



NRCC

a premier research centre



At a glance



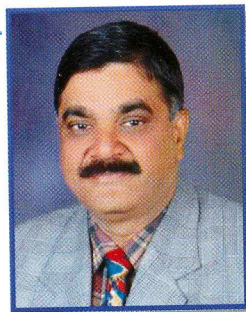
National Research Centre on Camel

(Indian Council of Agricultural Research)

Jorbeer, Bikaner- 334 001. (Rajasthan)

India

The camel is an important animal component of the fragile desert ecosystem. The camel has become an icon of adaptation, with its unique bio-physiological characteristics, to formidable ways of living in arid and semi-arid regions. The proverbial ship of desert earned its epithet on account of its indispensability as a mode of transportation and draughtability in desert. However, its utilities are subject to continuous social and economic changes. The camel has also played significant role in civil law and order, defence and battles from the ancient times till date. Camels formed an important component of Mauryan Army (C.322-232 BC) and continued through Mughal period (1200-1700 AD) to the present times. The world famous Ganga-Risala of erstwhile Bikaner state was accepted as Imperial Service Troup and participated in World War I and II. Presently, the camel corps constituted an important wing of Border Security Force of Indian Para-Military Service.



Prof. K.M.L. Pathak
Director

Considering the importance of camel in the socio-economic development of arid and semi-arid zones, Government of India established a Project Directorate on Camel at Bikaner in Jorbeer on 5th July 1984 under the auspices of Indian Council of Agricultural Research (ICAR) which was upgraded to National Research centre on Camel (NRCC) on September 20, 1995. It is about 10 km from Bikaner railway station and located on bypass road of Bikaner - Jodhpur Highway.

Initially, the centre started with the mandate of developing infrastructure facilities for conservation and preservation of existing breeds of camel and generate scientific and technical information. With the changes of scenario in agriculture and livestock sector, particularly in terms of a shift towards mechanization, the NRCC has taken up issues with an aim of restoration of cultural, economic and aesthetic value of camel in the rural life of Indian desert. It is a premier institute for research and development of camel and provide leadership through basic and applied multi-disciplinary research and training and also acts as a national repository of information on camel.

Since the distribution of dromedaries (one humped camel) in India is confined to North-Western dry desert spread out in parts of Rajasthan, Gujarat and Haryana, the NRCC is mainly focusing on basic and applied research on one humped camel. The Centre is also addressing issues of bactrians (double humped camel) found in the cold desert of Nubra valley of Laddakh (J&K). Over the years excellent infrastructural facilities including modern laboratories, excellent library, elite herd and camel museum have been developed making it into a premier research centre on camel across the globe. The Centre has also been identified as one of the important tourist place of Bikaner. Every year thousands tourists visit this centre from various countries and different parts of India. The tourists visiting the centre can see the camels of three breeds and their behaviour. The camel museum is available to apprise them of the developmental and research aspects of the camel in desert ecosystem. Facilities of camel riding, camel safari and video photography are available for the visitors. The NRCC is open to tourists from 14.30 hrs to 18.00 hrs on all days.

The NRCC fascinates scientists, visitors, pastoralists, farmers and society at large. The NRCC- at a Glance is presented to provide a ready and quick scan of institute to all kind of visitors.

Mandate of the centre

- ❖ To undertake basic and applied research for improvement of camel
- ❖ To provide leadership and co-ordinate camel research and training nationally and act as a national repository of information
- ❖ To collaborate with national and international agencies for camel research and development

Resources and facilities

Administrative (ADM) building: The Director's cell, reception, establishment section, central stores, dispatch section, cash unit, committee room, official language section and canteen are located on the ground floor of this building.

Library: The library is situated on the first floor of ADM building. It is well enriched with a good collection of literature and has 6742 reference books. All the books are bar-coded. The library subscribes to about 30 Indian and 10 foreign journals, magazine and newspapers. Reprographic facility is also available in the library.

ARIS Cell: The ARIS Cell, situated on the first floor of ADM building, is well equipped with the latest software, a broadband VSAT, LAN and a server. In addition, all the scientists are also provided with computers, e-mail and internet facility.

Laboratories: The NRCC has modern laboratories situated in three different complexes. The main research complex has laboratories for camel physiology, reproduction and biochemistry, breeding & genetics, health and management. The other complexes have camel Nutrition and Pathology laboratory, respectively. These laboratories are equipped with sophisticated instruments such as automatic DNA sequencer, HPLC, GLC, UV-visible double beam spectrophotometer, atomic absorption spectrophotometer, PCR, universal research microscopes with photographic attachment, stereo zoom research microscope, micro-manipulator, programmable freezer, liquid nitrogen plant, high speed refrigerated centrifuge machine, ELISA reader, deep freezer (-20°C to -80°C), high quality water purification system, cryo-preservation apparatus, CO₂ incubator, gamma counter, automatic blood chemistry analyzer, PAGE apparatus, besides other routinely used scientific equipment such as hot air oven, BOD incubators and high precision electronic balances.

Livestock farm : The farm maintains an elite herd of about 270 camels comprising of Bikaneri, Jaisalmeri and Kachchhi breeds. The farm is equipped with one camel dispensary, six open sheds, six roofed sheds, three camel boxes and metabolic cages. The farm has also fodder and feed godown, one feed block making plant and weigh bridge.

Agro-forestry farm & Range land : The centre has 689 ha land partitioned in five blocks with three tube wells. The land has been brought under perennial silvipasture comprising of grasses, shrubs and trees. The main grasses are sewan (*Lasiurus indicus*) and blue panic (*Panicum antidotale*).

Residential complex : The residential colony comprising of 2 type V, 4 type IV, 5 type III, 9 type II and 13 type I staff quarters is situated at main campus.

Guest house : The centre has one guest house with four A/C and two non - A/C rooms with kitchen, dining and reception halls.

Camel museum : The centre has one camel museum which offers a visual documentary of cultural, ethical, social, economical and scientific aspects of camel. It possesses the specimens of various utility products made out of camel bones and hide. There is pictorial and iconological depiction of role of camel in history and mythology.

Camel milk parlour: The centre has established a milk parlour where different products such as flavored milk, lassi, ice-cream, tea and coffee prepared from the camel milk are available.

Others: Modern facilities like a conference room with 120 sitting capacity equipped with LCD projector and public address system and a committee room with 40 sitting capacity with multimedia facility are available for holding scientific conference, meetings and group discussions. A spacious community centre has also been constructed for organizing academic, cultural & other creative activities. Presently it is being furnished. The ADM building, guest house and all laboratories are provided with uninterrupted power supply by a 160 KVA generator set.

Human Resources

The centre has a sanctioned cadre strength of 20 scientists, 23 technical, 10 administrative and 22 supporting staff.

Networking and Collaboration

The centre has active collaboration with agricultural universities like RAU, Bikaner, MPAUT, Udaipur, CCSHAU, Hissar and research organizations like BARC, S P Medical College, Bikaner, AIIMS, New Delhi and other ICAR institutes. Besides, a healthy interaction exists between the centre, NGOs and camel keepers.

Thrust areas

- ❖ Survey, evaluation and conservation of camel genetic resources
- ❖ Selection for faster growth and early maturity
- ❖ Selection for development of camel as dairy animal
- ❖ Improvement of reproductive efficiency in camels
- ❖ Development of A.I. and embryo transfer technology in camel
- ❖ Camel genome analysis or gene mapping in camel
- ❖ Surveillance, monitoring and control of camel diseases
- ❖ Development of diagnostics against camel diseases
- ❖ Evaluation of camel milk and its products for their therapeutic values
- ❖ Exploring the camel immunoglobulins for *in vivo* diagnostics
- ❖ Development of low cost ration for camel
- ❖ Rumen kinetics
- ❖ Utilization of camel energy
- ❖ Socioeconomic and cultural aspects related to camel husbandry
- ❖ Promotion of camel in eco-tourism

Salient achievements

- ❖ Development of an elite herd of 270 camels of Bikaneri, Jaisalmeri and Kuchchhi breeds by selective breeding
- ❖ Assessment of camel draught ability during carting and agricultural operations

- ❖ Reduction in the camel calf mortality through improved management practices
- ❖ Characterization of camel breeds through molecular markers
- ❖ Studies on qualitative and quantitative genetic parameters of camels
- ❖ Two gene chains responsible for camel milk synthesis registered with the gene bank
- ❖ Deep freezing of camel semen and standardization of embryo transfer technology
- ❖ Development and production of value added camel milk products
- ❖ Diagnosis of Surra disease with the genome of trypanosoma parasite based upon polymerase chain reaction
- ❖ Production of high digestibility feed blocks from the locally available crop residues

Facilities available at the centre

- ❖ Distribution of genetically improved studs to village panchayat samities and camel keepers through Rajasthan animal husbandry department
- ❖ Free breeding facility for the female camels brought by their keepers during the breeding season
- ❖ Organizing training programs for camel keepers and veterinarians
- ❖ Providing facilities to the research scholars registered with the universities
- ❖ Marketing of value added milk and its products through camel milk parlor
- ❖ Dissemination of newly developed technical information on camel keeping through exhibitions and Kissan goshties
- ❖ Facility of camel riding, safari and museum viewing for tourists

Programs for the future

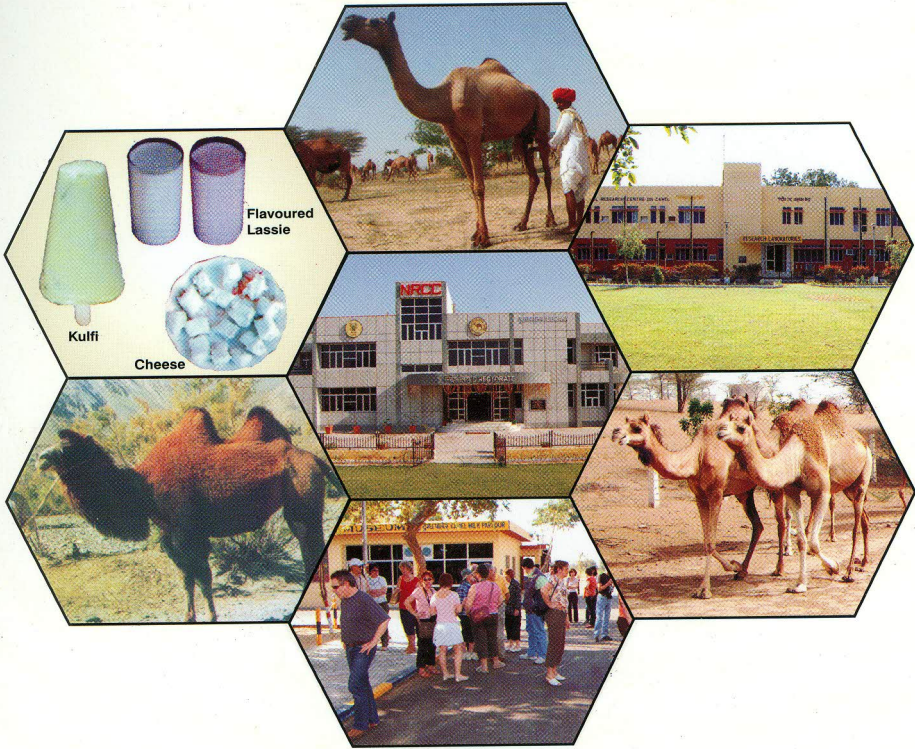
- ❖ Establishment of camel informatics centre
- ❖ Conservation and propagation of double humped camel
- ❖ Utility of single domain anti-bodies for diagnosis and therapy
- ❖ Validation of the nutraceutical and therapeutic potential of camel milk
- ❖ Plantation of fodder trees and fodder crops for camels
- ❖ Research on rumen biotic and kinetics
- ❖ Adaptation of camels in specific environment, urea cycling, water and mineral metabolism
- ❖ Socio-economic aspects of camel management in arid and semi-arid ecosystems

Trainings / Courses Organised

- ❖ Camel management and health
- ❖ Molecular markers for characterization of camel breeds
- ❖ Database management
- ❖ Sonography of reproductive organs and cryo-preservation of camel semen
- ❖ Preparation of value added camel milk products.

Past Directors

- Dr. N.D. Khanna (05.07.1984 - 30.09.1997)
- Dr. M.S. Sahani (30.09.1997 - 31.08.2006)
- Dr. G.P. Singh (01.09.2006 - 12.12.2006)
(Acting Director)



For further details please contact

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