

Curriculum Vitae

Name	:	Dr. Avishek Biswas	
Designation	:	HoD & Principal Scientist	
Discipline	:	Cattle Nutrition & Management (CN&M); ICAR-CIRC	
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❖ Education qualification (*Graduation on wards*)

Degree	Institute	Year	Division
Ph.D.	ICAR-Indian Veterinary Research Institute	2007	First
M.V.Sc.	ICAR-Indian Veterinary Research Institute	2003	First
M.B.A.	Manipal University, Jaipur, Rajasthan	2024	First
B.V.Sc. &A.H.	WB University of Animal & Fishery Sciences	2000	First

❖ Area of research

- ✚ **Nutrigenomics research:** Nutrigenomics research for cattle focuses on how nutrients interact with genes to influence an animal's health and productivity. The goal is to establish nutritional methods that will benefit the animal's health and performance.
- ✚ **Replacement of antibiotic:** Natural antibiotic alternatives, such as probiotics, prebiotics, symbiotics, para-probiotics, postbiotics, organic acids, essential oils, enzymes, immunostimulants, and phytogenic (phytobiotic) feed additives such as herbs, botanicals and essential oils are the most popular feed additives in the livestock/ poultry industry since the ban on antibiotic growth promoters.
- ✚ **Microalgae research:** Microalgae can be utilized as a livestock feed supplement since they provide a sustainable and healthy source of protein, vitamins, and minerals. Microalgae can also aid to enhance the quality of meat and milk.
- ✚ **Omega-3 enriched milk production:** Designer milk production in livestock is a process that uses genetic engineering and biotechnology to alter the composition of milk. The goal is to create milk that has improved nutritional value or is rich in specific components.

❖ Fellowships/Awards etc. (Not more than five)

1.	Awarded ' <i>Fellow of National Environmental Science Academy (FNESA)</i> ' New Delhi, India in 2026.
2.	Awarded ' <i>Associate Fellow of National Academy of Veterinary Sciences (AFNAVS)</i> ' New Delhi, India in 2025.
3.	Awarded ' <i>Fellow of Royal Society of Biology (FRSB)</i> ' London, United Kingdom (UK) in 2025.
4.	Awarded ' <i>Fellow of Indian Poultry Science Association (FIPSA)</i> ' Izatnagar, India in 2017.

5.	Recipient of the ' International Travel Grant-2020 ' from World Poultry Science Association (WPSA), Netherland for attend the APSS-2020, Sydney, Australia.
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❖ Patent / Technologies / Methodologies / System etc. (Not more than five) :

1.	Patent granted by Indian patent office, New Delhi for invention of ' <i>Design of pressurized normobaric hatchery technology for poultry egg hatching</i> ' Patent No. 358529 ; Date of Grant:12 02-2021; file number 1254/DEL/2013. Inventors: Srivastavam R.B., Ballewar, V.R., Bharti, V.K., Hota, S.K., Ahmed, M., Gogoi, D., Deshmukh, P.B.R., Biswas, A. and Yadav, R.
2.	Patent filed on 26-09-20024 entitled ' <i>A formulation for broiler growth and method of preparation thereof</i> ' applied to the Indian patent office. The patent publication date is 10-04-2026 and the patent application number 202411072845 . Inventors: Divya, Deo, C., Tiwari, A.K., Biswas, A. , Rokade, J.J., Saran, S and Hissalo.
3.	The window based computer software ' MAKEFEED POULTRY ' developed for efficient balanced formulation of feed for a wide variety of poultry birds like layer and broiler chickens, quails, guinea fowls, turkeys etc. It was updated and revised time to time for making it more users friendly. Inventors: Drs. Mandal, A.B., Elangovan, Nath, M., Biswas, A. , Tyagi, P.K.
4.	The technology CARI-HERBIGROW (ICAR-AS-CARI Product: 2023-055) . It is a special product developed by the ICAR Central Avian Research Institute's Division of Avian Nutrition and Feed Technology to take the place of antibiotic growth promoter. It was commercialized to M/s J S Water Energy Life Company, Gurugram, Haryana. The inventors are Drs. Divya, Deo, C., Biswas, A. , Saran, S and Tiwari, A.K.
5.	The technology CARI- HERBISTRESSMIN (ICAR-AS-CARI Product: 2023- 056) . The product HERBISTRESSMIN was developed by the Division of Avian Nutrition and Feed Technology at the ICAR Central Avian Research Institute (CARI) to reduce heat stress and boost production performance. It was commercialized to M/s J S Water Energy Life Company, Gurugram, Haryana. The inventors are Drs. Divya, Deo, C., Biswas, A., Bhanja, S.K., Saran, S and Tiwari, A.K.
6.	Awarded Trade mark for CARIBRODHANRAJA under the AICRP project. Eggs, egg products, poultry, poultry extracts and products made from the poultry being goods included in class 29 Live animals such as birds, chicks, being included in class 31.

❖ Selected Publications: (Min. 10 and Max. 20)

1.	Mahesh, T., Biswas, A. , Kolluri, G., Saham S.K., Bansod, A.P., Khandare, R. (2026). Exploring nutritional evaluation of cauliflower (<i>Brassica oleracea</i> var. <i>botrytis</i>) waste on the thyroid hormone, antioxidant status, immunity and expression of IL-6 and HSP-70 genes in broilers. Waste and Biomass Valorization , https://doi.org/10.1007/s12649-026-03499-x (NAAS: 08.80; IF: 2.80)
2.	Sruthy Ravi, Biswas, A.* , Kolluri, G., Geeta Pipaliya, Chandra Deo, Jaydip Rokade, Kanmoni Goyari, Priyanka Parte (2025). Effect of dietary supplementation of herbal immuno-modulator on growth performance, immune response and serum biochemical indices of broiler chickens. Scientific Reports , 15:39771; https://doi.org/10.1038/s41598-025-23484-z (NAAS: 09.90; IF: 3.90)
3.	Biswas, A.* , Chandra Deo, Divya Sharma, Ashok K Tiwari (2025). Supplementation of dietary probiotics improves performance, physicochemical characteristics, and oxidative stability of broiler

	meat. <i>ACS Food Science and Technology</i> , https://doi.org/10.1021/acsfoodscitech.5c00587 (NAAS: 08.80; IF: 2.80)
4.	Jayanti L Agashe, Deo, C., Biswas, A.* , Divya Sharma, Mukesh T Nampalle, Tiwari, A. K. (2025). Adequate levels of zinc and copper on turkey poult performance, immunological response, and skeletal health. <i>Biological Trace Element Research</i> , 203:1609-1617; https://doi.org/10.1007/s12011-024-04257-7 (NAAS: 9.60; IF: 3.60)
5.	Monika, M., Tyagi, J.S., Sonale, N., Biswas, A.* , Murali, D., Sky, Tiwari, A.K., Rokade, J.J. (2024). Evaluating the efficacy of Lactobacillus acidophilus derived postbiotics on growth metrics, Health, and Gut Integrity in broiler chickens. <i>Scientific Reports</i> , 14(1): 24768; DOI:10.1038/s41598-024-74078-0 (NAAS: 9.90; IF: 3.90)
6.	Gowthaman V., Sharma, D., Deo, C., Tiwari A.K., Biswas, A.* . (2024). Production performance, serum lipid profile and gut health in Indian native Kadaknath chickens fed diet incorporated with liquorice root powder. <i>Heliyon</i> , 10(22): e40230; DOI:10.1016/ j.heliyon.2024.e40230 (NAAS: 9.60; IF: 3.60)
7.	Biswas, A.* , Deo, C., Sharma, D., Matin, A., Tiwari, A.K. (2024). Production performance, haematological parameters, serum biochemistry, and expression of HSP-70 in broiler chickens fed dietary ascorbic acid during heat stress. <i>International Journal of Biometeorology</i> , 68(1):33-43; DOI: 10.1007/s00484-023-02568-3 (NAAS: 8.60; IF:2.60)
8.	Agashe, J.L., Deo, C., Biswas, A.* , Sharma, D., Nampalle, M.T., Tiwari, A.K. (2024). Adequate levels of zinc and copper on turkey poult performance, immunological response, and skeletal health. <i>Biological Trace Element Research</i> , DOI:10.1007/s12011-024-04257-7 (NAAS: 9.60; IF: 3.60)
9.	Champati, A., Bhanja, S.K., Rokade, J.J., Nayak, N., Yadav, A.S., Biswas, A. , Sharma, D., Chakma, J., Sky, Misjra, J., Saha, S.K., Agarwal, R.K., Singh, M. (2024). Evaluation of in-feed supplementation of formic acid and thymol as non-antibiotic growth promoters and assessing their effect on antimicrobial resistant <i>E.coli</i> isolated in Turkey. <i>Veterinary Research Communication</i> , 48:1741-1754; DOI:10.1007/s11259-024-10353-9. (NAAS: 8.00; IF: 2.00)
10.	Deo, C., Biswas, A.* , Sharma, D., Tiwari, A.K. (2023): Effects of different concentration of copper on performance, immunity and carcass traits in broiler Japanese quails. <i>Biological Trace Element Research</i> , 201(9):4530-4537 (NAAS: 9.60; IF: 3.60)
11.	Deo, C., Biswas, A.* , Sharma, D., Agashe, J.L., Tiwari, A.K. (2023). Effects of various copper sources and concentrations on performance, skeletal growth, and mineral content of excreta in broiler chickens. <i>Biological Trace Element Research</i> , 201(12):5786-5793 (NAAS: 9.90; IF: 3.90)
12.	Tukaram, N.M., Biswas, A.* , Deo, C., Agashe, J.L., Monika, M., Tiwari, A.K. (2022). Effects of paraprobiotic as replacements for antibiotic on performance, immunity, gut health and carcass characteristics in broiler chickens. <i>Scientific Reports</i> , 12:22619, DOI:10.1038/s41598-022-27181-z (NAAS: 9.90; IF: 3.90)
13.	Biswas, A.* , Sharma, D., Tyagi, P.K., Mandal, A.B. (2022). Physio-biochemical, antioxidant and oxidative stability of Turkey meat-fed diet incorporated with different level of organic chromium. <i>Animal Biotechnology</i> 32 (1), 106-112 (NAAS: 7.80; IF: 1.80)

14.	Biswas, A.* , Mohan, N., Dev, K., Mir, NA., Tiwari, AK (2021). Effect of dietary mannan oligosaccharides and fructo-oligosaccharides on physico-chemical indices, antioxidant and oxidative stability of broiler chicken meat. <i>Scientific Reports</i> , 11 (1):20567; DOI: 10.1038/s41598-021-99620-2 (NAAS: 9.90; IF: 3.90)
15.	Dev, K., Begum, J., Biswas, A.* , Mir, NA., Singh, J., Ravi Prakash, Sonowal, J., Bharali, K.,Tomar, S., Rajiv Kant, Ahlawat, N. (2021). Hepatic transcriptome analysis reveals altered lipid metabolism and consequent health indices in chicken supplemented with dietary Bifidobacterium bifidum and mannan-oligosaccharides. <i>Scientific Reports</i> 11:17895; DOI: 10.1038/s41598-021-97467-1 (NAAS: 9.90; IF: 3.90)
16.	Dev, K., Begum, J., Biswas, A.* , (2021). Dietary <i>Lactobacillus acidophilus</i> and <i>Mannan-Oligosaccharides</i> alter the lipid metabolism and health indices in broiler chickens. <i>Probiotics and Antimicrobial Protein</i> , 13:633-646; DOI: 10.1007/s12602-020-09717-9 (NAAS: 10.40; IF: 4.40)
17.	Biswas, A.* , Dev, K., Tyagi, PK., Mandal, AB. (2021). The effect of multi-strain probiotics as feed additives on performance, immunity, expression of nutrient transporter genes and gut morphometry in broiler chickens. <i>Animal Bioscience</i> , 35(1):64-74; DOI:10.5713/ab.20.0749 (NAAS: 8.50; IF: 2.50)
18.	Dev, K., Mir, NA., Biswas, A.* , Kannoujia, J., Begum, J., Rajiv, Kant., Mandal, AB. (2020) Dietary synbiotic supplementation improves the growth performance, body antioxidant pool, serum biochemistry, meat quality, and lipid oxidative stability in broiler chickens. <i>Animal Nutrition</i> , 6(3): 325-332 (NAAS: 13.50; IF: 7.50)
19.	Kumar, F., Tyagi, Praveen K., Mir, NA., Dev, K., Begum, J., Biswas, A.* , Sheikh, SA., Tyagi, Pramod K., Sharma, D., Bharti Sahu, Biswas, AK., Deo, C., Mandal, AB (2020). Dietary flaxseed and turmeric are a novel strategy to enrich chicken meat with long chain ω -3 polyunsaturated fatty acids with better oxidative stability and functional properties. <i>Food Chemistry</i> , 305:125458 (NAAS: 15.80; IF: 9.80)
20.	Dev, K., Mir, N.A., Biswas, A.* , Kannoujia, j., Begum, J., Rajiv Kant (2020). Dietary Mannan-oligosaccharides potentiate the beneficial effects of Bifidobacterium bifidum in broiler chicken. <i>Letters in Applied Microbiology</i> , 71(5): 520-530 (NAAS: 8.10; IF: 2.10)

❖ On-going research projects

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| 1. | Optimizing dairy cow performance by nutritional modulation of residual feed intake (RFI) : PI |
| 2. | Development of region-specific feeding module for Frieswal cattle during different physiological stages (Co-PI) |
| 3. | Quality augmentation of alternate feed resources through ensiling: (Co-PI) |
| 4. | Development of quality silage from wild guinea grass (WGG): (Co-PI) |

❖ Citation Link

<https://scholar.google.com/citations?user=6GN67f0AAAAJ>