



**National Conference on  
Advances in Genetics and Genomics for  
Sustainable Livestock Transformation  
and  
XVII Annual Convention of Indian Society of  
Animal Genetics & Breeding**

16-17 November, 2023

Venue: PG Nair Conference Hall, ICAR-NBAGR, Karnal

# PROGRAMME

**ICAR-NATIONAL BUREAU OF ANIMAL GENETIC RESOURCES**

G.T. Road By-Pass, Karnal-132 001 (Haryana) India

National Conference  
on  
Advances in Genetics and Genomics for  
Sustainable Livestock Transformation  
&  
XVII Annual Convention of  
Indian Society of Animal Genetics & Breeding  
16-17 November, 2023; ICAR-NBAGR Karnal

**PROGRAM**

**16<sup>th</sup> November, 2023 (Day 1, Thursday)**  
**Inaugural Session**

(10:00 AM - 11:50 AM; PG Nair Conference Hall)

Chief Guest : Dr J K Jena Deputy Director General (AS), ICAR, New Delhi  
Special Guest : Padmashree Dr Moti Lal Madan, Former Deputy Director General (AS),  
ICAR & Former Vice-Chancellor DUVASU, Mathura & PDKV, Akola  
Guest of Honor : Dr S L Goswami, Former Director, ICAR-NAARM & Former Vice-  
Chancellor, Banda University of Agriculture and Technology, Banda

10.00 A.M. Arrival of Dignitaries & Welcome Note  
10.05 A.M. ICAR Song  
Lamp Lighting and Saraswati Vandana  
10.10 A.M. Welcome Address- **Dr B P Mishra**, Director NBAGR &  
President ISAGB  
10.20 A.M. Introduction of XVII Annual Convention and ISAGB Activities- **Dr**  
**V K Saxena**, Secretary, ISAGB  
10.30 A.M. Introduction to National Conference ISAGB-2023- **Dr S P**  
**Dixit**, Organizing Secretary  
10.40 A.M. ISAGB Awards and Felicitations- **Dr P K Rout**, Joint Secretary,  
ISAGB  
11.00 A.M. Address by Guest of Honour- **Dr S L Goswami**, Former Director,  
ICAR-NAARM & Former Vice-Chancellor, Banda University of  
Agriculture and Technology, Banda  
11.10 A.M. Address by Special Guest- Padmashree **Dr Moti Lal Madan**,  
Former Deputy Director General (AS), ICAR & Former Vice-  
Chancellor DUVASU, Mathura & PDKV, Akola  
11.20 A.M. Release of Compendium  
11.25 A.M. Felicitations of Guests  
11.30 A.M. Keynote Address by Chief Guest- **Dr J K Jena**, Deputy Director  
General (AS), ICAR, New Delhi  
11.45 A.M. Vote of thanks  
11.50 A.M. National Anthem

(HIGH TEA 11:55 AM- 12:20 PM)



## Technical Session II: ISAGB Young Scientist Awards

(12:20 - 1:30 PM; PG Nair Conference Hall)

Co-chairs : Dr B Prakash, Former Director, ICAR-CIRC, Meerut  
: Dr A K Tyagi, ADG (AN&P), ICAR, New Delhi  
: Dr T K Datta, Director, ICAR-CIRB, Hisar  
: Dr P K Rout, Principal Scientist (Office of DG), ICAR, New Delhi

Rapporteur : Dr Sushil Kumar, Principal Scientist and Head (AG&B) ICAR-CIRC, Meerut  
: Dr Ajoy Mandal, Principal Scientist, ICAR-NDRI (ERS), Kalyani

### Young Scientist Award Presentations (8 + 2 min)

S.N.	Title	Author(s)
1	Discovering the Genetic Uniqueness of Non- Descript Cattle Populations of Maharashtra	<u>Kanaka K K</u> , S P Dixit*, Nidhi Sukhija, Rangasai Chandra Goli, Indrajit Ganguly, Sanjeev Singh
2	Transcriptomic Profiling of Heart Tissues in Changthangi and Muzzafarnagri Sheep: Insights into Adaptive Gene Expression Patterns	<u>Ritika Gera</u> , Pooja Chhabra, Reena Arora, Rajesh Kumar, Mandeep Kaur , Ram Parsad, Mohsin Ayoub Mir, Manoj Kumar Singh, Sonika Ahlawat, Rekha Sharma
3	Deep Learning for Discerning Natural Selection in the Bovine Genome	<u>Harshit Kumar*</u> , Manjit Panigrahi , Bharat Bhushan , Triveni Dutt
4.	Genomic Revelations of Zebu and Taurine Introgression in Karan Fries crossbred Cattle	<u>Shivam Bhardwaj</u> , Anupama Mukherjee And Sabyasachi Mukherjee
5	Application of Statistical and Machine Learning for Classification of Cattle Breeds and Lineages using Minimum Informative Markers	<u>Sheikh Firdous Ahmad*</u> , Amit Kumar, Gyanendra Kumar Gaur And Triveni Dutt
6	Analyzing the Complete Genome of Indian Native Goats alongside Global Breeds Uncovers rich within Breed Genetic Diversity And Distinct Population Structure <b>(Online)</b>	<u>Nandhini Balasubramaniam</u> , Satpal Dixit*, Sanjeev Singh, Subrata, Koloi, , Avnish Kumar Bhatia, Indrajit Ganguly*
7	Effects of Allelic Variants of Stat Genes on Milk Fat and Protein Yield In Holstein Friesian Crossbred Cattle	<u>Anika Sharma</u> , Simarjeet Kaur* , J.S Arora And Neeraj Kashya

LUNCH (1:30 - 2:30 PM, FOOD COURT)

## Technical Session I: Genetics and Genomics in Livestock and Poultry

(2:30 - 6:00 PM; PG Nair Conference Hall)

Chairperson : Dr S L Goswami, Former Director, ICAR-NAARM & Former Vice-Chancellor, Banda University of Agriculture and Technology, Banda

Co-chairs : Dr G K Gaur, ADG (AP&B), ICAR, New Delhi  
: Dr Vineet Bhasin, Former Principal Scientist, ICAR, New Delhi

Rapporteurs : Dr Rekha Sharma, Principal Scientist, ICAR-NBAGR, Karnal  
: Dr Jayakumar, Senior Scientist, ICAR-DPR, Hyderabad

Lead Presentations (17 + 3 min)

- 1. Understanding the National Animal Genetic Resources and their Sustainable Utilization: Challenges and opportunities**  
Dr. B P Mishra, Director ICAR-NBAGR, Karnal, Haryana, India (IST 2.30 PM)
- 2. Genomic Selection in India: Current Status, Opportunities and Challenges**  
Dr. Nilesh Nayee, National Dairy Development Board, Anand, Gujarat, India (IST 2.50 PM)
- 3. Advancement in Gene Editing Technology and its Applications in Livestock Sector**  
Dr T K Bhattacharya, Director, ICAR- National Research Centre on Equines, Hisar (IST 3.10 PM)



Oral presentations: (5+2 min)-- 3.30-4.15 PM

S.N.	Title	Author(s)
1.	Unraveling Genetic Diversity and Population Structure in Sheep Breeds: Insights from Admixture Analysis	<u>Priyanka Swami</u> and Jaswant Singh
2.	Genome-Wide Runs of Homozygosity Signatures In diverse Indian Goat Breeds ( <b>Online</b> )	<u>Dibyasha Kar</u> , Indrajit Ganguly, Sanjeev Singh, Avnish Kumar Bhatia and S. P. Dixit
3.	Comparative Analysis of Selection Signatures in Transboundary Sahiwal Cattle	<u>Lalmuansangi</u> , Jigyasha, Shivam Bhardwaj, Sabyasachi Mukherjee, Anupama Mukherjee
4.	Molecular Characterization, Polymorphism and Association Of TLR4 Gene in Indian Dromedary Camels ( <b>Online</b> )	<u>Basanti Jyotsana</u> , Seema Bishnoi, Ved Prakash and Rakesh Ranjan
5.	Polymorphism of dwarf (ACAN) gene in small South Indian cattle breeds ( <b>Online</b> )	Bharathi G*, Thiagarajan R, KarthickeyanSmk, Tirumurugaan K and Sesh Psl
6.	Unraveling X Chromosome Wide Runs of Homozygosity in Indian Zebu Cattle	<u>Rangasai Chandra Goli</u> , Kusum Mehla, Indrajit Ganguly, Sanjeev Singh, and S. P. Dixit
7.	Population Genetic Characterization of Wild Anabas Testudineus Stocks using mtDNA D-Loop Marker ( <b>Online</b> )	<u>Lakshman Sahoo</u> , Shibani Jena, Subhalaxmi Panda, Priyanka Nandanpawar, P. Das, Rajesh Kumar, Jackson Debbarma and J. K. Sundaray

TEA BREAK (4:15 - 4:30 PM)

Lead Presentations (continues)

**4. Genetic Improvement of *Bos indicus* in Brazil (Online)**

Dr. Artur J M Rosa, Brazilian Agricultural Research Corporation (EMBRAPA) Embrapa Cerrados, Brasília, Brazil (IST 04.30 PM, BRT, 8.00 AM)

**5. Genetic Improvement of Small Ruminants in the Developing Countries (Online)**

Dr. Curtis P Van Tassell, Animal Genomics and Improvement Laboratory, USDA-ARS, Maryland, USA (IST 5.00 PM, Maryland, EDT: 6.30AM)

**6. Implications of Pangenomic Research in Livestock Genetic Improvement (Online)**

Dr. Benjamin D Rosen, Animal Genomics and Improvement Laboratory, USDA-ARS, Maryland, USA (IST 5.30 PM, Maryland, EDT: 7.00AM)

**Annual Convention of the Society**

(6:00- 6:45 PM; PG Nair Conference Hall)

**Cultural Evening (Umang) (7:00 - 9:00 PM; Food Court)**

(DINNER 9:00 PM ONWARD; FOOD COURT)



**17<sup>th</sup> November, 2023 (Day 2, Friday)**

**Technical Session III: Animal Breeding Strategies in the Era of Genomics and Phenomics**

(9:30 AM - 12:30 PM; PG Nair Conference Hall)

Chairperson : Dr Arjava Sharma, Former Director, ICAR-NBAGR, Karnal  
Co-Chairs : Dr R N Chatterjee, Director, ICAR-DPR, Hyderabad  
: Dr A R Rao, Assistant Director General (PIM), ICAR, New Delhi  
Rapporteurs : Dr Santanu Banik, Head, AG&B, ICAR-NDRI (ERS), Kalyani  
: Dr Reena Arora, Principal Scientist, ICAR-NBAGR, Karnal

Lead Presentations (17 + 3 min)

- 1. Emerging Role of Animal Breeding in Addressing Climate Change, Environmental Mitigation and Adaptation for Sustainable Livestock Production (Online)**  
Professor Ben Hayes, Centre Director, Animal Science, Queensland Alliance for Agriculture and Food Innovation, Australia (Queensland time 02.00 PM, IST 9.30 AM)
- 2. Statistical and Computational Aspect of Genomic Selection for Trait Improvement**  
Dr. A R Rao, Assistant Director General (PIM), ICAR, New Delhi (IST 9.50 AM)
- 3. Phenomics and its Potential Impact on Livestock Development: Innovative Applications of Emerging Digital Technology**  
Dr Chinyere Ekine-Dsivenu, International Livestock Research Institute (ILRI) (IST 10.10 AM Nairobi, EAT: 7.40 AM).
- 4. A SWOT Analysis of Animal Breeding Practices in India and Way Forward**  
Dr G K Gaur, ADG (AP&B), ICAR, New Delhi (IST 10.30 AM)

(TEA BREAK 10:50 - 11:05 AM)

Oral presentations: (5+2 min) 11.05-12.05 AM

S.N.	Title	Author(s)
1.	Delivering improved dairy genetics through New Technology Intervention of sorted semen technology in Raebareli District Uttar Pradesh	Tiwari Vikas*, Bansal Santosh, Potdar Vinod, Joshi Sachin and JadhavRaviraj
2.	Harnessing Genomic Data to Optimize Buffalo Production Trait Utilising Selection Signatures (Online)	Divya Rajawat, Manjit Panigrahi*, Sonali Sonejita Nayak, Karan Jain, Anurodh Sharma, Bharat Bhushan, Triveni Dutt
3.	Multivariate Principal Component Analysis Of Morphometric Traits in Native Sheep Breeds of Indian Himalayan Region.	Nusrat Nabi, Nazir Ahmad Ganai, Syed Shanaz, Tavsief A, Ruksana M., Mohsin M. And Sheikh Firdous
4.	Genetic Evaluation of Body Weights and Biometric Traits using Multi-Trait Animal Model in Indigenous Aseel and Kadaknath Chicken	Pallavi Rathi, Devender Singh Dalal, and Chandrashekar Santosh Patil
5.	Comparison of External and Internal Egg Quality Parameters in Different Strains/Breeds of Chickens	Poonam Ratwan, Manoj Kumar, S.P. Dahiya, Z. S. Malik, Nancy Sheoran and Jyotsana
6.	Bayesian Multi-Trait and Principal Component Analysis Provided Precise Estimates of Genetic Parameters for Behavioural, Functional and Linear Type Traits in Sahiwal Cattle	Divyanshu Pandey, Sabyasachi Mukherjee, Anupama Mukherjee, Gopal Gowane,M.L. Kamboj , S.S. Lathwal
7.	Exploring Genetic Determinants of Prolificacy in Sheep through a Meta-Analysis of GWAS	Ymberzal Koul* , Gaurav Patel, Anmol, UtsavSurati, Nandhini PB and Saket K.Niranjan
8.	Farm Animal Genetic Resources In Agro Ecosystem of North East India	Govindasamy Kadirvel



### Technical Session IV: Functional Genomics and Epigenetics in Livestock and Poultry

(12:10 PM – 1:30 PM; PG Nair Conference Hall)

- Chairperson : Dr T J Rasool, Former Director, Director, Camel Biotechnology Center, Al-Ain, UAE & President, ISAGB (**Online**)
- Co-Chairs : Dr T K Datta, Director, ICAR-CIRB, Hisar  
: Dr A K Mohanty, Director, ICAR-CIRC, Meerut
- Rapporteurs : Dr Anupama Mukherjee, Principal Scientist, ICAR-NDRI, Karnal  
: Dr Firdous Ahmad, Scientist, ICAR-IVRI, Izatnagar

Lead Presentations (17 + 3 min)

- Genomic dissection of fertilising spermatozoa: Time for a new equation to assess male fertility**  
T K Datta, Director, ICAR-CIRB, Hisar (12.10 - 12.30 PM)
- Multi-omic approaches for characterizing adaptation and milk attributes in bovines from high altitudes**  
Manishi Mukesh, Principal Scientist, ICAR-NBAGR, Karnal (12.30 PM- 12.50 PM)
- Genomic application to understand evolution and domestication of animal genetic resources**  
Sanjeev Singh, Principal Scientist, ICAR-NBAGR, Karnal (12.50 PM- 1.10 PM)
- Deciphering the role of epitranscriptomics in livestock and poultry**  
Basavaraj Sajjanar, Scientist, ICAR-Indian Veterinary Research Institute (1.10 PM-1.30 PM)

LUNCH (1:30 - 2:30 PM, FOOD COURT)

Oral presentations: (5+2 min) 2.30-03.30 PM

S.N.	Title	Author(s)
1	Transcriptome analysis of bovine spermatozoa reveals sex selection signatures	Sofi Imran Ul Umar, Soumen Naskar, Pranab Jyoti Das, Mridula Sharma, Arunava Pattanayak, Sushil Prasad, Dhanu Kumar Murasing
2	Evidence of adaptive selection in mitogenome of indian cattle breeds ( <b>Online</b> )	Sarath Kumar T, Sanjeev Singh, S P Dixit, Indrajit Ganguly, Nandhini P B and Aishwarya Dash
3	Diverse roles of circular RNAs in buffalo cotyledonary tissues: insights from differential expression analysis across developmental stages	Ashish Baladhare, Amit Kumar, Gyanendra Singh, Pushpendra Kumar, Vikrant Singh Chouhan, Senthamilan S.P., Mihir Sarkar
4	Whole mitogenome based genetic diversity analysis reveals distinct maternal origins for the dromedary and bactrian camels	Sonika Ahlawat, Upasna Sharma, Reena Arora, Rekha Sharma, and Pooja Chhabra
4	Comprehending the non-cpg islands' distribution and methylation dynamics from buffalo sperm methylome data	Ankita Gurao, Gautam Kumar, Rashi Vasisth, Karpenahalli Ranganatha Sriranga, Meenakshi Chitkara, Pawan Singh, Manishi Mukesh And R.S. Kataria
5	Comprehensive transcriptomic analysis to decipher novel candidate genes regulating heat stress adaptability in pigs ( <b>Online</b> )	Jaya*, Satish Kumar, N. H. Mohan And Vivek Kumar Gupta
6	Microarray Analysis of Genes Expressed in the Skin of Vechur and Bos Taurus Crossbred Cattle Following <i>rhhipicephalus annulatus</i> Infestation	Elizabeth Kurian, C. N. Dinesh, K. Raji, Reghu Ravindran, M. Shynu, T.S. Nisha, P.M. Rojan, K.A. Bindu And T.V. Aravindakshan
7	May our environment editing model, EEM say gene & genomics are controlled digitally in fisheries, livestock, mankinds' and every other spp ( <b>online</b> )	Debabrata Das, Aranya Das, Prakriti Das, Santa Ana Das & Rajendra Nath Das



### Technical Session V: Round table on Integration of Genomics in Practical Animal Breeding: Challenges and Opportunities

(3:30 - 5:00 PM; PG Nair Conference Hall)

- Co-Chairs : Dr R K Sethi, Former Director, ICAR-CIRB, Hisar  
: Dr B K Joshi, Former Director, ICAR-NBAGR, Karnal  
: Dr R S Gandhi, Former ADG (AP&B), ICAR, New Delhi
- Moderators : Dr. V K Saxena, Director Research BASU, Patna and Secretary, ISAGB  
: Dr. Ravi Kumar Gandham, Head Animal Biotechnology, ICAR-NBAGR, Karnal
- Rapporteurs : Dr A K Mishra, Principal Scientist, ICAR-NBAGR, Karnal  
: Dr Soumen Naskar, Principal Scientist, ICAR-IIAB, Ranchi

Panelists		
Dr. M.S. Tantia, Principal Scientist (Retd.), NBAGR	Dr. Archana Verma, Principal Scientist (Retd.), NDRI	Dr Surender Singh Dhaka Registrar LUVAS Hisar
Dr. DK Sadana, Principal Scientist (Retd.), NBAGR	Dr Anilkumar K, Professor, KVASU	Dr. Umesh Singh, Head (AG&B), CIRB
Dr. S.C. Mehta, Head, RS, EPC-NRCE	Dr. R. K. Pundir, Head AGR, NBAGR	Dr. Vikas Vohra, Head (AG&B), NDRI
Dr. Sushil Kumar, Head AG&B, CIRC	Dr. Santanu Banik, Head (ERS), NDRI	Dr Syed Shanaz, Head AG&B, SKUAST-K
Dr. Raj Kumar, Head AG&B, DPR	Dr. H K Narula, Principal Scientist, ICAR	Dr. Anand Jain, Principal Scientist (Retd.), NBAGR
Dr. N K Verma, Principal Scientist (Retd.), NBAGR	Dr. A K Gupta, Principal Scientist (Retd.), NDRI	Dr. Azmat Alam Khan, OSD SKUAST-K

(TEA BREAK 5:00 - 5:15 PM)

### Plenary & Valedictory Session

(5:15 - 6:15 PM; PG Nair Conference Hall)

- Chief Guest : Dr Dheer Singh, Director-cum-Vice Chancellor, ICAR-NDRI, Karnal
- Guest of Honour : Dr. B K Joshi, Former Director, ICAR-NBAGR, Karnal
- Guest of Honour : Dr. A K Tyagi, Assistant Director General (AN&P), ICAR, New Delhi

(TEA 6:20-6.50 PM)



## CONTACT POINTS

### Accommodation & Transport

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### Registration

Dr Dinesh Kumar Yadav, Principal Scientist, ICAR-NBAGR- Chairperson, Registration Committee (dkyadav66@gmail.com ;9416301307)

*For online registration enquiry* : Ms. Manisha-9525045886

### Session inquiry & Oral presentation

Dr Rekha Sharma, Chairperson, Technical Session Committee- 9255482422

### Poster presentation

Dr RAK Aggarwal, Chairperson, Poster Session Committee-9416067363

### Organizing Secretariat

Dr. S P Dixit, Organizing Secretary, ISAGB-2023

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