



NRCC NEWSLETTER

Camel Research

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From the Director's Desk

It gives me immense pleasure in putting forward the first issue of a new series of ICAR-National Research centre on Camel, Bikaner's newsletter "Camel Research". Amid dwindling camel population in India, it is noteworthy that overall camel population of the world has shown rising trend during the past decade. Traditional utility of camels have declined in India due to increase in road networks, mechanization of agriculture and urbanization along with shrinking grazing/ forest land. Nevertheless, recent research reports validating therapeutic/ beneficial effects of camel milk, urine and other products/ byproducts in several human ailments like autism, diabetes, liver diseases etc. have opened new horizons of alternative usage of this unique animal species that could help increasing remuneration from camel farming. Unique camelid antibodies, also known as nano-antibodies have potential use in diagnosis as well as therapy of a variety of human and animal's diseases. Camel also has potential to serve as an alternate animal model (in place of horses) for commercial level anti-venom production. Moreover, a long series of value added camel milk products have been developed to increase public acceptability and demand of camel milk and milk products. The Centre is also extending helping hands to different NGOS, SHGs and other public/ private organizations involved in the camel husbandry/ sale of products and byproducts of camel origin by providing trainings/ technical supports and advisories. I hope, this newsletter will be useful for common people as well as scientists and stakeholders of camel farming system. I wish for the bright future for this unique animal germplasm of our nation that has served for several centuries in the past and has helped the humankind in survival amid tough climatic conditions of desert ecosystem of the country and abroad.



Dr. Artabandhu Sahoo

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ICAR-NRCC Camel Farm

NRCC has been identified as one of the important tourist place of Bikaner and is included in the tourist book. The tourist visiting the Center can see the camel of different breeds and their behavior. A camel museum is available to apprise them of the developmental and research aspects of the camel in the desert ecosystem. Facilities of camel riding, safari and video/photography are available for the visitors. Camel milk parlour is a special attraction because it vendors unique value added camel milk products like ice-cream, hot and cold beverages. Every year thousands of Foreign and Indian Tourists visit the Center.

Disclaimer: The contents of this newsletter are purely informative in nature. Though all efforts have been made to keep the contents of this newsletter up to date, the same should not be construed as a statement of law or used for any legal purpose.

RESEARCH HIGHLIGHTS

Blocking a superbug transporter with camelid antibodies

Camels, llamas and sharks have unique single-domain antibodies that are much smaller compared to conventional antibodies and interact more effectively with deep pockets on the surface of bacterial antigens. In a recent collaborative research work conducted at ICAR-NRCC, Bikaner and IISc, Bangalore, the atomic-resolution structure of NorC, in complex with an Indian camelid antibody (ICab) was explored.

It was found that the camelid antibodies (ICab) not only did the transporter get locked in a single state, but also effectively plugged the transporter like a “bottle-cork”, rendering it incapable of

interacting with antibacterial compounds. NorC is a transporter found in *Staphylococcus aureus* that helps them providing resistance against broad-spectrum antibiotics like norfloxacin and moxifloxacin. The ICab inserted itself into the substrate-binding cavity of the transporter, effectively blocking its access to an antibacterial compound. These insights will significantly help to formulate the strategies to counter transporter-mediated antibiotic resistance in pathogenic bacteria, using the tool “camelid antibodies”. The research findings were published in reputed international journals like *Biological Communications* and *Journal of Biological Sciences*.

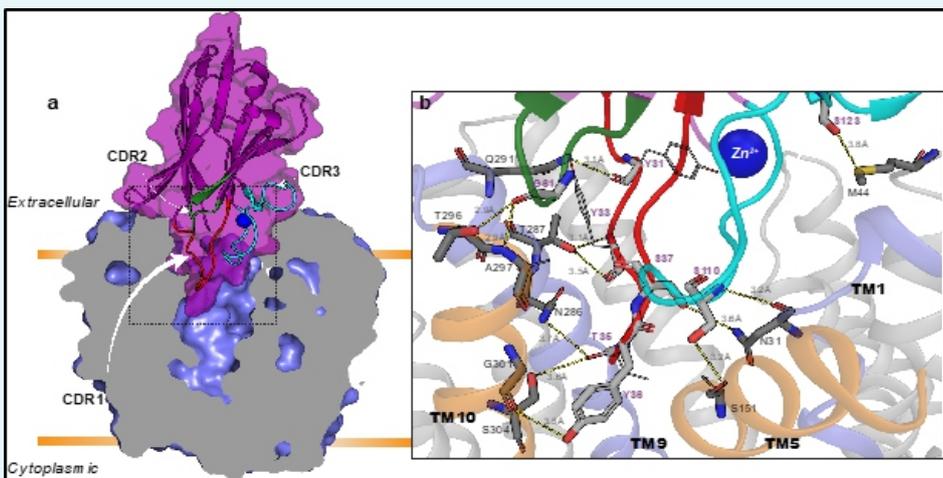


Figure: NoC bound to Icab3 with a deep insertion into the extracellular vestibule, b. CDR1 wedges between TM5 and 10 to block alternating-access in the transporter.

Neem based formulation is effective in treatment of Sarcoptic mange in camels (*Camelus dromedarius*)

In a clinical trial, topical application of Neem leaf based formulation was found effective in treatment of Sarcoptic mange in camels. In the drug trial, it was inferred that Neem based herbal

formulation gave better result than ivermectin.



Figure: Mange affected camel showing grey colored, dry hard hairless skin.



Figure: Camel affected with Sarcoptic mange showing recovery after 7th application of herbal formulation. Skin and hair coat become shiny and glossy with absence of keratinization.

Papilloma like disease in Camel

An outbreak of papilloma like disease occurred in 5 young camels (1-2 years age) of the farm. The camels showed mild benign wart like lesions having size ranging from 0.5 to 1.5cm on lips and muzzle area. Histopathology of warts revealed hyperkeratosis, acanthosis and enlarged keratohyaline granules in epidermal cells. However, the PCR for papilloma virus, camelpox virus and contagious ecthyma virus was found negative.



Figure: Wart lesions in rostral region of dromedary camel

Calf born with congenital defect (cranium bifidum with meningocele)



Figure: Calf with congenital defects.

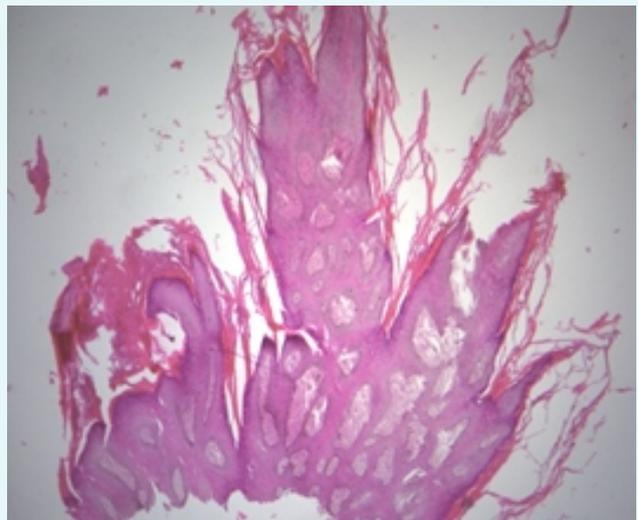


Figure: Histopathology of wart showing hyperkeratosis, papillomatosis, acanthosis and rete ridges with their axis inclined toward the center of the lesion.

A formulation for the treatment of dermal Mycoses in Camel (Patent Grant No. 347971)

Mycotic skin infections are a constant serious problem in camels from various parts of the world. Round the year about 20% of the camel population suffers with dermal mycoses. In an embodiment, the present invention provides a composition comprising an extract of Eucalyptus (*Eucalyptus globulus*) leaves, extract of Anar (*Punica granatum*) leaves and juice of Garlic (*Allium sativum*) clove. In yet another embodiment, the composition of the present invention can be formulated into suitable formulations such as oil based formulations, powder, granules, tablets, ointments, creams, lotions. The dry formulations like powder, granules, can be for direct application, or can be reconstituted into suitable water or oil base prior to application. After treatment with the composition of the present invention, any sort of abnormal skin, like dry, scaly and bleeding surface occurring due to fungal lesions was found to be indistinguishable from normal skin after two months of application of the drug, including hair growth in all the treated animals. The composition can be applied and used in mycoses caused by any of the fungi, or even if caused by a combination of fungi. The duration of treatment is short and cure or relief is being achieved with only three applications within seven days of total duration of treatment. The composition is also safe and no specific adverse effect on skin has been recorded. The efficacy of the composition of the present invention is also confirmed by symptomatic examination, mycological examination and histopathological examination. The composition is also found effective in healing of minor wounds, erythema, oedema, inflammatory changes observed on the skin of infected camels.



Figure: Camel with dermal mycoses showing healing of skin lesions post treatment.

Development of value-added products from Camel milk

Oxidative stable camel milk flavoured butter and oxidative stable camel milk ghee have been developed. The product is made from 100% camel milk, it has sensory attributes comparable to that of regular butter products available in the market. Moreover, the product has higher oxidative stability than the available products in the market. Another product i.e. camel milk peda has also been developed. The product is made from camel milk Khoa prepared using automatic processing machines. The product has good sensory attributes.



Figure: Oxidative stable camel milk ghee.



Figure: Camel milk peda.



Figure: Oxidative stable camel milk flavoured butter.

Successful characterisation of Indian dromedary camel MHC class II DQA gene exons

For amplification of camel MHC class II DQA gene exon-2 region, primers were designed using camel reference genome sequence. A 418 bp long gene fragment spanning 249 bp long exon-2 region of DQA gene was amplified in Indian camel (Fig-1). Besides the exon-2 region of the DQA gene other exon i.e. exon-1, exon-3, exon-4 and exon-5 was also characterized. For exon-1 characterization a 464 base long sequence was analyzed which contained 82 bp long exon-1. A 807 bp long sequence was amplified and was subjected to direct sequencing for characterization of exon 3-4 region of camel MHC class II DQA gene. The length of DQA exon-3 and exon-4 was found as 282 and 155 bp respectively in Indian dromedary. A 701 bp long nucleotide sequence was amplified for characterization of exon-5 region of MHC class II DQA gene. A 552 bp long DQA Exon-5 region was identified.

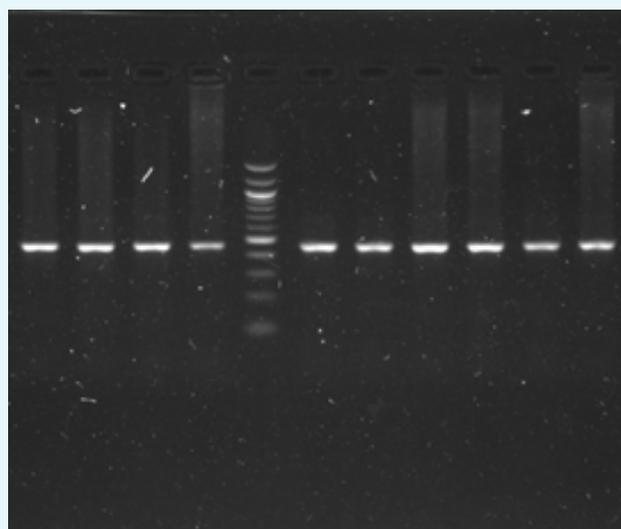


Figure: PCR amplification (418 bp) of exon-2 and partial intron region of MHC class II DQA gene.

EVENTS ORGANIZED

Research Advisory Committee meeting of ICAR-NRCC

Research Advisory Committee meeting of NRCC was held (11-12 April, 2022) under the chairmanship of Prof. P. K. Uppal (Former Adviser - Animal Husbandry, Punjab Government. Dr. Amrish Kumar Tyagi (Assistant Director General (ANP), ICAR), Dr. D. K. Agarwal (former Head, Animal Nutrition, ICAR-IVRI), Prof. Girish Verma (Former Director, KVASFU, Kerala), Mr. R G Suthar and Mr. Brijendra Poonia, physically participated RAC meeting and Dr. P. H. Vataliya (Director-Extension, Kamdhenu University, Gujarat), Dr. J R. Rao (Former Emeritus Scientist, NARM, Hyderabad) and Dr. R. R. B. Singh (Joint Director-Academic, NDRI, Karnal) also joined the meeting online. Dr. Artabandhu Sahoo briefed the committee about the research achievements and ongoing activities of ICAR-NRCC. Prof. P K Uppal (Chairman, RAC Committee) appreciated the research work and practical efforts being done by NRCC for the socio-economic development of the camel farmers. The Chairman congratulate Dr. Sahoo (Director, ICAR-NRCC) for the recently released 'KaMilk' - millet biscuit and fermented milk products from camel milk.



Institute Research Committee meeting of ICAR-NRCC

Institute Research Committee (IRC) meeting was held on 20th April, 2022 wherein ongoing research projects were reviewed and discussed. The new projects related to mandate of the institute were also initiated. Dr. Rajan Gupta, Principal Scientist, ICAR, New Delhi also participated in the meeting.

Exhibition of technology developed by ICAR-NRCC at Shri Mallinath Pashu Mela, Tilwada, Barmer

Technologies developed by ICAR-NRCC, Bikaner were displayed in front of progressive farmers, women, agriculture and veterinary students, and agripreneurs from different corners of Rajasthan at this animal fair. Detailed information regarding camel farming and camel milk-based enterprise development were shared with the farmers and entrepreneurs who participated in the fair. Efforts were made to popularise pasteurised camel milk and milk-based products among common people, farmers and other delegates.



Seven days workshop on 'Recent Advances in Diagnosis and Management of Zoonotic Diseases'

The programme was sponsored by Science and Engineering Research Board, Department of Science and Technology, GOI. The objective of this workshop was to provide introductory knowledge and hands-on training to PG and Ph.D. students on recent techniques available for diagnosis and management of zoonotic diseases and to guide and motivate them to undertake research in the field of zoonoses. Participants get knowledge and skill on overview of important zoonotic diseases, laboratory diagnosis test for zoonotic diseases (e.g. MALDI-TOFF, RT-PCR, primer designing and sequence chromatogram, RNA Isolation and c-DNA synthesis, Cell culture techniques, ultrasonography, etc). Dr. Ashok Kumar (ADG Animal Health, ICAR) encouraged the participants and highlighted importance of zoonotic disease in camels. Dr. Artabandhu Sahoo (Director, ICAR-NRCC) had share an overview of important zoonotic diseases. Dr. Rakesh Ranjan (PS, ICAR-NRCC) was the organiser and Dr Shirish D Narnaware (Senior Scientist, ICAR-NRCC) & Dr. Shyam Sundar Chaudhari (Scientist, ICAR-NRCC) were the co-organizer of this workshop.



Exhibition of technology developed by ICAR-NRCC at ICAR-CSWRI, Arid Region Campus, Bikaner

A team of Scientists and technical officers from the ICAR- National Research Center on Camel, Bikaner participated in an exhibition on 7th April 2022 held on the occasion of 49th foundation day of the ICAR-CSWRI, Arid Region Campus, Bikaner. About 150 participants visited the NRCC stall.

NRCC organised an in-depth discussion on development of camel-based ecotourism

On the occasion of Earth Day (22 April 2022) at the ICAR-National Research Centre on Camel, Bikaner an in-depth discussion was organized in the context of camel-based ecotourism development. The discussion was organized under the chairmanship of Dr. Artabandhu Sahoo (Director, ICAR-NRCC). The advisors of the Ministry of Tourism, New Delhi, the camel farmers, young entrepreneurs and scientists of NRCC participated on this discussion. In this meeting, Dr. Navina Jafa and Shailaja Kathuria (Consultant, Ministry of Tourism), emphasised on the grassroots level efforts to promote camel-based tourism in sustainable way. Dr. Artabandhu Sahoo (Director, ICAR-NRCC) share his experience in efforts being made by NRCC to promote camel eco-based ecotourism. Dr. Sahoo said that we should not limit tourism to only tourist places, but take them to villages with adopting an environmentally sustainable approach. He explained in detail the medicinal properties of camel's milk and its role in promotion of tourism.

International Seminar on 'Emerging and Re-emerging Diseases of Camels'

ICAR-ICAR-National Research Centre on Camel, Bikaner organised an International Seminar on "Emerging and Re-emerging Diseases of Camels" on 25 April, 2022. Dr Ashok Kumar (Assistant Director General-Animal Health, Indian Council of Agricultural Research) delivered his lecture on the current epidemiological status of zoonotic diseases in camels. He also shared the national-level initiatives to address zoonotic diseases. Dr Abdelmalik I. Khalafalla (Professor, Veterinary Laboratory Division, Abu Dhabi Agricultural and Food Safety Authority, Abu Dhabi, UAE) highlighted emerging and re-emerging diseases of dromedary camels in detail. The Chairman of the conference, Dr A. Sahoo (Director, ICAR-NRCC) informed the participants about the importance of such conference and the contribution of ICAR-NRCC to the research of camel diseases. About 138 participants get direct benefits from this event.



Kisan Bhagidari, Prathamikta Hamari campaign

ICAR-NRCC, Bikaner organized an 'Animal health cum awareness development camp for livestock farmers' at Anaj Mandi, Bikaner under Kisan Bhagidari, Prathamikta Hamari Campaign as a part of Azadi Ka Amrit Mahotsav. A total of 52 camel farmers/ camel cart owners along with their camel carts participated in this event.

Round Table Conference on 'Harnessing Full Nutraceutical Potential of Non-Bovine Milk'

ICAR-ICAR-National Research Centre on Camel, Bikaner organised a Round Table Conference on Harnessing Full Nutraceutical Potential of Non-Bovine Milk on 28th April 2022. The chairman of the conference, Prof (Dr) A. K. Srivastava (Chairman, ASRB, New Delhi) flagged the issues on the contribution of non-bovine milk. Two camel milk products viz. KaMilk-Probiotic drink and KaMilk-Raabri were released, the Camel Demonstration Point and a camel statue were inaugurated at the hands of Prof (Dr) A. K. Srivastava (Chairman, ASRB). Total of 73 persons from different ICAR institutes, NGOs, milk-based private enterprises and other organisations.



World veterinary day celebration

On the occasion of World Veterinary Day, a student-scientist interaction meet was organised at the Auditorium of ICAR-NRCC, Bikaner on 30th April 2022. A group of students and resource person from the College of Community Science, Central Agriculture University, Tura, Meghalaya attended this meeting. Dr A. Sahoo (Director, ICAR-NRC on Camel) congratulated all the veterinarians on this occasion and described the opportunity of camel hair in textile industry. Total of 41 participants attended this interaction meet.



Three Days Training Programme under TSP

ICAR-NRCC organised a three days training programme on 'Ushtra Palan: Vyavsayik Chaunitiyan evam Aajivika Surksha' from 26th to 28th May, 2022 under Tribal Sub-Plan (TSP) in which 20 camel keepers of Abu Road (Sirohi Distt.) participated.

Memorandum of understanding (MoU) signed between NRCC and NAARM

A new MoU has been signed between ICAR-National Research Centre on Camel (NRCC), Bikaner and a-IDEA of National Academy of Agricultural Research Management (NAARM), Hyderabad on 12th May 2022. a-IDEA (Association of Innovation Development for Entrepreneurship in Agriculture) is a Training Business Incubator hosted by NAARM that provides assistance to budding entrepreneurs in capacity building, incubation services, business support services and technology portfolio management. Under the new MoU, NRCC will encourage and train farmers and entrepreneurs for the development of small scale industries related to camel products. Dr. Artabandhu Sahoo (Director, NRCC) and Dr. Ch. Srinivasa Rao (Director, NAARM) signed this important MoU. Dr. Artabandhu Sahoo (Director, NRCC) said that under this MoU between NRCC and a-IDEA, this centre will provide training to farmers, entrepreneurs and small scale industries, interested in production, processing and industry related to various aspects of camel.



National Seminar on Arid Animal Husbandry and One Health Concept: Challenges & Opportunities

ICAR-NRCC organised a National Seminar on 'Arid Animal Husbandry and One Health Concept: Challenges & Opportunities' on 27 May, 2022. Dr. Tripathi (DDG-Animal Science, ICAR) emphasized on achieving balanced production by linking the traditional methods of animal husbandry with the new technologies, for which animal husbandry will have to be linked with one health concept. On this occasion NRCC released three handouts viz Paryatan Karyon ke liye Ooton ka Prabandhan, Sindhi Camel, and Opportunities and Constraints in Camel Production System and its Sustainability published by the Centre. Several new products from camel milk viz. Camel Milk Ghee (Bilona), Camel Milk Flavoured Butter, Camel Milk Peda (Kaju) were released.



One day training programme

ICAR-NRCC organised one day 'Ushtra Utpadan Laghu Udyog Prashikshan' on 27 May 2022 at the centre in which 4 rural women of Kotri village of Bikaner district participated.



Three days training programme under Tribal Sub Plan

A three days (26-28 May 2022) training programme on 'Camel Farming: Occupational Challenges and Livelihood Security' was organised by NRCC under Tribal Sub Plan (TSP). Dr. B N Tripathi (DDG-AS, ICAR) discussed with the farmers about camel business and especially the status of camel milk business in the area during this training. On this occasion, Dr. Artabandhu Sahoo (Director, ICAR-NRCC) shared information about the activities being done under the Tribal Sub-Plan by the Center.



Exhibition at State level Kisan Mela and 'Garib Kalyan Sammelan' at Jaipur

A State level Kisan Mela and 'Garib Kalyan Sammelan' was held at Ch. Charan Singh National Institute of Agricultural Marketing (NIAM), Jaipur on 31st May 2022. Technologies developed by ICAR-NRCC, Bikaner were being displayed at the exhibition stall. The address of Prime Minister Shri Narendra Modi at 'Garib Kalyan Sammelan' in Shima, Himachal Pradesh was broadcasted during this event. A similar gathering was also organised on the occasion of 'Garib Kalyan Sammelan' at Krishi Vigyan Kendra, Bikaner-I.



World Milk Day Celebration

On the occasion of World Milk Day on 1st June 2022, Dr R K Sawal (PS, ICAR-NRCC) delivered a lecture on the topic "Importance of camel milk on human life". The programme was attended by 200 students and other dignitaries.

World Blood Donor Day Celebration

ICAR-NRCC, Bikaner celebrated 'World Blood Donor Day' on 14th June 2022. Dr. Apra Kalra, Additional Director and Incharge, Blood Bank, Fortis Hospital, Mohali delivered an online lecture on 'Awareness and Criteria for Blood Donation' for the staff of the Centre.

World Camel Day Celebration

ICAR-NRCC, Bikaner celebrated 'World Camel Day' on 22 June 2022. Exhibitions, Camel Competitions and Animal Health Camp were organised on this occasion. Prof. Satish Kumar Garg, Vice-Chancellor, RAJUVAS, Bikaner was Chief Guest of the program.



World Environment Day Celebration

ICAR-NRCC, Bikaner celebrated 'World Environment Day' on 5th June 2022 and planted 100 Mulberry (Shahatut) and Cactus plants at the centre with active collaborations of the employees.



NRCC in NEWS



बीकानेर 13-05-2022

उष्ट्र उत्पाद संबंधी लघु उद्योग विकास के लिए एनआरसीसी देगा प्रशिक्षण

बीकानेर | राष्ट्रीय उष्ट्र अनुसंधान केन्द्र (एनआरसीसी) एवं ए-आइडिया-राष्ट्रीय कृषि प्रबंधन अकादमी हैदराबाद के बीच एम है। एनआरसीसी के नि आर्तबंधु साहू एवं नार्म, निदेशक डॉ. श्रीनिवास संस्थान में इस महत्वपूर्ण हस्ताक्षर किए हैं। डॉ.आर् इस संबंध में जानकारी दे कि इन दोनों संस्थानों के विशेषज्ञ पारस्परिक सम- इस क्षेत्र में रुचि रखने व उद्यमियों को तकनीकी जानकारी एवं कौशल विव प्रशिक्षण उपलब्ध करवाए



बीकानेर 20-04-2022

एनआरसीसी में पशु रोगों से जुड़ी कार्यशाला शुरू

बीकानेर | भाकृअनुप-राष्ट्रीय उष्ट्र अनुसंधान केन्द्र में मंगलवार से 'पशु रोगों के निदान एवं प्रबंधन के अभिनव प्रयास' विषयक 7 दिवसीय कार्यशाला का शुभारंभ हुआ। एनआरसीसी द्वारा आयोजित एवं एसईआरबी द्वारा प्रायोजित इस कार्यक्रम में देश के अलग-अलग राज्यों के 22 पीपीके व पीपीसी के

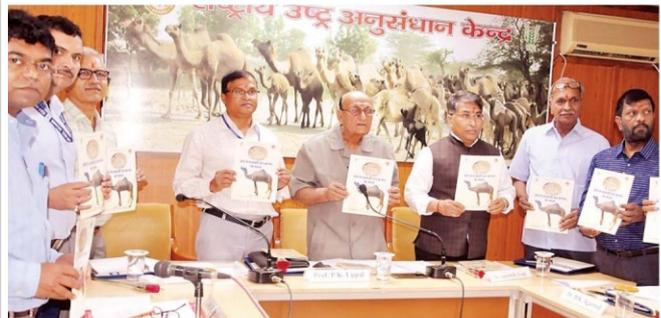
एनआरसीसी में पशुजन्य रोगों से जुड़ी सात दिवसीय कार्यशाला शुरू

बीकानेर (नस)। राष्ट्रीय उष्ट्र अनुसंधान केन्द्र में आज से 'पशुजन्य रोगों के निदान एवं प्रबंधन के अभिनव प्रयास' (रिसैट एडवॉन्सिन्ग इन डायग्नोस्टिक एण्ड मैनेजमेंट ऑफ़ जूनेटिक डीजिज) विषयक 7 दिवसीय कार्यशाला का शुभारंभ हुआ। एनआरसीसी द्वारा आयोजित एवं



लिए उचित निगरानी एवं व्यापक जन जागरूकता पर विशेष बल दिया जाना चाहिए। परंतु यह सभी संभव हो सकेगा जब देश के युवा विद्वानों में गहरी अभिरूचि प्रदर्शित करते हुए एक कड़ी के रूप में आगे आएंगे। डॉ. साहू ने ट्रेनिंग को गंभीरता से लेते हुए उन्ट परिश्रम में भी ज्ञान अर्जित करने एवं

एनआरसीसी अनुसंधान सलाहकार समिति की वार्षिक बैठक आयोजित



बीकानेर, (निस)। भाकृअनुप-राष्ट्रीय उष्ट्र अनुसंधान केन्द्र की अनुसंधान सलाहकार समिति की दो दिवसीय बैठक (11-12 अप्रैल) का पी.के. उपपल, पूर्व सलाहकार, (शुपालन) पंजाब सरकार की अध्यक्षता में समाप्त हुआ। बैठक में निदेशक डॉ. श्रीनिवास द्वारा

और अधिक बेहतर कार्यान्वयन, सही दिशा व अपेक्षित परिणाम के लिए समिति से उचित मार्गदर्शन की अपेक्षा जताई। समिति अध्यक्ष प्रो. पी.के. उपपल ने उन्ट प्रजाति को प्रदेश की धरोहर बताते हुए एनआरसीसी द्वारा उन्ट पालकों के समाजार्थिक विकास हेतु किए जा रहे अग्रगण्य कार्यों में

का व्यौरा प्रस्तुत किया जिन्हें समिति सदस्यों द्वारा सराहा गया तथा परियोजनाओं के बेहतर कार्यान्वयन तथा उद्देश्य पूर्ण लक्ष्यों की प्राप्ति हेतु अपने सुझाव प्रस्तुत किए। अनुसंधान सलाहकार समिति की इस बैठक के अवसर पर केन्द्र के तीन प्रकाशनों- 'उन्ट की नस्ल तथा विशेषताएं' जारी

ऊंटपालन से जुड़े स्वयं सहायता समूह -जिला कलक्टर

बीकानेर, (निस)। जिला कलक्टर भगवती प्रसाद कलाल ने कहा कि उन्ट उत्पादों की व्यापक मांग को देखते हुए ऊंटपालन जिले के ग्रामीण क्षेत्र के लोगों के लिए लाभकारी सिद्ध हो सकता है। जिला कलक्टर ने राजस्थान ग्रामीण आजीविका विकास परियोजना की बुधवार को आयोजित मासिक समीक्षा बैठक में ऊंट पालन और उन्ट दूध उत्पादों के प्रसंस्करण प्रशिक्षण व स्वयं सहायता समूह गठित करने के निर्देश दिए। उन्होंने कहा कि पिछले कुछ समय से उन्ट दुग्ध उत्पादों की मांग बढ़ी है। ऐसे में स्वयं सहायता समूह ऊंटपालन को व्यावसायिक तौर पर

अपना कर अच्छा लाभ कमा सकते हैं। इसके लिए अतिरिक्त प्रयास किए जाएं। भगवती प्रसाद ने कहा कि उन्ट के दूध की औषधीय उपयोगिता वैज्ञानिक रूप से सिद्ध है। बीकानेर ग्रामीण क्षेत्र में ऊंटपालन की अच्छी संभावनाएं भी हैं। इस विषय पर लोगों को जागरूक व प्रेरित करने की आवश्यकता है। जिला कलक्टर ने कहा कि इस क्षेत्र में भेड़ और बकरी पालन की भी व्यापक संभावना है। यहां ऊन व मीठ के लिए काफी कच्चा माल उपलब्ध है। उन्होंने मीठ के लिए कच्चे माल की एक बड़ी मंडी तैयार करने की दिशा में काम करने के निर्देश दिए।



बीकानेर 23-04-2022

पृथ्वी दिवस • पर्यावरण संरक्षण का दिया संदेश, पौधरोपण किया, परिचरवां आयोजित पृथ्वी व पर्यावरण को प्रदूषण से मुक्त रखने का संकल्प



पृथ्वी दिवस पर सड़कनगर को पवनिक कक्षा के निदेशक डॉ. श्रीनिवास द्वारा आयोजित कार्यक्रम में भाग लेने वाले लोगों ने पौधों की रोपण किया। कार्यक्रम में निदेशक डॉ. श्रीनिवास ने पृथ्वी दिवस के अवसर पर पर्यावरण संरक्षण का संदेश दिया। उन्होंने कहा कि पृथ्वी को प्रदूषण से मुक्त रखने के लिए हमें जागरूक होना और पर्यावरण को संरक्षित करना चाहिए।



विश्व पृथ्वी दिवस पर 100 साल पुरानी बेजड़ी के पेड़ का प्रदत्त दिवस मनाया। विश्व पृथ्वी दिवस पर बीकानेर जिले में पर्यावरण संरक्षण के संदेश के तहत पौधों की रोपण किया गया। कार्यक्रम में निदेशक डॉ. श्रीनिवास ने पृथ्वी दिवस के अवसर पर पर्यावरण संरक्षण का संदेश दिया। उन्होंने कहा कि पृथ्वी को प्रदूषण से मुक्त रखने के लिए हमें जागरूक होना और पर्यावरण को संरक्षित करना चाहिए।

