CURRICULUM VITA

Dr. Sonali Namdeo

Ph. D. (Animal Nutrition)

Official Address

ICAR-Indian Veterinary Research Institute
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Career Objective

To work eminently in order to achieve the objective, to seek new challenges that effectively utilize my expertise and provide opportunities for knowledge enhancement and carrier growth in the field of animal nutrition research.

Personal details

Date of Birth	:	4th July 1994
Gender	:	Female
Nationality	:	Indian
Religion	:	Hindu
Marital status	:	Married
Linguistic proficiency	:	English, Hindi

Academic and Professional qualification

Sl.no	Name of Examination	University/Board	Percentage /OGPA	Passing year
1.	Ph.D. in Animal Nutrition	ICAR-Indian Veterinary Research Institute (IVRI), Bareilly, U. P	8.33	2024
2.	M.V. Sc in Animal Nutrition	College of Veterinary Science and AH, Jabalpur, M.P.	8.78	2020
3.	B.V. Sc & AH	College of Veterinary Science and AH, Jabalpur, M.P.	8.48	2018
4.	10+2 (CBSE)	St. Joseph's Convent Senior Secondary School, Sagar, M.P.	84.60%	2012
5.	10^{th} (CBSE)	St. Joseph's Convent Senior Secondary School, Sagar, M.P.	9.4	2010

Qualified **NET 2021** CONDUCTED BY ICAR, ASRB, New Delhi

Other credentials

M.V. Sc Thesis

Title: Dietary Supplementation of Ginger, Garlic and Turmeric on Performance of Broilers

ABSTRACT

The study was conducted to investigate the effects of dietary supplementation of ginger, garlic and turmeric on performance, nutrient utilization, immune response, serum biochemical parameters, carcass traits, anti-oxidant property and economics of broiler production. One hundred and thirty five, day old Cobb commercial broiler chicks were randomly distributed in to 9 experimental groups, each consisting of 3 replicates of 5 chicks each. The standard broiler diets (T1) were formulated as per feed specifications for Pre-starter: 0-14 days (22.5 % CP and 3000 kcal ME/kg); Starter: 15-28 days (21.0 % CP and 3125 kcal ME/kg) and Finisher: 29-42 days (19.5 % CP and 3250 kcal ME/kg). Other diets were same as standard diet except various levels of ginger, garlic and turmeric supplementations. Diets T2, T3 and T4 were supplemented with 0.5% each of ginger, garlic and turmeric, respectively, T5 with 0.25% each of ginger and garlic, T6 with 0.25% each of turmeric and ginger, T7 with 0.25% each of turmeric and garlic, diet T8 with a combination of ginger, garlic and turmeric @ 0.25% each while, diet T9 with 0.5% each of ginger and garlic and 0.25% of turmeric. Experiment was conducted for 6 weeks. Individual body weight and replicate-wise feed intake of broilers were recorded at weekly interval and thereafter feed efficiency ratio (FER) and performance index (PI) was calculated. Humoral immunity towards Newcastle disease virus was measured at 30^{th} and 42^{nd} day of

experiment by performing Haemagglutination inhibition test. Metabolic trial was conducted at the end of experiment to study the utilization of feed and its protein. Blood samples were also collected on the 42nd day of experiment for analysis of serum biochemical parameters. At the termination of experiment (42nd day), birds were sacrificed for the study of carcass traits and anti-oxidant property. The results (0-6 weeks) of present study indicated that supplementation of 0.5% garlic to the basal diet of broilers (T3) significantly improved ($p<0.05$) their feed efficiency ratio, nutrient utilization (digestibility of dry matter and crude protein), biochemical parameters (increase in total protein, HDL and reduction in LDL), immune response, anti-oxidant status and carcass traits. However, broilers fed diet supplemented with combination of 0.25% ginger and 0.25% garlic (T5) had significantly higher growth performance, nutrient utilization, antioxidant status, immune response and carcass traits followed by T7, T6 and T9 diets. The feed cost was maximum in T9 and minimum in T1 diet. While, feed cost per kg body weight gain was minimum in boilers fed T2 diet in pre-starter phase, T4 diet in starter and finisher phase and T3 diet for overall period. The gross return (Rs./bird) from broilers raising was maximum in group allotted T5 diet. While profit/bird was maximum in broilers fed T3 diet. Hence, it has been concluded that 0.5% garlic supplementation was most economical for broiler raising followed by 0.25% each of ginger and garlic.

Ph.D. Thesis

Title: Effect of Herbal Feed Additives on the Productive and Reproductive Performance of Post-Partum Crossbred Cows

ABSTRACT

The current research was planned to ascertain the supplementary effect of herbal feed additives on the performance of post-partum crossbred cows. In phase-I assessment of *T. cordifolia, W. somnifera and A. racemosus* was undertaken by IVGPT along with a phytochemical analysis. T. cordifolia exhibited higher phenolic and flavonoid content compared to W. somnifera and A. racemosus. Additionally, the percentage inhibition of DPPH free radical activity was lower in T. cordifolia followed by W. somnifera and A. racemosus. Supplementation of *T. cordifolia, W. somnifera* and *A. racemosus* and their combinations have increased gas production relative to CON. Similarly, TDDMR and TDOMR, MBP and PF were higher in all herbs supplemented groups at all levels and combination as compared to CON. Herbal feed additives and their combinations did not have any effect on pH, acetate and butyrate production. Though, when combination of herbs was supplemented @ 1 and 2% propionate production increased relative to CON. The NH3-N

was significantly decreased in all the treatment groups compared to CON. T. cordifolia alone, combination of *T. cordifolia* and *W. somnifera* (2:1) and blend of *T. cordifolia, W. somnifera* and *A. racemosus* (2:1:1) showed improved utilization relative to other combinations. In phase-II, postpartum crossbred cattle (24) were divided into 4 groups (CON, HF-1, HF-2, HF-3) with 6 cows each, following a CRD. The experimental cows in control group (CON) were fed on concentrate mixture, green maize fodder and wheat straw-based diet, however, cows in HF-1, HF-2 and HF-3 groups were fed as per CON group with *T. cordifolia*, *T. cordifolia* and *W. somnifera* (2:1), *T. cordifolia, W. somnifera* and *A. racemosus* (2:1:1) @150 mgkg-1 BW, respectively. BW changes and BCS were analogues across the treatments. Daily intake of concentrate and roughage was comparable among treatments. However, intakes (gkg-1W0.75) of DCP, DOM, and TDN were significantly higher in treatment groups compared to CON. Likewise, nutrient concentration (%) was greater in treatment groups than CON. Digestibility for DM, OM, and CP was elevated in all treatment groups, while no difference was noted in NDF, ADF and EE digestibility. Hb and hematocrit were noticeably higher in HF-2 and HF-3 relative to CON; however, serum glucose values were similar across treatments. Serum NEFA was significantly decreased in all supplemented groups relative to CON. Total protein, albumin, globulin, A: G ratio, serum urea, AST and ALT were comparable across the treatments. Serum total cholesterol was notably decreased among the treatment group than CON. However, serum T3 and T4 levels in the HF-1, HF-2, and HF-3 groups were higher than CON. Serum GH and IGF-1 levels were significantly higher in treatment groups relative to CON. The serum cortisol levels were statistically lower among all supplemented groups compared to CON. Serum GSH-Px, GSR, SOD and CAT levels were higher in HF-1, HF-2, and HF-3 groups than CON. Serum LPO was significantly ($P<0.01$) lower in supplemented groups relative to CON. TAC (%) was considerably higher HF-3 followed by HF-2, HF-1 and CON, respectively. The CMI response was substantially higher in HF-3 followed by HF-2, HF-1, and CON. Total milk yield and 4% FCM, ECM was higher ($P<0.01$) in herbal supplemented groups than CON. However, the fat yield, protein yield and milk composition were comparable among the treatments. Furthermore, TAC, TFC and DPPH activity in milk were substantially higher in HF-1, HF-2 and HF-3 relative to CON. SCC count in milk samples was significantly ($P<0.01$) lower in HF-2 and HF-3 as compared to CON. CMT values for trace or negative were higher in the supplemented groups compared to CON, while subclinical and clinical scoring was higher in CON. The overall conception rate was higher in herbal feed additives (66.7%) supplemented groups relative to CON (50.0%). The cows in HF-3 groups exhibited first oestrus early at 39 d followed by HF-1 (48

d), HF-2 (44 d), and CON group (56 d), respectively. The numbers of AIs per conception were considerably higher in the CON relative to other groups. The pH and spinnbarkeit values of cervical mucus were significantly higher in the supplemented groups than CON. The arborization pattern of cervical mucus with typical fern pattern exhibited higher conception rate in HF-3 HF-2 and HF-1 than CON. The fold expression of GSH-Px, SOD and CAT genes was notably higher in herbal supplemented groups than CON. It can be revealed that the herbal feed additives positively influenced nutrient utilization, metabolic profile, immunity, reproductive performance and milk yield milk quality in post-partum crossbred cows.

Research articles

1. **Namdeo, S.**, Baghel, R.P.S., Nayak, S., Khare, A. and Pal, R.P., 2024. Dietary supplementation of ginger, garlic and turmeric on the performance of broiler chicken. *Animal Nutrition and Feed Technology*, *24*(2), pp.373-385. https://doi.org/10.5958/0974-181X.2024.00029.2.
2. **Namdeo, S**., Baghel, R.P.S., Nayak, S., Khare, A., Prakash, R., Pal, A.C. and Sahu, S., 2022. Effect of dietary supplementation of ginger, garlic and turmeric on humoral immune response, antioxidant property and carcass traits of broilers. *The Pharma Innovation Journal*, *11*, pp.787-791.
3. Chakma, J., Kaur, N., **Namdeo, S**., Patir, M., Dutta, N., Jadhav, S.E., Singh, G. and Singh, S.K., 2024. Effect of Murraya koenigii and Aegle marmelos leaves supplementation on gas production kinetics and feed degradation with cattle inoculum. *Animal Nutrition and Feed Technology*, *24*(1), pp.137-148. https://doi.org/10.1007/s10811-024-03344-5.
4. Chakma, J., Dutta, N., Jadhav, S.E., Singh, S.K., Choravada, D.R., Champati, A., **Namdeo, S.** and Kaur, N., 2024. Impact of feeding Murraya koenigii and Aegle marmelos leaves on metabolic and reproductive performance in crossbred cows. https://doi.org/10.56093/ijans.v94i11.145876.
5. **Namdeo, S**., Kaur, N., Chakma, J., Dutta, N., Jadhav, S.E., 2024. *Tinospora cordifolia*, *Withania somnifera* and *Asparagus racemosus* supplementation on rumen fermentation pattern and substrate degradation. *Animal Nutrition and Feed Technology*, (**In print**).
6. Reddy, P.B., Das, A., Gudaghe, H.B., Vasavi, R., Shinde, K.K., **Namdeo, S.** and Das, T. 2024. Effect of dietary tropical red seaweed combinations on plane of nutrition,

intestinal morphology, organ weights, and blood biochemical profile in Wistar rats. *Int. J. Adv. Biochem. Res.* **8**(11): 399-405.

Book Chapters

1. **Namdeo, S**., Das, T., K. Rathode, K. N., Reddy, P. B. and Sahu, S. (2023). Principles and Application of Gas Chromatography (GC) and High-Performance Liquid Chromatography (HPLC). In: Advance Analytical Techniques in Animal Nutrition. Bansod, A. P., Khandare R. M., and Jadhao P. R. (Eds.), published by AkiNik Publications New Delhi, India, pp 33-41 (**ISBN 978-93-5570-951-6).**
2. Reddy, P.B., Harani, M., Rathode, K. N., Das, T. and **Namdeo S.** (2023). Analysis of Feed and Fodder by Using Near Infrared Reflectance Spectroscopy (NIRS). In: Advance Analytical Techniques in Animal Nutrition. Bansod, A. P., Khandare R. M., and Jadhao P. R. (Eds.), published by AkiNik Publications New Delhi, India, pp 65-74 (**ISBN 978-93-5570-951-6).**
3. Das, T., **Namdeo, S**., Rathod, K. N., Reddy, P. B. and Sahoo, R. (2023). Biotechnological Application for Lignin Degradation. In: Advance Analytical Techniques in Animal Nutrition. Bansod, A. P., Khandare R. M., and Jadhao P. R. (Eds.), published by AkiNik Publications New Delhi, India, pp 167-175 (**ISBN 978-93-5570-951-6).**
4. Rathode, N., **Namdeo, S.**, Reddy, P. B., Das, T. and Kala, A. (2023). Concept of Meta-Genomics in Rumen Manipulation, Greenhouse Gas Production from Rumen and Mitigation Strategies. In: Advance Analytical Techniques in Animal Nutrition. Bansod, A. P., Khandare R. M., and Jadhao P. R. (Eds.), published by AkiNik Publications New Delhi, India, pp 179-198 (**ISBN 978-93-5570-951-6).**

Review articles

1. **Namdeo, S**., Baghel, R., Nayak, S., Khare, A., Prakash, R., Pal, A.C., Thakur, S. and Reddy, B., 2020. Essential oils: an potential substitute to antibiotics growth promoter in broiler diet. *J. Entomol. Zool. Stud*, *8*, pp.1643-1649.

2. Reddy, B.V.V., Nayak, S., Khare, A., Pal, R.P., Sharma, R., Chourasiya, A., **Namdeo, S.** and Thakur, S., 2021. Role of hydroxy trace minerals on health and production of livestock: a review. *Journal of Livestock Scienc (ISSN online 2277-6214)*, *12*, pp.279-286.
3. Reddy, P. B., **Namdeo, S.**, Shreeya, T. V., Das, T., Kumar, M., and Katam, D. 2023. Nutritional management of liver diseases in dogs and cats. The Pharma Innovation Journal, **12**(1): 1352-1359.

Popular or newspaper articles

S. No.	Title of Article with authors in order	Publication Details with the name of the magazine, year, vol., pages, etc.
1.	गर्मीयों में भैंसों की आहार प्रणाली **Sonali Namdeo,** Sahil Thakur, RPS Baghel	Krishak Bharti, 2019, pp. 37
2.	मुर्गी पालन का महत्त्व **Sonali Namdeo,** Saurabh Sahu, Sahil Thakur, Vedha Vyas Reddy, Manoj Reddy	Krishak Aradhna, vol 11, 2021, pg 12
1.	वर्षा ऋतु में पशूओं का आहार **Sonali Namdeo,** Sahil Thakur, Aporva Pandey, Shiwani Singh, Rammukut Bisaria, Amit Chaurasia, Ankur Khare	Krishak Aradhna, 2019, pg 6
2.	गो पशु व भैंस के विविध अवस्थों हेतु अवष्य पोषक तत्व **Sonali Namdeo,** Sahil Thakur, Saurabh Sahu	Krishak Aradhna, 2019, pg 6
3.	पशु में विटामिन ए व विटामिन डी की अल्पता एवं उपचार **Sonali Namdeo,** Saurabh Sahu, Anuj Singh, Gunjan Chalana	Krishak Aradhna, 2021, pg 82
4.	Effective strategies for safe guarding feeds against insects, rodents, and microbial spoilage Trishna Das, Raj Sahoo, **Sonali Namdeo**, P. Bagavan Reddy, Narayana Rathode	Trends in agriculture science,vol 2, 2023, pg 826-831
5.	गाय के बछाड़ों को गर्मी से बचाने के लिए क्या करें उपाय RPS Baghel, Sahil Thakur, **Sonali Namdeo**	Kheti Kisani, Dainik Bhaskar, 2019, pg 11

Conference Papers

S. No	Particulars of conference	International / National	Title of Paper presented with authors in order
1	XXXVI Annual IPSA conference	National	Effect of graded replacement of maize with paddy using enzyme on performance of broilers Rahul Sharma, RPS Baghel, Ankur Khare, Ravi Pal, Pramod Sharma, Shanu Singour, **Sonali Namdeo** and Shiwani Singh
2	1st Animal Science Congress & National Symposium on Sustainable Scientific strategies for Improving Health and Productivity of Livestock &First Annual Convention of Association of Animal Sciences	National	Effect of of ginger, garlic and turmeric on performance of broilers **Sonali Namdeo**, RPS Baghel, Sunil Nayak, Ankur Khare, Amit Chaurasiya, Sahil Thakur, Ashish Singh and BVV Reddy
3	20th Biennal International Conference of ANSI (ANSICON 2024) on Sustainable Animal Nutrition for Global Health and Production: Innovation and Directions	National	Effect of herbal feed additives on substrate degradation and rumen fermentation S. Namdeo, N. Kaur, Juli Chakma, N. Dutta, S.E. Jadhav
4	20th Biennal International Conference of ANSI (ANSICON 2024) on Sustainable Animal Nutrition for Global Health and Production: Innovation and Directions	National	Effect of phytogenic feed additives supplementation on substrate degradation and microbial biomass production in cattle inoculum A. Oviya, N. Kaur, N. Dutta, **S. Namdeo**, H.O. Pandey and S.E. Jadhav
5	20th Biennal International Conference of ANSI (ANSICON 2024) on Sustainable Animal Nutrition for Global Health and Production: Innovation and Directions	National	Effect of supplementation of phytogenic feed additives on performance of goat kids A. Oviya, N. Kaur, N. Dutta, **S. Namdeo**, H.O. Pandey and S.E. Jadhav
6	2nd Veterinary and Animal Science Congress & 2nd Annual Convention of Association of Animal Sciences & National Symposium on technological intervation for improving animal health and productivity	National	Effect of combinations of herbal feed additives on substrate degradation and rumen fermentation **S. Namdeo**, N. Kaur, A. Oviya, N. Dutta, S.E. Jadhav

Best paper presentation award

S. No.	Details of Conference/ Symposia	Title of Paper with Award	Authors in Order
1.	XXXVI Annual IPSA conference	Effect of graded replacement of maize with paddy using enzyme on performance of broilers **2nd prize in Poster Presentation**	Rahul Sharma, RPS Baghel, Ankur Khare, Ravi Pal, Pramod Sharma, Shanu Singour, **Sonali Namdeo** and Shiwani Singh
2.	1st Animal Science Congress & National Symposium on Sustainable Scientific strategies for Improving Health and Productivity of Livestock &First Annual Convention of Association of Animal Sciences	Effect of of ginger, garlic and turmeric on performance of broilers **3rd prize in Oral Presentation**	**Sonali Namdeo**, RPS Baghel, Sunil Nayak, Ankur Khare, Amit Chaurasiya, Sahil Thakur, Ashish Singh and BVV Reddy
3.	2nd Veterinary and Animal Science Congress & 2nd Annual Convention of Association of Animal Sciences & National Symposium on technological intervation for improving animal health and productivity	Effect of combinations of herbal feed additives on substrate degradation and rumen fermentation **1st prize in Poster Presentation**	**S. Namdeo**, N. Kaur, A. Oviya, N. Dutta, S.E. Jadhav

Workshops Attended

1. **Advanced Training on Nutritional and Biotechnological Approaches to Improve Productivity in Farm Animals**, ICAR-NIANP, Bengaluru, March 1-10, 2024
2. 21-day national refresher course (NRS 2022) on **Recent Technologies of Livestock based Integrated Farming System for Doubling Farmers Income**, Baramulla, J&K, 1-21 Feb, 2022

Technical Skills

1. Analysis of proximate principles in feed sample.
2. Analysis of mineral mixture and mineral salts for inorganic analysis.
3. Feed formulation of livestock animals.
4. Assessment of digestibility of ruminants.
5. Well-versed in handling spectrophotometer and bomb calorimeter.
6. Assessment of volatile fatty acids (VFA) in rumen liquor by gas-liquid chromatography.
7. Estimation of rumen metabolites.
8. Methods of blood collection in poultry and farm animals.

Professional Affiliations

1. Registered member of Madhya Pradesh Veterinary Council (MPVC)

2. Registered member of Veterinary council of India (VCI)
3. Life member of the **Animal Nutrition Association** (ANA), India
4. Life member of **Animal Nutrition Association India** (ANSI)
5. Life member of **Association of Animal Scientist** (AAS)

Computer Skills

1. Well-versed with Applications of MS Excel, MS Word MS PowerPoint for Documentation and statistical analysis and interpretation using SPSS.

Leadership in academics

1. Vice president of IVRI student counsel for academic year 2023-24

Awards & Achievements

S. No.	Name and Year of Award/ Medal/Fellowship/Scholarship	Awarding Institute/ body
1.	**Meena Rajawat gold medal in Animal Nutrition**	NDVSU, Jabalpur
2.	**S.K. Saxena gold medal in Veterinary Physiology**	NDVSU, Jabalpur
3.	**National youth parliament competition for universities, 2018**	Gov. of India
4.	**Young Scientist Award**	AAS
5.	**ICAR-JRF/SRF Fellowship**	ICAR

Declaration

I hereby declare that the above-mentioned particulars are true and correct to the best of my knowledge and belief assuring you my best services always.

Place: Sagar

Date: 16/09/2024

Sonali Namdeo