

AUSTRALIAN CAMEL MILK INDUSTRY FORUM

MAY 25-26, 2017
ADELAIDE
SOUTH AUSTRALIA
RYDGES SOUTH PARK HOTEL



RURAL INDUSTRIES
Research & Development Corporation

About

This forum is funded by the *Rural Industries Research and Development Corporation* in response to a “Ten year R&D Plan for growing the Australian Camel Milk Industry” (Gee et al 2016) report developed in consultation with Australian camel milk industry stakeholders. This document outlines the Australian camel milk industry’s research, development and extension (RD&E) objectives until 2027. This forum addresses part of these objectives.

As the industry in Australia is in its infancy, we are inviting Australia camel milk dairy operators to listen to four prominent international speakers, who are experienced in camel production, camel breeding and/or camel dairy management. Four local speakers, with industry experience, will also talk about issues specific to Australia.

The forum will address the following general themes:

- Health and Disease Management
- Nutrition Management
- Husbandry and Hygiene and Staff Training
- Dairy Management
- Selective breeding

Australian Camel Milk Industry Forum

25-26th May 2017, Adelaide, South Australia
Rydges South Park Hotel

Day 1 - May 25th

- 9:30 AM** Introduction & welcome – Dr Mark Lethbridge
- 10:00 AM** “A 10 year R&D Plan for growing the Australian camel milk industry”
- Duncan Farquar (RIRDC)
- 10:30 AM** Morning tea
- 11:00 AM** “Nutrient requirements for camels” - Dr Rafat Al Jassim (Australia)
- 12:00 PM** Lunch
- 1:00 PM** “Selective breeding and artificial insemination for improved milk production in camels” – Dr Lulu Skidmore (UAE)
- 1:45 PM** “A healthy animal: The beating heart of the industry”
- Dr Margaret Bale (Australia)
- 2:30 PM** Afternoon tea
- 3:00 PM** “Intensive camel farming; sustainable water and feed management”
- Dr Bernard Faye (France)
- 3:45 PM** Recap and discussion of Day 1
- 4:00 PM** Day 1 close
- 6:00 PM** Pre-dinner social from 6 PM. Forum Dinner commences at **6:30 PM**.

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Day 2 - May 26th

- 9:30 AM** Day 2 Welcome – Dr Mark Lethbridge
- 9:40 AM** “*Husbandry, staff training and camel conditioning*”
- Lauren Brisbane (Australia)
- 10:30 AM** Morning tea
- 11:00 AM** “*Husbandry, staff training and camel conditioning*” (cont’d)
- Chris O’Hora (Australia)
- 12:00 PM** Lunch
- 1:00 PM** “*Improving camel dairy production and product quality*”
- Marlin Troyer (USA)
- 2:00 PM** “*Where to from here for the Australian camel milk industry?*”
- Duncan Farquar (RIRDC)
- 2:30 PM** Afternoon tea
- 3:00 PM** “*Agenda for the future development of the Australian camel milk industry*” – facilitated discussion by Dr Mark Lethbridge
- Discussions will include:
- Key issues and barriers identified at the forum
 - What is needed to address them?
- 4:00 PM** Forum close

TALK ABSTRACTS AND SPEAKER INFORMATION

Dr Margaret Bale

Chief Veterinarian Officer, Australian Wild Camel Corporation, Queensland

Dr Margaret Bale BVSc has been working as a clinician for 23 years. For the past 15 years, Margaret had been in predominantly dairy cattle practice at the *University of Queensland Dayboro Clinic*, which included all aspects of herd health, reproduction and surgery of production animals, including lecturing in camelid medicine. In this clinic she also saw a large number of camelids and in particular dromedary patients and this soon became her special focus. Two years ago she was approached by the *Australian Wild Camel Corporation* to work as the Chief Veterinarian Officer to help establish a large scale commercial camel dairy. She is committed to assisting all camel producers develop the industry in Australia.

Abstract

A HEALTHY ANIMAL: THE BEATING HEART OF THE INDUSTRY

Dr Margaret Bale

Australian Wild Camel Corporation, Queensland

Camels are the ultimate production animal. They produce milk, fibre and meat and are currently the most under-utilised resource in animal production in Australia. At the core of any animal production industry is the primary health of the animal, as an individual and as a herd. The Australian camel industry is unique. We often utilise feral camels and ask of them domestication and high production. This is entirely possible if we put the health of the animal first. I aim to provide the tools needed for practical on farm Veterinary assessment, disease risk management and herd health strategies for the modern Australian camel dairy farmer. With a hands on approach we will examine topics from gestating cow health and genetic selection; calf health; parasite control; husbandry; biosecurity and of course mastitis, with all information tailored to the Australian producer. My aim as a Veterinarian on the front line of this industry, on farm, every day, is to empower the producer with the information needed to bring the camel dairy industry into the mainstream.

Lauren Brisbane

Director, QCamel Camel Dairy, Queensland

Lauren is the Director of *QCamel Camel Dairy* on the Sunshine Coast and is currently Vice Chair of the *Australian Camel Industry Association*; she was Chair and a founding member for the previous six years. She advises both Federal and State Governments on the development of the camel dairy industry in Australia and NGOs on industry matters. She was industry member on the *Australian Feral Camel Management Project*. She has worked in agri-business in Queensland for the past 17 years and has worked in the camel industry in Australia for the past 11 years. Lauren is passionate about the development of the camel industry as an alternate pastoral industry, its development throughout indigenous Australia, and developing a world class camel milk industry. Her expertise extends to camel dairy development, product development, breeding, land management, co-grazing with cattle, husbandry and milk production and laboratory science.

Abstract

HUSBANDRY, STAFF TRAINING AND CAMEL CONDITIONING

Lauren Brisbane (Australia)

QCamel Camel Dairy, Queensland

Drawing on her agri-business background and broad husbandry experience, Lauren will talk about various important aspects of staff training, camel husbandry and camel conditioning.

Dr Bernard Faye

Independent international camel expert for the United Nations Food and Agriculture Organization (FAO); the World Health Organisation (WHO); and the World Organisation for Animal Health (OIE)

Formerly *Scientific Project Manager in Animal Production* at the *International Cooperation Centre for Agronomic Research in Development (CIRAD)*, France. He obtained his Doctorate in veterinary medicine at Lyon (France) in 1974, completed a MSci in animal nutrition and endocrinology in 1980. He spent eight-years in Africa, working both in development (Niger) and in research (Ethiopia). He went on to obtain a PhD in animal epidemiology in 1995 (*Paris University*), then habilitation to manage a research team (HDR; Montpellier University) in 1998. He continued in France as an epidemiologist at the Ecopathology Laboratory (National Agronomic Research Institute -INRA) at Clermont-Ferrand and was head of this laboratory for ten years where he studied disease risk factors in dairy farming systems. Dr Faye has been awarded the French Vet Academy and “Chevalier du mérite agricole” (Ministry of Agriculture high distinction). He has authored 23 books and written more than 600 scientific papers. He is one of the founders of the International Society of Camelid Research and Development (ISOCARD) and was first chairman of this Society (2006-2009).

Abstract

THE CHALLENGES FOR SUSTAINABLE MODERN CAMEL FARMING

*Bernard Faye
International FAO camel expert
Montpellier, France*

In some countries, camel farming is changing from traditional extensive forms to modern semi-intensive or even intensive forms. This could challenge the established perception of the camel farming as an environmentally sustainable production system. The challenge for all camel stakeholders is to maintain this image and to promote “sustainable development”. This involves the control of the camel demography which must be balanced with the environmental carrying capacity, the development of alternative feeding systems for preserving the water resources, and the development and promotion of high-value products to the growing market.

Dr Rafat Al Jassim

University of Queensland, Australia

Dr Al Jassim is a Nutrition Biochemist and Gut Microbiologist who is holding an Honorary Associate Professor position at the *Centre of Animal Science, Queensland Alliance for Agriculture and Food Innovation* and at the *Australian Institute for Bioengineering and Nanotechnologies (AIBN)*.

Dr Rafat Al Jassim is an animal scientist with specialisation in Nutrition Biochemistry and Gut Microbiology and their application to bovine, equine and camel husbandry. He has more than 30 years' experience in nutrition research especially of the ruminant animals.

Abstract

NUTRIENT REQUIREMENTS FOR CAMELS

Rafat Al Jassim

The University of Queensland

The aim of this presentation is to shed some light on certain aspects of nutrition and feeding of camels and to attempt to provide estimates for energy and protein requirements for maintenance and milk production of camels.

Little information is available on the correct nutrition of camels for the different production systems. This is partly due to the fact that nutrient requirements for camels have not been determined and only a few requirement studies are available. Some recommendations are available but unfortunately these estimates were derived from beef cattle requirements. Our knowledge of the anatomical, physiological and feeding differences between camels and cattle make the reliability of such estimates far from realistic or accurate. Despite the differences, there are many similarities between the two species and the simplest way to establish a sound understanding of camel nutrition would be to conduct a systematic comparison of camels and cattle in a variety of nutritional situations.

Energy and protein requirements for maintenance and growth of camels were derived from an indirect calorimetric study and a factorial analysis of results from feeding and nitrogen balance trials, reported during the 1990s. Estimates for energy requirements for maintenance ranged between 0.314 and 0.374 MJ/kg^{0.75}. On the other hand, protein requirement for maintenance was averaged at 2.18 g/kg^{0.75} of digestible crude protein.

This is not satisfactory and there is an urgent need to start a structured program to measure the requirements for energy, protein and other nutrients for breeding, growing and dairy camels.

Chris O’Hora

Founder, owner and Managing Director of Calamunnda Camel Farm, Western Australia

Chris O’Hora has a “hands-on” role in day to day operations and management of the farm. Chris has had a long relationship and interest in camels, he was first exposed to the dromedary in 1959 in the isolated country town of Finley, NSW, Australia; an area not too far removed from the travels of Australia’s famous explorers (*Robert O’Hara Burke*) “Burke and Wills,” who used camels in their expedition. Chris has a full time association with camels for 30 years, owning herds in excess of 130. He has traveled and trained extensively worldwide, giving training and presentations in Indonesia, Singapore, the UAE and Australia. Chris holds a Certificate IV (4) in workplace training and assessing, Chris has a wide connection with the international camel community. He established Australia’s first commercial camel dairy, which continues to operate today. He is a colorful, friendly character and a respected motivational speaker and trainer, he is intuitive and grounded.

Abstract

STAFF TRAINING, CAMEL HUSBANDRY AND CAMEL CONDITIONING

Chris O’Hora

Calamunnda Camel Farm, Western Australia

This talk will cover three important factors that need to be addressed if you want to successfully operate a camel milk dairy: 1) staff training; 2) camel husbandry; and 3) camel conditioning. In terms of staff training, the ability to find and educate the “right” people is crucial. Constant performance assessment is vital to ensure the maintenance of high standards. Of course, there are also a number of legislative and compliance matters that must be adhered to. Proper record keeping is essential to meet these requirements, but records also provide important information on quality assurance and assist ‘learning’. Lastly, when it comes to camel husbandry there are many factors to consider if you are to ensure staff and camel wellbeing. I will discuss these factors in detail.

Dr J.A. (Lulu) Skidmore

Scientific Director of the Camel Reproduction Centre, Dubai

Dr Lulu Skidmore joined the Camel Reproduction Centre in 1991 as post-graduate research student, and successfully completed her PhD, "Reproduction in the dromedary camel," from *University of Cambridge*, UK in 1994. Subsequently, she has remained as Scientific Director of the *Camel Reproduction Centre* in Dubai, leading a team of scientists covering all aspects of camel reproduction including embryo transfer, AI and hybridization of New and Old World camelids.

Abstract

SELECTIVE BREEDING AND ARTIFICIAL INSEMINATION FOR IMPROVED MILK PRODUCTION IN CAMELS

J. A. Skidmore.

Camel Reproduction Centre, Dubai, United Arab Emirates

Camels are very important animals for their ability to produce meat and milk in arid climates. Nowadays there is increasing interest in milk production from camels as its nutritional and health benefits become more apparent. High producing camels are therefore valuable to breed from however their reproductive efficiency is low. The techniques of artificial insemination and embryo transfer are therefore being used to increase production rate of genetically superior animals and therefore increase milk production. Reasonable pregnancy rates of 50-70% can be achieved after insemination of fresh semen or transfer of fresh embryos respectively. The challenges involved will be discussed.

Marlin Troyer

Camel Milk Association, Michigan, USA

Marlin was born on a dairy farm in 1980. He grew up doing construction (log homes), but was always involved with animals and animal training. He worked in retail for 10 years from 2000-2010. Marlin then went into camels and he has been milking and breeding camels for 7 years now and founded the *Camel Milk Association* (www.camelmilkassociation.org). Marlin and his family care for 45 camels and a herd of beef and Highland cattle, among other animals. This year he plans to open a Safari park with camel rides, petting zoo and corn maze in Custer, Michigan on a State Highway. He also serves as a volunteer Chaplain and as an active member of the local fire department. For further information, Marlin has provided a link to their 'About us' page: <http://www.camelmilkassociation.org/about-us-troyer-family-farming-living-with-organic-convictions.html>

Abstract**IMPROVING CAMEL DAIRY PRODUCTION AND PRODUCT QUALITY**

Marlin Troyer (USA)

Camel Milk Association, USA

This talk will reflect upon the experiences and the knowledge that I have gathered from running a small camel milk dairy operation as a family business. We were the second camel milk producer to enter the US commercial market. My talk will specifically focus on improving camel dairy production and product quality for small farm enterprises.