director of Animal Health in the Gauteng Province under the Department of Agriculture, Rural Development and Environment. She is the current President of the Southern African Society for Epidemiology and Preventive Medicine (SASVEPM) and a representative of Africa in the International Management Committee for the International Symposium for Veterinary Epidemiology and Economics. Her particular interest is in the socioeconomic effects and management of infectious diseases, Geographic Information Systems, and community development.

Session 8: Virtual Tour and Discussion: Swine Biosecurity Measures

Technology and Animal Welfare

Presenter: Mr CP Kriek Managing Director Taaibosch Piggery

Taaibosch Piggery, near Fochville in Gauteng, comprises four sections: a 2 200-commercial sow breeding and nursery unit; a weaning unit; a growing and finishing unit; and a genetic nucleus. An on-farm gene transfer centre provides fresh semen to the breeding unit on a scheduled and on-demand basis

Session 2: Management and reproduction

Implementation of project management in stock production Sheep and Cattle

Presenters: Dr Karin and Manie Wessels Founder Mamre Dormer Stud

Dr Karin and Manie Wessels of the Mamre Dormer Stud in the Vrede district have developed a simple but highly effective system for the numerous tasks that farmers have to perform in such an enterprise. Karin started the project as a hobby in 2010 and spent two years struggling on her own. She realised why so many other farmers had said that intensive sheep farming was unsustainable. She was at the point of giving up when husband Manie, a project manager, stepped in and helped her implement a proper sheep management system.

Precision livestock farming and beyond

Session 9: Artificial Intelligence in detecting livestock diseases through infrared systems

Presenter: Professor Amit K Mishra Associate Professor University of Cape Town

After being employed as a faculty member at the Indian Institute of Technology (IIT) in Guwahati, India, for 4-and-a-half years, he joined the University of Cape Town. He has supervised one PhD student, and more than fifteen Masters students. His areas of

interest include radar system design, and machine learning. He has published more than 15 journal papers and has two US, one UK, one South African and three Indian patents (applied) to his credit. He is a Senior Member of the IEEE.

Session 10: The effect of environmental factors and husbandry practices on stress in livestock

Presenter: Mr Leon Kruger Department of Animal Science University of Free State

Leon has 32 years' experience involved with livestock more specifically small stock research, specializing in internal parasite, small stock diseases and lately stress associated with animal ethology and handling. He holds a bachelor's degree in Veterinary Technology and a Master's degree in Animal Science. He is just about to complete a PhD degree in Animal Science. Has for the past 15 years been involved with part time lecturing at Tshwane University of Technology, UNISA and University of Free State. His knowledge is purely based on experiential training from years of involvement with field work.

DAY 3: 30th August 2023

Morning: Depart to Paradys Experimental Farm of the University of the Free State (UFS)

Adding to the value chain, extending the teaching and learning process, and supporting the development of the surrounding communities – this is the result of seven years of hard work for the Paradys Experimental Farm of the University of the Free State (UFS). Whether it is yoghurt and cheese from the dairy factory, wool products from the wool production and wool processing hub, or an ice-cold beer from the fermentation institute, the farm will soon share the fruits of its labour with the Bloemfontein community.

Situated outside Bloemfontein on the road to Reddersburg, the farm is an agricultural training centre in the Faculty of Natural and Agricultural Sciences for UFS students who, among others, take modules in agriculture, working with cattle, sheep, crop cultivation, and milk production. Moreover, the farm also offers training opportunities to members of the community, ranging from short courses in animal health and animal breeding to workshops in wool classing, sheep handling, and sheep management.

Learner Outcomes

- Research and Development into the Production chain of Dairy and Wool Processing Units

Lunch

Afternoon: Depart to Bishops Glen Dairy Farm

Free State dairy farmer Mick Quin has managed to grow his business by more than 800% at a time when many inland producers are struggling to survive. His secret, as Sabrina Dean discovered, is active and precise pasture management.

The "dairy platform", as he calls it, comprises 27 irrigation pivots across 240ha. Additional pastures can be incorporated to increase the total grazing area to about 400ha, which is needed during the winter months. Pastures are planted to perennial rye grass and clover and managed according to a strict rotation. This is not simply a schedule stuck on the wall; the grass is measured daily with a device known as a New Zealand plate measure.

Tour Director: Mr Mick Quin

Learner Outcomes

- New Improved technology in Dairy Farming

Mick has personally financed additional high-tech infrastructure upgrades, including the installation of a 2018 milking shed worth R6,2 million. It is equipped with a 66-point Waikato turntable, as well as an 18 000l milk tank, a 40 000l milk silo, feed silos, and sophisticated animal handling equipment.

The rotary system is the "best and easiest form of milking", according to Mick. It is easier to manage and lessens stress for the cows. He adds that the system is currently near capacity at peak milking periods and any further expansion would involve installing another turntable. An integrated, computerised management system, run on software provided by Africhem, is used.

This enables Bishops Glen to keep track of each cow's calving and insemination dates, bull name, and days in milk.

END OF STUDY TOUR



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28TH, 29TH & 30TH AUGUST 2023 - PROTEA HOTEL - BLOEMFONTEIN - FREE STATE - RSA

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