Indian Journal of Animal Research
Editorial Board

Chief Editor: Yashpal Singh Malik, Deputy Director General, ICAR Headquarters, New Delhi.

Associate Chief Editor: L.D. Singla, Professor and Head, Abhilashi University, Chachyot, H.P., India.

Editors

C. Valli, Former Dean, Madras Veterinary College Campus, TANUVAS, Chennai, India.

N.B. Shridhar, Professor and Head, Karnataka Veterinary, Animal and Fisheries Sciences University, Karnataka, India.

S. Maya, Professor, Kerala Veterinary and Animal Sciences University, Mannuthy, Thrissur, Kerala, India.

Z.A. Pampori, Professor, SKUAST-K, Shuhama, Srinagar, Kashmir, India.

Members

Zoology/Parasitology

Mustapha Debboun, Director, Mosquito & Vector Control, Harris County Public Health, UNITED STATES.

Animal Genetics, Breeding and Reproduction

Gnana Prakash Manthani, Vice Chancellor, P.V. Narsimha Rao Telangana Veterinary University, Rajendranagar, Hyderabad, India.

Timur Gülhan, Former Dean, Ondokuz Mayis University, Turkey.

P. Devendran, Dean, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India.

Wei Sun, Director, Yangzhou University, Yangzhou, Jiangsu Province, China.

R.N. Chatterjee, Director, ICAR-Directorate of Poultry Research, Hyderabad, India.

Arun K. Tomar, Director, ICAR-Central Sheep & Wool Research Institute, Avikanagar, India.

Archana Verma, Principal Scientist, ICAR National Dairy Research Institute, Karnal, Haryana, India.

Anuradha Bhardwaj, Principal Scientist, ICAR- National Research Center on Equines, Hisar, India.

A.K. Mishra, Principal Scientist, ICAR-NBAGR, Karnal, Haryana, India.

A.K. Ghosh, Professor, G.B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, India.

Gamaleldin Suliman, Professor, King Saud University, Riyadh, Saudi Arabia.

Özdal Gökdal, Professor, Aydin Adnan Menderes University, Turkey.

B.S. Prakash, Others, National Rainfed Area Authority (NRAA), Ministry of Agriculture & Farmers Welfare, Delhi.

Animal Nutrition

Narayan Dutta, Principal Scientist, ICAR-Indian Veterinary Research Institute, Izatnagar, U.P., India.

Veterinary Medicine, Livestock and Fisheries Management

Abhijit Mitra, Vice Chancellor, U.P. Pt. Deen Dayal Upadhyaya Veterinary Science University, Mathura, Uttar Pradesh, India.

Baljinder Kumar Bansal, Dean, Retd., Guru Angad Dev Vet. and Animal Sci. Uni., Ludhiana, India.

Pankaj Kumar, Principal Scientist, Research Complex for Eastern Region, Patna, Bihar, India.

R. Richard Churchil, Professor and Head, Tamil Nadu Veterinary and Animal Sciences University, Chennai, India.

ICHIJO Toshihiro, Professor, Iwate University, Japan.

Robert Barigye, Associate Professor, United Arab Emirates University, Abu Dhabi - United Arab Emirates.

Ihab Habib, Associate Professor, United Arab Emirates University, Abu Dhabi - United Arab Emirates.

Seval Bilge Dagalp, Professor, Ankara University, Ankara, Turkey.

Kudret Yenilmez, Assistant Professor, Tekirdag Namik Kemal University, Turkey.

Veterinary Surgery and Radiology

Deepak B. Patil, Dean, Kamdhenu University, Gandhinagar, India.

Ashwani Kumar, Professor, Veterinary Surgery & Radiology, Guru Angad Dev Veterinary & Animal Sciences University, Ludhiana, Punjab, India.

Animal Biochemistry and Biotechnology

Gorakh Mal, Principal Scientist, Indian Veterinary Research Institute, Regional Station, Palampur, H.P., India.

Mukesh Kumar Gupta, Director, ICMR- National Animal Resource Facility for Biomedical Research, Turkapally, Telangana, India.

Anatomy and Histology

Om Prakash Choudhary, Associate Professor, College of Veterinary Science, Rampura Phul, Punjab.

Ahmad Al Aiyan, Associate Professor, United Arab Emirates University, Abu Dhabi - United Arab Emirates.

YAMAMOTO Yoshio, Professor, Iwate University, Japan.

Varinder Uppal, Professor, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, Punjab, India.

Fisheries Science

J.K. Jena, Deputy Director General, Indian Council of Agricultural Research, Pusa New Delhi, India.

B.K. Das, Director, ICAR-Central Inland Fisheries Research Institute, Barrackpore, Kolkata, India.

Executive Members

Avdhesh Kumar, Dean, G.B. Pant University of Agriculture and Technology, India.

Shiv Kumar Sharma, Dean, Department of Veterinary Medicine, College of Veterinary & Animal Science, Navania, Udaipur, Bikaner.

Vikas Vohra, Principal Scientist and HOD, ICAR National Dairy Research Institute, Karnal, India.

Champak Bhakat, Principal Scientist, ICAR-National Dairy Research Institute, West Bengal, India.

M.K. Singh, Assistant Professor, Pandit Deen Dayal Upadhyaya Veterinary Science University, Mathura, Uttar Pradesh, India.

Jafrin Ara Ahmed, Professor, Sher-e-Kashmir University of Agricultural Sciences & Technology of Jammu, India.

S. Bharathi, Professor, Sri Venkateswara Veterinary University, Andhra Pradesh, India.

Akin KIRBAS, Professor, Department of Internal Medicine, Faculty of Veterinary Medicine, Atatürk University Erzurum.

Ni Nyoman Suryani, Professor, Animal Husbandry Faculty, Udayana University of Bali, Indonesia.

Nawab Nashiruddullah, Professor, Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, India.

Agricultural Research Communication Centre

PATRON MEMBERS

Chief Patron

Dr. Rajendra Singh Paroda, Chairman, Trust for Advancement of Agricultural Sciences (TAAS)
Avenue II, Indian Agricultural Research Institute (IARI)

Indian Journal of Agricultural Research

Dr. Gurudev Khush, Member, US National Academy of Sciences
Adjunct Professor Emeritus, University of California, Davis
Former Head of Plant Breeding, Genetics and Biotechnology, IRRI

Indian Journal of Animal Research

Dr. Motilal Madan, Chairman, Livestock Sub-group, Haryana Farmer's Commission
Chairman, National Biotech Task Force in Animal Science, DBT, GOI
President, Society of Animal Physiologists of India
General Secretary, National Academy of Agricultural Sciences (NAAS)
Former Vice Chancellor, DUVASU, Mathura and PDKV, Akola
Former Deputy Director General (Animal Sciences), ICAR

Legume Research

Prof. Kadambot Siddique, Hackett Professor of Agriculture Chair and Director, The UWA Institute of Agriculture
UN FAO Special Ambassador for the International Year of Pulses 2016

Agricultural Science Digest

Dr A.K. Mohanty, Director, ICAR-Agricultural Technology Application Research Institute (ATARI) "(DARE, Ministry of Agriculture & Farmers' Welfare, Govt. of India) Zone VII, Barapani, Umiam, Ri-Bhoi, Meghalaya, India.

Asian Journal of Dairy and Food Research

Dr. K.M. Bujarbaruah, Former Vice Chancellor, Assam Agricultural University, Jorhat

Agricultural Reviews

Dr. R.V. Singh, Principal Scientist (Agricultural Extension)

STEERING MEMBERS

Dr. Gurbachan Singh
Founder, Gurbachan Singh Foundation for Research, Education and Development, India
Former Chairman, ASRB, Govt. of India & Agriculture Commissioner, Govt. of India,

Prof. Kadambot H.M. Siddique
Hackett Professor of Agriculture Chair and Director, The UWA Institute of Agriculture, Australia

Dr. Yashpal Singh Malik
Deputy Director General (Agricultural Education), ICAR Headquarters, New Delhi.

Bhaskar Rao

Consultant Agriculture, GCC

Dr. J.S. Sandhu

Professor Chair, Guru Gobind Singh Chair, Patanjali University, UttaraKhand, EX. VC SKNAU, Jobner, DDG (CS), ICAR and Agriculture Commissioner

Dr. L.D. Singla

Former Professor and Head, Veterinary Parasitology & Director, Human Resource Management Centre, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, Punjab, India

Prof. Chittaranjan Kole

President, International Climate Resilient Crop Genomics Consortium

President, International Phytomedimics and Nutriomics Consortium

President, Genome India International

Managing Editor, Gaurav Gupta (ARCC Journals, Karnal)

Assistant Managing Editor, Tanu Ahuja (ARCC Journals, Karnal)

Agricultural Research Communication Centre

294, Narsi Village Part 2, Sector 33, Karnal - 132 001, India

E-mail : contact@arccjournals.com ; editor@arccjournals.com

www.arccjournals.com

INDIAN JOURNAL OF ANIMAL RESEARCH

Print ISSN : 0367-6722

Online ISSN : 0976-0555

Print frequency : Monthly

National Academy of Agricultural Sciences (NAAS) Rating : 6.50

Impact Factor : 0.9 (2026)

Scientific Journal Ranking (SJR) : 0.271

ARCC Journals are covered in:-

- **BIOSIS Preview**
- **Web of Science**
- **Biological Abstracts**
- **Elsevier (Scopus and Embase)**
- **AGRICOLA**
- **Google Scholar**
- **CrossRef**
- **CAB Abstracting Journals**
- **Chemical Abstracts**
- **Indian Science Abstracts**
- **EBSCO Indexing Services**

INDIAN JOURNAL OF ANIMAL RESEARCH

Volume 60 Issue 11, November 2026 **NAAS Rating 6.50**

CONTENT **Page No.**

REVIEW

Impact of Climate Change on Animal Health and Mitigation Strategies: A Review
S.K. Sharma, Garima Rathore, Monika Joshi 1927

GENETICS AND BREEDING

Effect of Embryonic Development Speed and Temperature-Humidity Index on the Pregnancy Rate of Dairy Cattle Embryos Produced *in vitro*
Mayra Ester Enriquez-Martinez, Martín Alfredo Legarreta-González, Rafael Rodríguez-Martínez, Ángeles De Santiago-Miramontes, Gerardo Arellano-Rodriguez, Oscar Ángel-García, Guadalupe Calderón-Leyva, Dalia Ivette Carrillo-Moreno, Cayetano Navarrete-Molina, Francisco Gerardo Véliz-Deras 1933

ANIMAL PHYSIOLOGY

Effect of Birth Season, Sex and Birth Weight on Total Serum Protein Levels in Holstein-Friesian Calves in Northern Mexico
Edgar Díaz-Rojas, Francisco Gerardo Véliz-Deras, Guadalupe Flores-Salas, Cayetano Navarrete-Molina, Silvestre Moreno-Avalos, Dalia Ivette Carrillo-Moreno, Viridiana Contreras-Villarreal, Fernando Arellano-Rodriguez, Edir Torres-Rodriguez, Jessica María Flores-Salas 1939

BIOCHEMISTRY AND BIOTECHNOLOGY

Effects of Biosynthesized Compounds on Restoring Proteins and Carbohydrates in the Tissues of the Spleen of *Plasmodium chabaudi* Infected Murine
Saleh Al-Quraishy, Saleh Maodaa, Mutee Murshed 1947

Studies on the Efficacy of Phage in Controlling *Staphylococcus aureus* Biofilm Phenotype Associated with Mastitis
Jagnoor Sandhu, Mudit Chandra, Gurpreet Kaur, Deepti Narang, A.K. Arora 1955

ANATOMY AND HISTOLOGY

Bergmann's Rule Examination based on the Morphology of the Long-tailed Dwarf Hamster (*Cricetulus longicaudatus*)
Yao Xinhua, Chang Jiahao, Chen Yutong, Huang Miao, Yang Xin'gen, Zhao Youyou, Ren Yue 1962

Scanning Electron Microscopic Studies on the Development of Epididymis and Vas Deferens in Non-descript Goat (*Capra hircus*) during Postnatal Period
N. Singh, S. Sathapathy, R. Patra, S.S. Biswal, S.S. Behera, S.R. Mishra, P.K.K. Mishra, S.K. Joshi, R. Sahu, P.S. Swain 1972

Gross Morphometrical Parameters of the Upper Respiratory Tract (Nostril and Nasal Cavity) in Native Uttara Fowl (*Gallus domesticus*) During Post-natal Development
Renu Yadav, Ishwar Singh, Meena Mrigesh, S.P. Singh, Namita Shukla, Tamanna Agrawal, Virendra Singh 1980

Scanning Electron Microscopic Studies on the Auricular and Atrio-ventricular Valvular Architecture of Pre-natal Non-descript Sheep
S.K. Sahu, U.K. Mishra, S. Sathapathy 1988

HEALTH

Patho-epidemiological and Immunohistochemical Study of Squamous Cell Carcinoma in Cattle and Buffaloes
Riddhi V. Trambadiya, Jignesh M. Patel, Samir H. Raval, Rohit S. Parmar, Jignesh B. Patel 1994

Anticoccidial and Cytotoxic Activities of *Moltkiopsis ciliata* Leaf Extract: *In vitro* Evaluation against *Eimeria tenella* Oocysts and MCF-7 Cells
Saleh Maodaa, Ayman A. Ghfar, Maqsood A. Siddiqu, Mutee Murshed, Saleh Al-Quraish 2010

Antimycobacterial Activity of Phytochemical Extracts from Herbs against the Non-tuberculous *Mycobacterium fortuitum* Infecting Fish
S. Gangatharan, A. Uma, K.G. Tirumurugaan, S.A. Shanmugam, A. Kathirvel Pandian 2019

Effects of Autologous and Homologous Platelet Rich Plasma on Full Thickness Autologous Skin Graft in Dogs
Uzma Farid Durrani, Asim Khalid Mahmood, Muhammad Imran, Khizer Ahmed Khan, Amber Fatima, Hussain Ahmad Saeed, Abdul Karim Khalid 2027

Intra-articular Administration of ELHLD Peptide for the Recovery of Articular Function after Medial Patellar Luxation Corrective Surgery in Dogs
Jeonghyun Seo, Shin-Ho Lee, Jongtae Cheong 2034

Past and Future Trends in the Intestinal Nematode Infections, 1990-2046: A Forecasting Study Based on the Global Burden of Disease
Zhang-zhou Shen, Hou-Qiang Luo, Fen Wang, Qin-qin Feng 2041

Incidence of Various Types of Bleeding Disorders Associated with Canine Vector Borne Diseases in Chennai, Tamil Nadu, India
P. Pothiappan, B. Nagarajan, P. Selvaraj, S. Kavitha 2048

Epidemiological Survey on Animal Rabies in the Province of Batna, North Eastern Algeria
Sabrina Rabehi 2055

Evaluation of Terminalia arjuna in Comparison to Taurine against Experimental Nephrotoxicity due to Cisplatin in Rats
K. Sneha, A. Gopala Reddy, M. Usha Rani, B. Ramya, P. Shiva Kumar, B. Anil Kumar 2061

The Occurrence and Molecular Identification of *Buxtonella sulcata* Linked to Diarrhoea in Cattle from the Western Region of Uttar Pradesh, India
Prashant Tiwari, Tarun Kumar Sarkar, P.S. Maurya, Arbind Singh, Ajit Kumar Singh, Amit Kumar Vermar, Vipul Thakur, Rajbir Singh 2067

Serum IL-6 and C-Reactive Protein Concentration in Uterine Inflammatory Diseases Affected Crossbred Cows
S.S. Mahour, Madhu Shivhare, Ranjit Aich, Nitin Kumar Bajaj, Arun Mourya, G.P. Jatav, Pushkar Sharma, Shweta Rajoriya 2073

ANIMAL NUTRITION

Comparative Metagenomic Profiling of Gut Microbiome Remodeling Induced by Dietary *Chlorella* and Porphyra in Goldfish (*Carassius auratus*)
Foram Dineshbhai Vala, Nilesh H. Joshi, Vishal K. Solanki 2077

Effects of Oregano and Clove Essential Oils on *in vitro* Ruminal Fermentation and Methane Production from Alfalfa Hay and Corn Stover
Karla Torres Fraga, Esperanza Herrera Torres, Manuel Murillo Ortiz, Mónica Yazmín Flores Villegas, Esther Araiza Rosales, David Enrique Zazueta Álvarez 2089

PRODUCT TECHNOLOGY

Quantitative and Qualitative Analysis of Hair-fibre Attributes in Four Indian Dromedary Camel (*Camelus dromedarius*) Breeds
Nistha Yadav, Urmila Pannu, Basanti Jyotsana, Ved Prakash, Ajay Kumar, Gayatri Gujar 2099

SHORT COMMUNICATION/CASE STUDY

Histopathological and Immunohistochemical Studies on Endocrine Glands of Dogs with Special Emphasis on the Immunoexpression of β-cells of the Pancreas
V. Kumar, S. Ramesh, R. Thangathurai, M. Thangapandiyan, R. Ramprabhu, M. Parthiban, N. Pazhanivel 2108

Dystocia in Cow due to Anasarca Syndrome along with Pulmonary Hypoplasia and Renal Hypertrophy in Aborted Calf: A Case Report
Mohammad Osamah Kalim, Shailendra Kumar Tiwari, Manoj Kumar Awasthi, Hamesh Kumar Ratre, I. Lourde Raj, Neetikopal Bante, Vivek Kumar 2115

New Distributional Record of *Triacanthus nieuhofii* Bleeker, 1852 (Tetraodontiformes: Triacanthidae) from Maharashtra, North West Coast of India
Avadootha Shivakrishna, Karan Kumar Ramteke, K.V. Akhilesh, Annam Pavan Kumar, C. Anulekshmi, B.B. Nayak, Zeba Jaffer Abidi 2121

Persistent Hymen in a Jersey Crossbred Heifer-A Novel Approach with Borescope
M. Selvaraju, V. Varudharajan, S. Manivannan, D. Gopikrishnan, S. Prakash, S. Manokaran 2126

Esteemed Reviewers of This Issue 2130
Author Index of This Issue 2130-2131
Key words Index of This Issue 2131-2132