

## Dr. Kaiho Kaisa (M.V.Sc., Ph.D.)



### Scientist-B

Silkworm Section

Central Muga Eri Research & Training Institute

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### Educational Qualifications

- *B.V.Sc & A.H* in Veterinary Sciences (2012-2017).
- *M.V.Sc.* in Veterinary Science with specialization in Animal Genetics & Breeding (2017-2019).
- *Ph.D.* in Veterinary Science (Animal Genetics & Breeding) from ICAR-Indian Veterinary Research Institute, Bareilly, Uttar-Pradesh (2019-2023).

### Awards/Achievements/Fellowships

- Achieved Gold medal in C.V.Sc & A.H. Tripura for the *B.V.Sc & A.H.* program – 2017.
- Awarded ICAR-PG Scholarship 2017-19.
- Qualified National Eligibility Test (NET) for assistant professor conducted by Agricultural Scientists Recruitment Board in the subject of Animal Genetics & Breeding in 2021.
- Awarded Institutional fellowship at ICAR-Indian Veterinary Research Institute for *Ph.D* Programme 2019-2023.
- Post Metric Scholarships for minorities by Ministry of Minority Affairs, Government of India 2012-17.

### Research experiences

- My thesis work in *M.V.Sc.* program comprises, “Characterisation of Toll-like receptor-4 (*TLR-4*) gene in swamp buffalo (*Bubalus bubalis*) of Manipur” (2019).
- My thesis work in *Ph.D.* program comprises, “Transcriptomic analysis of Cattle PBMCs induced with *E. coli* antigen causing mastitis” (2023).

### Work experience

- Served as Assistant Professor (Animal Genetics & Breeding) at Apollo College of Veterinary Medicine, Jaipur, Rajasthan (March 2023 - November 2023).

## **Roles & Responsibilities held**

- As a Member in Students' Council of the C.V.Sc & A.H, Central Agricultural University, Aizawl during the tenure 2017-18 (M.V.Sc.).
- As the Students' Representative in the Departmental Board of Studies (DBOS) for the discipline of AGB, ICAR-IVRI during 2021-22 (Ph.D).

## **Some of the recent Publications**

### **Research articles**

- ❖ Kaisa, Kaiho & Bhushan, Bharat & Panigrahi, Manjit & Gaur, Gyanendra & Kumar, Ravi & Malla, Waseem & Sulabh, Sourabh & Dutt, Triveni. (2023). Transcriptome analysis of cattle PBMCs induced with *E. coli* antigen causing mastitis. *The Pharma Innovation*. 12. 350-354. 10.22271/tpi.2023.v12.i2e.18437.
- ❖ Satish Kumar, Bharat Bhushan, Amit Kumar, Manjit Panigrahi, Jaya Bharati, Soni Kumari, Kaisa Kaiho, *et al.* (2023). Elucidation of novel SNPs affecting immune response to classical swine fever vaccination in pigs using immunogenomics approach. *Veterinary Research Communications*. DOI: 10.1007/s11259-023-10262-3.
- ❖ Parasar P, Bhushan B, Panigrahi M, Kumar H, Kaisa K, Dutt T (2021). Characterization of BoLA class II DQA and DQB by PCR-RFLP, cloning, and sequencing reveals sequence diversity in crossbred cattle. *Anim Biotechnol*. 23:1-11. doi: 10.1080/10495398.2021.2006205. PMID: 34813716.
- ❖ Biswanath Patra, Manjit Panigrahi, Harshit Kumar, Kaiho Kaisa, Triveni Dutt & Bharat Bhushan (2021). Molecular and phylogenetic analysis of MHC class I exons 7–8 in a variety of cattle and buffalo breeds. *Anim Biotechnol*, DOI: 10.1080/10495398.2021.1999969.
- ❖ Harshit Kumar, Manjit Panigrahi, Divya Rajawat, Anuradha Panwar, Sonali Sonejita Nayak, Kaiho Kaisa, Bharat Bhushan, Triveni Dutt, (2021). Selection of breed-specific SNPs in three Indian sheep breeds using ovine 50 K array. *Small Ruminant Research*, (205)106545, ISSN 0921-4488, <https://doi.org/10.1016/j.smallrumres.2021.106545>.

### **Review and Popular articles**

- ❖ Kaisa, K., Kumar, H., Panigrahi, M., Dutt, T., & Bhushan, B. (2021). Importance of Bovine Mastitis Associated Gene Expression Analysis—A Review. *Journal of Animal Research*, 11(1), 1-9.
- ❖ Kaisa, K., Kumar, H., Panigrahi, M., Dutt, T., & Bhushan, B. (2020). RNA Sequencing: A Potent Transcription Profiling Tool. *International Journal of Current Microbiology and Applied Sciences* 9(10):891-905. <http://dx.doi.org/10.20546/ijcmas.2020.910.107>

- ❖ Manjit Panigrahi, Harshit Kumar, K.A. Saravanan, Divya Rajawat, Sonali Sonejita Nayak, Kanika Ghildiyal, Kaiho Kaisa, Subhashree Parida, Bharat Bhushan, Triveni Dutt (2022). Trajectory of livestock genomics in South Asia: A comprehensive review. *Gene*, (843), 146808, ISSN 0378-111. <https://doi.org/10.1016/j.gene.2022.146808>
- ❖ Kumar H, Panigrahi M, Panwar A, Rajawat D, Nayak SS, Saravanan KA, Kaisa K, Parida S, Bhushan B, Dutt T. Machine-Learning Prospects for Detecting Selection Signatures Using Population Genomics Data. *J Comput Biol*. 2022 Sep;29(9):943-960. doi: 10.1089/cmb.2021.0447. PMID: 35639362.
- ❖ Kaisa, K., Kumar, H., Saravanan, K.A., Rajawat, D., Bhushan, B., Kumar, P., & Panigrahi, M. (2020). Concepts of Genomic Selection in Poultry and its Applications. *International Journal of Livestock Research*, 0, 1. <https://doi.org/10.5455/ijlr.20200427022022>
- ❖ Talokar, A.J., Kumar, H., Mehrotra, A., Kaisa, K., Saravanan, K.A., Panigrahi, M., Dutt, T., & Bhushan, B. (2021). Recent Advances in Sire Evaluation Methods: A Review. *Indian Journal of Animal Research*. <https://doi.org/10.18805/ijar.b-4280>

### **Book Chapters/Practical Manuals**

- ❖ Bhushan, B., Kaisa, K., Kumar, H., Saravanan, K.A., Nayak, S.S., Rajawat, D., Panigrahi, M. (2022). Transcriptome analysis for bovine mastitis resistance. In book: Integrating phenomics and genomics for improving livestock production, health, and well-being. Chapter: 49. Publisher: ICAR-IVRI.
- ❖ Panigrahi, M., Saravanan, K.A., Harshit Kumar, Nayak, S.S., Rajawat, D., Kaisa, K., Bhushan, B. (2022). Recent advances in breed identification and selection signature using genomic information in India. In book: Integrating phenomics and genomics for improving livestock production, health, and well-being. Chapter: 1, Publisher: ICAR-IVRI.
- ❖ Practical manual on Animal Genetics & Breeding for the 2<sup>nd</sup> professional year *B.V.Sc & A.H.* degree programme based on the minimum standards of Veterinary Education Regulations, 2016 of Veterinary Council of India (2023).
- ❖ Practical manual on Principles of Animal & Population Genetics for the 2<sup>nd</sup> professional year *B.V.Sc & A.H.* degree programme based on the minimum standards of Veterinary Education Regulations, 2016 of Veterinary Council of India (2023).

### **Trainings/Conferences attended**

- ❖ Participated in the workshop on “Genome editing in farm animals for improved productivity and health” organized by Animal Biotechnology Division ICAR-NDRI, Karnal on March 03, 2023.
- ❖ Participated in a short-term training programme on “Practical Approaches to Bioinformatics and Omics Technologies” organized by Bioinformatics Centre under the aegis of Centre for Advanced Agricultural Sciences and Technology-Advanced Centre for Livestock Health, ICAR-IVRI (UP) during 10-14 October 2022

- ❖ Participated in International e-Training on “Applications of Bioinformatics in Genome Analysis” organized by the Department of Animal Genetics and Breeding, College of Veterinary Science & A.H., N.D.V.S.U., Jabalpur, M.P., India from 25-29 April 2022
- ❖ Participated in Virtual International Conference on “Promising Genetic and Genomic Technologies – Frontier in the selection and animal improvement” organized by Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) and Kerala Veterinary and Animal Sciences University (KVASU) from January 27 – 28, 2021
- ❖ Participated in the three days Programme on “Basic and Applied Bioinformatics in Animal Sciences” organized by Centre for Advanced Agricultural Science & Technology-Advanced centre for Livestock Health, ICAR-IVRI, Izatnagar (UP) from 9th to 11th February, 2021.
- ❖ Participated in the XVIII Annual Convention and National Webinar: Harnessing Potential of Indigenous Animal Genetic Resources for Enhancement of Productivity and Profitability organized by the Society for Conservation of Domestic Animal Biodiversity (SOCDAB), ICAR-NBAGR from February 11-12, 2021
- ❖ Participated in the sensitization workshop on “Agricultural Knowledge Management in the Networked Digital Environment” organized by the National Knowledge Management Centre for Agricultural Education and Research (NKMC4AER) under Innovation Grants of NAHEP at ICAR-IVRI, Izzatnagar on 19<sup>th</sup> October 2019
- ❖ Participated in a short-term training course on “Molecular Detection and Characterization of Animal Pathogens” held during September 10-19, 2018, at Institutional Biotech Hub, College of Veterinary Sciences & Animal Husbandry, CAU, Aizawl, Mizoram
- ❖ Participated in a three-days Capacity Building Programme on “Sustainable Livestock Production in North-East Region and Extension Techniques” from 21<sup>st</sup>–23<sup>rd</sup> November 2017 organized by the College of Veterinary Sciences & Animal Husbandry, CAU, Aizawl, Mizoram

### **Affiliations**

- Central Silk Board, Ministry of Textiles – Govt. of India
- ICAR-Indian Veterinary Research Institute, Bareilly, Uttar-Pradesh, India.
- Central Agricultural University, Imphal, Manipur, India.

**(Dr. Kaiho Kaisa)**