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Major : Ruminant Nutrition and Physiology
Designation : Post-doctoral researcher,
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Expertise: Ruminant nutrition, methane mitigation, adipogenesis, lipogenesis, rumen microbiology, rumen taxanomics, meta-genomics, meta-transcriptomics, metabolomics.

Current Research:

- Evaluating the effects of 3-Nitroxy propanol and nitrate compounds on methane emission in Hanwoo steers.
- Comparative analysis of rumen metatranscriptome and metabolome of Hanwoo steers differing in methane emission.
- Determination of methane emission factor for Holstein Heifers using IPCC Tier 2 methodology.
- Estimating the carbon and nitrogen footprint of dairy and beef production in South Korea.
- Early metabolic imprinting using rumen bypass fat to improve meat quality and marbling in Hanwoo steers.

Qualification:

Degree	Major	University	Project title	CGPA	Year of Graduation
PhD	Agricultural Biotechnology	Seoul National University, Seoul, Republic of Korea	<i>Discovery and application of novel plant based feed additives for methane and nitrogen abatement in ruminant production</i>	4.07/4.3	2022
M.S	Agricultural Technology	Seoul National University, Seoul, Republic of Korea	<i>Effects of TMR and Separate Feeding System on Ruminant Methane Production, Total Digestibility, Rumen Metabolic and Microbial Profile</i>	3.95/4.3	2017
B.Tech	Biotechnology	Anna university, Chennai, India	<i>Antibacterial, anti-inflammatory and probiotic potential of Enterococcus hirae isolated from the rumen of Bos primigenius</i>	7.60/10	2014

Scientific publications:

S.NO	Title	Year	Article Info	SCI/SCIE	Impact Factor
1.	Developing Country-Specific Methane Emission Factors and Carbon Fluxes from Enteric Fermentation in South Korean Dairy Cattle Production	2021	Sustainability 2021, 13, 9133	SCIE	3.42
2.	Feeding Systems and Host Breeds Influence	2021	Frontiers in	SCIE	5.63

	Ruminal Fermentation, Methane Production, Microbial Diversity and Metagenomic Gene Abundance		Microbiology 12:701081		
3.	Effects of Dietary Protein Concentration on Lipid Metabolism Gene Expression and Fatty Acid Composition in 18–23-Month-Old Hanwoo Steers	2021	Animals 2021, 11, 3378	SCIE	2.75
4.	Developing Equations for Converting Digestible Energy to Metabolizable Energy for Korean Hanwoo Beef Cattle	2021	Animals 2021, 11, 1696	SCIE	2.75
5.	In Vitro Screening of East Asian Plant Extracts for Potential Use in Reducing Ruminal Methane Production	2021	Animals 2021, 11, 1020	SCIE	2.75
6.	Inhibitory potential of EGCG on Streptococcus mutans biofilm: A new approach to prevent Cariogenesis	2020	Microbial Pathogenesis 143 (2020) 104129	SCIE	3.74
7.	Chemical composition, antioxidant activity and antibacterial mechanism of action from <i>Marsilea minuta</i> leaf hexane: methanol extract	2018	Chemistry Central Journal 12 (1) (2018) pp: 105	SCI	2.61
8.	Ruminal methane emissions, metabolic, and microbial profile of Holstein steers fed forage and concentrate, separately or as a total mixed ration	2018	PLoS ONE 13(8): e0202446.	SCI	3.24
9.	Effects of caprylic acid and β -cyclodextrin complexes on digestibility, energy balance, and methane production in Korean Hanwoo heifers	2017	Animal Feed Science and Technology 234 (2017), 72-77	SCI	3.25
10.	Identification of evolutionarily conserved <i>Momordica charantia</i> microRNAs using computational approach and its utility in phylogeny analysis	2015	Computational Biology and Chemistry 58, (2015) 25–39	SCI	2.88
11.	Characterization of <i>Ambrette</i> Seed Oil and Its Mode of Action in Bacteria	2015	Molecules MDPI, 2015: 20(1), 384-395	SCIE	4.41
12.	Antibacterial, anti-inflammatory and probiotic potential of <i>Enterococcus hirae</i> isolated from the rumen of <i>Bos primigenius</i>	2014	World Journal of Microbiology and Biotechnology, 2014: 30 (7), 2111-2118	SCI	3.24

Chapter published in Book:

“Green Synthesis of Metallic Nanoparticles Using Plant Compounds and Their Applications: Metallic Nanoparticles Synthesis Using Plants” in Handbook of Research on Bioinspired Materials Engineering (020615-015946) <http://www.igi-global.com/chapter/green-synthesis-of-metallic-nanoparticles-using-plant-compounds-and-their-applications/146500>

Scientific papers under Communication/Preparation:

- ‘Metabolite Profile, Ruminal Methane Reduction, and Microbiome Modulating Potential of Seeds of *Pharbitis nil*’ – Under review in Frontiers in Microbiology Journal
- ‘Methane emission and Energy Partitioning in Hanwoo Steers Supplemented with Seeds of *Pharbitis nil*’ – Under communication
- ‘Metagenomic Analyses of Microbial and Carbohydrate-Active Enzymes in the Rumen of Holstein steers Supplemented with seeds of *Pharbitis nil*’ – Under communication

- Supplementation with rumen-protected fat in the growing phase altered adipogenic gene expression and the size and number of adipocytes in Hanwoo steers – Under communication
- ‘Effects of dietary supplementation of seeds of *Pharbitis nil* on ruminal methane production, metabolome, digestibility and health status of Holstein Heifers’ – Under preparation
- ‘Early metabolic imprinting of Hanwoo with rumen protected fat increased beef quality at slaughter’ – Under preparation

Achievements:

- Awarded as the ‘Best researcher of the year 2018’ by the institute of Green BioScience and Technology, Seoul National University, Pyeongchang, South Korea.
- Awarded best Presentation (2nd prize) for the oral presentation entitled “Invitro screening of 156 Korean domestic plant extracts on ruminal methane production” in the International conference on “Strategy to Overcome Crisis of Domestic Animal Husbandry” organised by Korean Society of Animal Sciences and Technology at Konkuk National University, South Korea.
- Awarded best Presentation for the poster presentation entitled “Invitro evaluation of antioxidant and antibacterial properties of n-hexane-methanol from *Marsilea minuta* leaves” in the annual conference organised by Korean Society of Antler Sciences at Konkuk National University, South Korea.

Scholarships received:

- Seoul National University, Global Scholarship – 8000,000 KW
- Seoul National University, Lecture support scholarship – 5200,000 KW
- Seoul National University, Work-Study scholarship – 2500,000 KW
- Gukdam scholarship, Korea – 2000,000 KW
- Seoul National University, Development fund scholarship – 800,000 KW
- Seoul National University, Merit based scholarship - 382,000 KW

Professional membership:

- American Society of Animal Science
- European Federation of Animal Production
- Korean Society of Animal Science and Technology
- Korean Society of Grassland and Forage Science

Professional research experience:

- Worked as a Research Associate (2017 – 2019) at the Institute of Green BioScience and Technology, Seoul National University, South Korea
- Worked as a Research Assistant (2014 – 2015) at Pondicherry Centre for Biological Sciences, Pondicherry, India.

Workshops, Trainings and Conferences attended:

- Presented orally a paper entitled “Host Genotype and Feeding System Influences Ruminal Methane Production with Marked Effect on Rumen Fermentation, Microbial and Metagenomic Gene Abundance” in the 12th Japan-China-Korea Joint Symposium on Rumen Metabolism and Physiology 2019, organized by Chinese Society of Animal Nutrition, held at Nanjing, China.

- Presented a poster entitled “Effects of feeding forage and concentrate, separately or as a TMR, on rumen microbial community” in the 11th Japan-China-Korea Joint Symposium on Rumen Metabolism and Physiology 2017, organized by Japanese Society for Rumen Metabolism and Physiology, held at Tokoname, Japan.
- Presented orally a paper entitled “Effects of *Semen pharbitidis* seeds on ruminal methane emission, fermentation and bacterial abundance – *In situ* Approach” in the 68th EAAP Annual Meeting 2017, organised by European Federation of Animal Science (EAAP) held at Tallin, Estonia.
- Presented orally a paper entitled “Effects of feeding forage and concentrate, separately or as a TMR, on ruminal methane emission, fermentation characteristics, and total tract digestibility” in the Joint Annual Meeting 2016, organized by American Society of Animal Sciences (ASAS) and American Dairy Science Association (ADSA) held at Utah, USA.
- Presented orally a paper entitled “Invitro screening of 156 Korean domestic plant extracts on ruminal methane production” in the International conference on “Strategy to Overcome Crisis of Domestic Animal Husbandry 2015” organised by Korean Society of Animal Sciences and Technology (KSAST) at Konkuk National University, South Korea.
- Presented a poster entitled “Invitro evaluation of antioxidant and antibacterial properties of n-hexane-methanol extract from *Marsilea minuta* leaves” in the annual conference 2016 organised by Korean Society of Antler Sciences at Konkuk National University, South Korea.
- Undergone two weeks Hands-on training in “International rumen microbiology workshop 2016” organized by Department of Animal Sciences, University of Illinois, USA and hosted by Department of Agricultural Biotechnology, Seoul National University, South Korea.
- Undertook two-week internship on animal feed quality assurance in Cargill Animal Nutrition Inc., Pyeongchang, South Korea.

List of referees:

- 1. Dr. Kyoung Hoon Kim**, Professor, Graduate School of International Agricultural Technology, Seoul National University, South Korea. **E-Mail:** khhkim@snu.ac.kr
- 2. Dr. Baik Myung Gi**, Professor, College of Agriculture and Life Sciences, Seoul National University, South Korea. **E-Mail:** mgbaik@snu.ac.kr
- 3. Dr. V.I. Hairul Islam**, Assistant Professor, Department of Biological sciences, College of Science, King Faisal university, Hofuf, Al Hasa, Saudi Arabia. **E-Mail:** hairul2biot@gmail.com
- 4. Dr. Arokiyaraj Selvaraj**, Assistant professor, Department of food biotechnology, Sejong university, South Korea. **E-Mail:** arokiyaraj16@gmail.com