Nazir Ahmad Khan, PhD

Professor | Principal Investigator | Global Expert in Ruminant Nutrition

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Awards & Distinctions – Academic Excellence & Research Impact

- **Editorial Board Member – Leading Peer-Reviewed Journals (Ongoing)**
  Serving on editorial boards of JCR-indexed journals including *Journal of the Science of Food and Agriculture*, *International Journal of Microbiology*, *Biomed Research International*, and *Frontiers in Plant Science*, reflecting international recognition in animal nutrition and feed science.
- **Principal Investigator – 9 Extramurally Funded R&D Projects**
  Led high-impact, externally funded R&D projects on feed evaluation, real-time spectroscopy, silage optimization, bioprocessing of low-value feeds, additive innovation, and methane mitigation, demonstrating leadership in sustainable, industry-aligned research.
- **High-Citation Research Awards – *Journal of Dairy Science & Journal of Agronomy***
  Multiple top 100 most-cited publications, highlighting enduring impact on dairy nutrition, forage quality, and applied livestock research.
- **Postdoctoral Fellowship – University of Saskatchewan, Canada (2013–2014)**
  Awarded under the Ministry of Agriculture's Strategic Program to advance rapid, non-invasive feed evaluation using molecular spectroscopy for precision nutrition and commercial feed quality monitoring.
- **Junior Research Fellowship – Wageningen University, Netherlands (2011–2012)**
  Competitively awarded merit-based fellowship by the Wageningen Institute of Animal Sciences, recognizing outstanding research potential among recent PhD graduates.
- **PhD with Distinction – Wageningen University**
  Graduated with a "very good" thesis from the world's top-ranked university in Agriculture & Forestry (QS Rankings), reflecting academic excellence and research impact.
- **Scientific Productivity & Thought Leadership**
  Authored 90+ peer-reviewed articles (h-index: 35; 3,500+ citations) in high-impact journals, demonstrating leadership in ruminant nutrition, feed science, and sustainable livestock systems.
- **Elected Member – Pakistan Academy of Sciences (2021–2031)**
  One of 50 under 40 scientists honored for outstanding research leadership and national impact in science and innovation.
- **HEC PhD Fellowship & Dual Gold Medals – Academic Excellence in Agricultural Sciences**
  Recipient of the prestigious HEC Overseas PhD Fellowship (2007–2011), and two Gold Medals for top academic performance in BSc and MSc at the University of Agriculture Peshawar.

EDUCATION

PhD Animal Nutrition, Wageningen University, The Netherlands

September 18, 2007– September 19, 2011

Completed a high-impact PhD within one of the world's top-ranked animal nutrition research groups, with a focus on improving the nutritional quality of ruminant-derived products through forage-based feeding strategies. Led a series of integrated studies examining the effects of forage genotype, harvest maturity, wilting, ensiling, and feed-out dynamics on the fatty acid profile, digestibility, milk yield, milk fat quality, and methane emissions in dairy cows. This research delivered practical insights for optimizing grass and maize silage quality to improve milk production, milk fat quality, and environmental sustainability.

MSc (Hons) in Animal Nutrition

The University of Agriculture Peshawar, Pakistan | March 2006

Distinction: Gold Medalist (CGPA: 3.92)

BSc (Hons) in Animal Husbandry

The University of Agriculture Peshawar, Pakistan | March 2004

Distinction: Gold Medalist (CGPA: 3.93)

Experience

Academic Appointments

Department of Animal Nutrition, The University of Agriculture Peshawar, Pakistan

Professor | *May 19, 2023 – Present*

Associate Professor | *November 23, 2018 – May 18, 2023*

Assistant Professor | *October 31, 2014 – November 22, 2018*

Publications

Full publication list available on Google Scholar and ResearchGate

Key Research Metrics (as of July 2025)

Metric	All Time	Since 2020
Peer-Reviewed Publications	100	46
Citations	3,257	2,361
h-index	33	25
i10-index	73	68

Full list of Publications

- *$# **Khan, N. A.,** Cone, J. W., Hendriks, W. H. (2009). Stability of fatty acids in grass and maize silages after exposure to air during the feed out period. ***Animal Feed Science and Technology***, 154: 183–192. Link
- *$ **Khan, N. A.,** Habib, G., Ullah, G**.** (2009). Chemical composition, rumen degradability, protein utilization and lactation response to selected tree leaves as substitute of cottonseed cake in the diet of dairy goats. ***Animal Feed Science and Technology***, 154: 160–168. Link
- *$# **Khan, N. A.,** Cone, J. W., Fievez, V., Hendriks, W. H. (2011). Stability of fatty acids during wilting of perennial ryegrass (Lolium perenne L.): Effect of bruising and environmental conditions. ***Journal of the Science of Food and Agricultur****e*, 91: 1659–1665. Link
- *$# **Khan, N. A.,** Cone, J. W., Pellikaan, W. F., Khan, M. A., Struik, P. C., Hendriks, W. H. (2011). Changes in fatty acid content and composition in silage maize during grain filling. ***Journal of the Science of Food and Agriculture***, 91: 1041–1049. Link
- *$# **Khan, N. A.,** Tewoldebrahn, T. A., Zom, R. L. G., Cone, J. W., Hendriks, W. H. (2012). Effect of corn silage harvest maturity and concentrate type on milk fatty acid composition of dairy cows. ***Journal of Dairy Science***, 95: 1472–1483. Link
- *$# **Khan, N. A.,** Cone, J. W., Fievez, V., Hendriks, W. H. (2012). Causes of variation in fatty acid content and composition in grass and maize silages. ***Animal Feed Science and Technology***, 174: 36–45. Link
- *$ **Khan, N. A.,** Habib, G. (2012). Assessment of *Grewia oppositifolia* leaves as crude protein supplement to low-quality forage diets of sheep. ***Tropical Animal Health and Production***, 44: 1375–1381. Link
- * Habib, G., **Khan, N. A.,** Ali, M., Bezbih, M. (2013). In situ ruminal crude protein degradability of by-products from cereals, oilseeds and animal origin. ***Livestock Science***, 153: 81–87. Link
- Habib, G., Ali, M., Bezbih, M., **Khan, N. A.** (2013). In situ assessment of ruminal dry matter degradation kinetics and effective rumen degradability of feedstuffs originated from agro-industrial by-products. ***Pakistan Veterinary Journal***, 33: 466–470. Link
- * Khan, M. T., **Khan, N. A.,** Bezabih, M., Qureshi, M. S., Rahman, A. (2013). The nutritional value of peanut hay (*Arachis hypogaea* L.) as an alternate forage source for sheep. ***Tropical Animal Health and Production***, 45: 849–853. Link
- # Peng, Q., **Khan, N. A.,** Wang, Z., Yu, P. (2014). Moist and dry heating-induced changes in protein molecular structure, protein subfractions, and nutrient profiles in camelina seeds. ***Journal of Dairy Science***, 97: 446–457. Link
- # Xin, H., **Khan, N. A.,** Falk, K. C., Yu, P. (2014). Mid-infrared spectral characteristics of lipid molecular structures in *Brassica carinata* seeds: Relationship to oil content, fatty acid and glucosinolate profiles, polyphenols, and condensed tannins. ***Journal of Agricultural and Food Chemistry***, 62: 7977–7988. Link
- # Yan, X., **Khan, N. A.,** Zhang, F., Yang, L., Yu, P. (2014). Microwave irradiation induced changes in protein molecular structures of barley grains: Relationship to changes in protein chemical profile, protein subfractions, and digestion in dairy cows. ***Journal of Agricultural and Food Chemistry***, 62: 6546–6555. Link
- Alam, S., Shah, H. U., **Khan, N. A.,** Zeb, A., Shah, A. S., Mogan, N. (2014). Water availability and calcium propionate affect fungal population and aflatoxins production in broiler finisher feed during storage. ***Food Additives and Contaminants: Part A*****,** 31: 1896–1903. Link

- # Bezabih, M., Pellikaan, W. F., Tolera, A., **Khan, N. A.,** Hendriks, W. H. (2014). Nutritional status of cattle grazing natural pasture in the Mid Rift Valley grasslands of Ethiopia measured using plant cuticular hydrocarbons and their isotope enrichment. ***Livestock Science***, 161: 41–52. Link

- # Peng, Q., **Khan, N. A.,** Wang, Z., Yu, P. (2014). Relationship of feeds protein structural makeup in common Prairie feeds with protein solubility, in situ ruminal degradation and intestinal digestibility. ***Animal Feed Science and Technology***, 194: 58–70. Link

- # Peng, Q., **Khan, N. A.,** Wang, Z., Zhang, X., Yu, P. (2014). Effect of thermal processing on estimated metabolizable protein supply to dairy cattle from camelina seeds: Relationship with protein molecular structural changes. ***Journal of Agricultural and Food Chemistry***, 62: 8263–8273. Link

- $# **Khan, N. A.,** Booker, H., Yu, P. (2014). Molecular structures and metabolic characteristics of protein in brown and yellow flaxseed with altered nutrient traits. ***Journal of Agricultural and Food Chemistry***, 62: 6556–6564. Link

- # Bezabih, M., Pellikaan, W. F., Tolera, A., **Khan, N. A.,** Hendriks, W. H. (2014). Chemical composition and in vitro total gas and methane production of forage species from the Mid Rift Valley grasslands of Ethiopia. ***Grass and Forage Science***, 69: 635–643. Link

- *$# **Khan, N. A.,** Yu, P., Ali, M., Cone, J. W., Hendriks, W. H. (2015). Nutritive value of maize silage in relation to dairy cow performance and milk quality. ***Journal of the Science of Food and Agriculture***, 95: 238–252. Link

- *$ **Khan, N. A.,** Farooq, M. W., Ali, M., Suleman, M., Ahmad, N., Sulaiman, S. M., Cone, J. W., Hendriks, W. H. (2015). Effect of species and harvest maturity on the fatty acids profile of tropical forages. ***Journal of Animal and Plant Sciences***, 25: 739–746. Link

- Shahid, S., Chand, N., Khan, R. U., **Khan, N. A.,** Suhail, S. M. (2015). Alterations in cholesterol and fatty acids composition in egg yolk of Rhode Island Red × Fyoumi hens fed with hemp seeds (*Cannabis sativa* L.). ***Journal of Chemistry***, Article ID 362936, 6 pages. Link

- # Ali, M., Cone, J. W., **Khan, N. A.,** Hendriks, W. H., Struik, P. C. (2015). Effect of temperature and duration of ensiling on in vitro degradation of maize silages in rumen fluid. ***Journal of Animal Physiology and Animal Nutrition***, 99: 251–257. Link

- # Yu, G. Q., Warkentin, T., Zhiyuan, N., **Khan, N. A.,** Yu, P. (2015). Molecular basis of processing-induced changes in protein structure in relation to intestinal digestion in yellow and green type pea (*Pisum sativum* L.): A molecular spectroscopic analysis. ***Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy***, 151: 980–988. Link

- $# **Khan, N. A.,** Peng, Q., Xin, H., Yu, P. (2015). Vibrational spectroscopic investigation of heat-induced changes in functional groups related to protein structural conformation in camelina seeds and their relationship to digestion in dairy cows. ***Animal Production Science***, 55: 201–206. Link

- *$# **Khan, N. A.,** Hussain, S., Ahmad, N., Alam, S., Bezabih, M., Hendriks, W. H., Yu, P., Cone, J. W. (2015). Improving the feeding value of straws with *Pleurotus ostreatus*. ***Animal Production Science***, 55: 241–245. Link

- $# **Khan, N. A.,** Booker, H., Yu, P. (2015). Effect of heating method on alteration of protein molecular structure in flaxseed: Relationship with changes in protein subfraction profile and digestion in dairy cows. ***Journal of Agricultural and Food Chemistry***, 63: 1057–1066. Link

- # Huang, X., **Khan, N. A.,** Zhang, X., Yu, P. (2015). Effects of canola meal pellet conditioning temperature and time on ruminal and intestinal digestion, hourly effective degradation ratio, and potential N to energy synchronization in dairy cows. ***Journal of Dairy Science***, 98: 8836–8845. Link

- Khan, K., Khan, S., Khan, R., Sultan, A., **Khan, N. A.,** Ahmad, N. (2016). Growth performance and meat quality of rabbits under different feeding regimes. ***Tropical Animal Health and Production***, 48: 1661–1666. Link

- Bezabih, M., Duncan, A. J., Adie, A., Kekonnen, K., **Khan, N. A.,** Thorne, P. (2016). The role of irrigated fodder production to supplement the diet of fattening sheep by smallholders in Southern Ethiopia. ***Tropical and Subtropical Agroecosystems***, 19: 263–275. Link

- Khan, S., Naz, S., Sultan, A., Alhidary, I. A., Abdelrahman, M. M., Khan, R. U., **Khan, N. A.,** Khan, M. A., Ahmad, S. (2016). Worm meal: A potential source of alternative protein in poultry feed. ***World's Poultry Science Journal***, 72: 93–102. Link

- # Ali, M., Cone, J. W., Duinkerken, G. V., Klop, A., Blok, M. C., Bruinenberg, M., **Khan, N. A.,** Hendriks, W. H. (2016). Variation between individual cows in in situ rumen degradation characteristics of maize and grass silages. ***NJAS - Wageningen Journal of Life Sciences***, 78: 167–173. Link

- * Habib, G., **Khan, N. A.,** Sultan, A., Ali, M. (2016). Nutritive value of common tree foliage for livestock in the semi-arid and arid rangelands of Northern Pakistan. ***Livestock Science***, 184: 64–70. Link

- *# Ban, Y., **Khan, N. A.**, Yu, P. (2017). Nutritional and metabolic characteristics of *Brassica carinata* co-products from biofuel processing in dairy cows. ***Journal of Agricultural and Food Chemistry***, 65: 5994–6001. Link

- * Khan, K., Khan, S., Ullah, S., **Khan, N. A.,** Khan, I., Ahmad, N. (2017). Nutritive value, fiber digestibility and methane production potential of tropical forages in rabbits: Effect of species and harvest maturity. ***Journal of Animal and Plant Sciences***, 27: 1094–1100. Link

- * Khan, K., Khan, S., **Khan, N. A.,** Ahmad, N. (2017). Production performance of indigenous rabbits under traditional and intensive production systems in northern Pakistan. ***Journal of Animal and Plant Sciences***, 27: 75–81. Link

- # Refat, B., Prates, L. L., **Khan, N. A.,** Lei, Y., Christensen, D. A., McKinnon, J. J. M., Yu, P. (2017). Physiochemical characteristics and molecular structures for digestible carbohydrates of silages. ***Journal of Agricultural and Food Chemistry***, 65: 8979–8991. Link

- * Ullah, R., Khan, S., **Khan, N. A.,** Tahir, M., Ahmad, N. (2018). Effect of replacement of soybean meal by silkworm meal on growth performance, apparent metabolizable energy and nutrient digestibility in broilers at day 28 post hatch. ***Journal of Animal and Plant Sciences***, 28: 1239–1246. Link

- Peng, Q. H., **Khan, N. A.,** Xue, B., Yan, T. H., Wang, Z. S. (2018). Effect of different levels of protein concentrates supplementation on the growth performance, plasma amino acids profile and mTOR cascade genes expression in early weaned yak calves. ***Animal Bioscience***, 31: 218–224. Link

- # Abeysekara, S., **Khan, N. A.,** Yu, P. (2018). Relationship between protein molecular structural makeup and metabolizable protein supply to dairy cattle from new cool-season forage corn cultivars. ***Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy***, 191: 303–314. Link

- *# Sun, B., **Khan, N. A.,** Yu, P. (2018). Molecular spectroscopic features of protein in newly developed chickpea: Relationship with protein chemical profile and metabolism in the rumen and intestine of dairy cows. ***Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy***, 196: 168–177. Link

- # Sun, B., **Khan, N. A.,** Sun, M., Prates, L. L., Yu, P. (2018). Curve-linear relationship between altered carbohydrate traits with molecular structure and truly absorbed nutrient supply to dairy cattle in new hull-less barley (*Hordeum vulgare* L.). ***Animal Feed Science and Technology***, 235: 177–188. Link

- Rehman, S. U., Ali, T., Ali, I., **Khan, N. A.,** Han, B., Gao, J. (2018). The growing genetic and functional diversity of extended spectrum beta-lactamases. ***BioMed Research International***, 2018: 9519718 (14 pages). Link

- $# Xin, H., **Khan, N. A.,** Sun, K., Sun, F., Rahman, S. U., Fu, Q., Li, Y., Zhang, Y., Hu, G. (2020). Batch-to-batch variation in protein molecular structures, nutritive value and ruminal metabolism in corn coproducts. ***Animal Feed Science and Technology***, 263: 114428. Link

- Alam, S., **Khan, N. A.,** Muhammad, A., Jan, I., Hashmi, M. S., Khan, A., Khan, M. O. (2020). Carryover of Aflatoxin B1 from feed to broilers' tissues and its effect on chicken performance. ***Fresenius Environmental Bulletin***, 29: 214–221. Link

- Khan, K., Ullah, I., Khan, N. A., Khan, S. (2020). Evaluation of mulberry (*Morus alba*) leaves as a concentrate substitute in rabbit diet: Effect on growth performance and meat quality. ***Turkish Journal of Veterinary and Animal Sciences***, 44: 1136–1141. Link

- *# Xin, H., Sun, F., Sun, K., Fu, Q., Li, Y., Zhang, Y., Sadeeq, U. R., **Khan, N. A.** (2020). Batch-to-batch variation in carbohydrates molecular structures, nutritive value and ruminal metabolism in corn coproducts. ***Animal Feed Science and Technology***, 263: 114458. Link

- Din, I., Khan, H., **Khan, N. A.,** Khil, A. (2021). Inoculation of nitrogen fixing bacteria in conjugation with integrated nitrogen sources induced changes in phenology, growth, nitrogen assimilation and productivity of wheat crop. ***Journal of the Saudi Society of Agricultural Sciences***, 20: 459–466. Link

- Qaisrani, S. N., Rizwan, M., Yaseen, G., Bibi, F., Awais, M., Sarfraz, A., **Khan, N. A.**, Naveed, S., Pasha, T. N. (2021). Effects of dietary oxidized oil on growth performance, meat quality and biochemical indices in poultry – A review. ***Annals of Animal Science***, 21: 29–46. Link

- # Ban, Y., Prates, L. L., Feng, X., **Khan, N. A.**, Yu, P. (2021). Novel use of ultra-resolution Synchrotron vibrational microspectroscopy (SR-FT/VIMS) to assess carinata and canola oilseed tissues within cellular and subcellular dimensions. ***Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy***, 246: 118934. Link

- $# Xin, H., **Khan, N. A.,** Yu, P. (2021). Steam pressure induced changes in carbohydrate molecular structures, chemical profile and in vitro fermentation characteristics of seeds from new *Brassica carinata* lines. ***Animal Feed Science and Technology***, 276: 114903. Link

- $# Xin, H., **Khan, N. A.,** Liu, X., Jiang, X., Sun, F., Zhang, S., Sun, Y., Zhang, Y., Li, X. (2021). Profiles of odd- and branched-chain fatty acids and their correlations with rumen fermentation parameters, microbial protein synthesis, and bacterial populations based on pure carbohydrate incubation in vitro. ***Frontiers in Nutrition***, 8: 733352. Link

- *$ **Khan, N. A.,** Sulaiman, S. M., Hashmi, M. S., Rahman, S. U., Cone, J. W. (2021). Chemical composition, ruminal degradation kinetics, and methane production (in vitro) of winter grass species. ***Journal of the Science of Food and Agriculture***, 101: 179–184. Link

- *# Xin, H., **Khan, N. A.,** Yu, P. (2022). Evaluation of the nutritional value of faba beans with high and low tannin content for use as feed for ruminants. ***Journal of the Science of Food and Agriculture***, 102: 3047–3056. Link

- * Sufyan, A., Ahmad, N., Shahzad, F., Embaby, M. G., AbuGhazaleh, A., **Khan, N. A.** (2022). Improving the nutritional value and digestibility of wheat straw, rice straw and corn cob through solid state fermentation using different *Pleurotus* species. ***Journal of the Science of Food and Agriculture***, 102: 2445–2453. Link

- Bedaso, N. H., Bezabih, M., Kelkay, T. Z., Adie, A., **Khan, N. A.,** Jones, C. S., Mekonnen, K., Woldemeskel, E. (2022). Effect of fertilizer inputs on productivity and herbage quality of native pasture in degraded tropical grasslands. ***Agronomy Journal***, 114: 216–227. Link

- Khan, R. U., Naz, S., Raziq, F., Qudratullah, Q., **Khan, N. A.,** Laudadio, V., Tufarelli, V., Ragni, M. (2022). Prospects of organic acids as safe alternative to antibiotics in broiler chickens diet. ***Environmental Science and Pollution Research***, 29: 32594–32600. Link

- Gul, Z., Ali, A., Leghari, S. K., Kakar, A. U. R., Khan, M., Muhammad, J., **Khan, N. A.,** Rehman, Z. U., Kamal, R., Ali, I. (2022). Daily dose standardization based on essential and nonessential trace element presence in *Berberis baluchistanica* Ahrendt bark, leaf, and root. ***BioMed Research International***, Article ID 6811613. Link

- Ullah, F., Tahir, M., Naz, S., **Khan, N. A.,** Khan, R. U. (2022). In vitro efficacy and ameliorating effect of *Moringa oleifera* on growth, carcass, stress and digestibility of nutrients in *Escherichia coli*-infected broilers. ***Journal of Applied Animal Research***, 50: 118–124. Link

- Jawad, M., Ali, M., Qasim, S., Akbar, A., **Khan, N. A.,** Sadiq, M. B. (2022). Determination of phenolic compounds and bioactive potential of plum (*Prunus salicina*) peel extract obtained by ultrasound-assisted extraction. ***BioMed Research International***, Article ID 7787958. Link

- Aziz, S., Akbar, A., Gul, Z., Sadiq, M. B., Achakzai, J. K., **Khan, N. A.,** Samad, A., Rehman, Z. U., Ali, I. (2022). Functional potential and chemical profile analysis of propolis oil extracted from propolis of Balochistan. ***Journal of Food Quality***, Article ID 4782813. Link

- * Jiang, M., Ma, Y., Khan, N., Khan, M. Z., Akbar, A., Khan, R. U., Kamran, M., **Khan, N. A.** (2022). Effect of spring maize genotypes on fermentation and nutritional value of whole plant maize silage in Northern Pakistan. ***Fermentation***, 8: 587. Link

- Khan, N. U., Usman, T., Sarwar, M. S., Ali, H., Gohar, A., Asif, M., Sultana, N., **Khan, N. A.,** Mobashar, M., Asar, A. S., Wanapat, M. (2022). The prevalence, risk factors analysis and evaluation of two diagnostic techniques for the detection of *Cryptosporidium* infection in diarrheic sheep from Pakistan. ***PLoS ONE***, 17: e0269859. Link

- * Khan, N., Khan, S., Israr, M., Hilal, M. G., Ibrahim, M. N. M., **Khan, N. A.** (2022). Comparing Azikheli buffaloes with Nili Ravi buffaloes for morphometry, productivity and reproductivity. ***Pakistan Journal of Agricultural Sciences***, 59(4): 693–701. Link

- *$ **Khan, N. A.,** Khan, K., Khan, R. U., Khan, H., Khan, R., Bezabih, M., Akbar, A. (2022). Effect of supplementation of oilseeds co-products on production performance and fatty acids composition of Beetal goats. ***Tropical Animal Health and Production***, 54: 407. Link

- Ullah, A., Khan, R., Suhail, S. M., Ahmad, I., Khan, F. A., Qureshi, M. S., **Khan, N. A.,** Ayari-Akkari, A., Ahmed, D. A. E. M. (2022). Bioinformatics analysis and the association of polymorphisms within the caprine *GDF9* gene promoter with economically useful traits in Damani goats. ***Animal Biotechnology***, 34: 3449–3460. Link

- * Khan, R. U., Naz, S., Ullah, H., **Khan, N. A.**, Laudadio, V., Ragni, M., Piemontese, L., Tufarelli, V. (2023). Dietary vitamin D: Growth, physiological and health consequences in broiler production. ***Animal Biotechnology***, 34: 1635–1641. Link

- Gul, Z., Akbar, A., Naseem, M., Achakzai, J. K., Rehman, Z. U., **Khan, N. A.** (2023). Phytonutrient and antinutrient components profiling of *Berberis baluchistanica* Ahrendt bark and leaves. ***Journal of King Saud University - Science***, 35: 102517. Link

- Akbar, A., Gul, Z., Hussain, N., Al Haddad, A. H., **Khan, N. A.,** Sadiq, M. B., Sher, H. (2023). High throughput biochemical profiling, and functional potential analysis for valorization of grape peduncles. ***Scientific Reports***, 13: 8328. Link
- Ahmad, A., Hashmi, M. S., Durrani, Y., **Khan, N. A.,** Khan, M. R., Siddiqi, M. Z., Riaz, A., Alam, M., Rahman, W. U. (2023). Synergy of 1-MCP and hypobaric treatments prevent fermented flavour and improve consumers' acceptability of 'Shughri' pear. ***Journal of Food Science and Technology***, 60: 200–210. Link
- Huang, Q., Wang, S., Yang, X., Han, X., Liu, Y., **Khan, N. A.,** Tan, Z. (2023). Effects of organic and inorganic selenium on selenium bioavailability, growth performance, antioxidant status and meat quality of a local beef cattle in China. ***Frontiers in Veterinary Science***, 10: 1171751. Link
- Yuan, C., Wang, S., Gebeyew, K., Yang, X., Tang, S., Zhou, C., **Khan, N. A.,** Tan, Z., Liu, Y. (2023). A low-carbon high inulin diet improves intestinal mucosal barrier function and immunity against infectious diseases in goats. ***Frontiers in Veterinary Science***, 9: 1098651. Link
- # Nazar, M., Xu, Q., Zahoor Ullah, M. W., **Khan, N. A.,** Iqbal, B., Zhu, D. (2023). Integrated laccase delignification with improved lignocellulose recalcitrance for enhancing enzymatic saccharification of ensiled rice straw. ***Industrial Crops and Products***, 202: 116987. Link
- Khan, M. T., Ahmad, N., **Khan, N. A.,** Ullah, H. A., Ullah, S. (2023). Inclusion of *Pleurotus florida* (fungus) treated straw in the diet affects performance and feed efficiency traits in calves: A case study on Ravi buffalo. ***Tropical Animal Health and Production***, 55: 390. Link
- *$# **Khan, N. A.,** Khan, N., Tang, S., Tan, Z. (2023). Optimizing corn silage quality during hot summer conditions of the tropics: Investigating the effect of additives on in-silo fermentation characteristics, nutrient profiles, digestibility and post-ensiling stability. ***Frontiers in Plant Science***, 14: 1305999. Link
- $ Zhang, X., **Khan, N. A.,** Yao, E., Kong, F., Chen, M., Khan, R. U., Liu, X., Zhang, Y., Xin, H. (2024). Effect of growing regions on morphological characteristics, protein nutrition, rumen degradation and molecular structures of various whole-plant silage corn cultivars. ***PLoS ONE***, 19: e0282547. Link
- *# Sufyan, A., **Khan, N. A.,** Akbar, A., Tang, S., Tan, Z. (2024). Scaling-up fungal pretreatment of lignocellulose biomass: Impact on nutritional value, ruminal degradability, methane production, and performance of lactating dairy cows. ***Livestock Science***, 285: 105499. Link
- *# Sufyan, A., **Khan, N. A.,** Ahmad, N., AbuGhazaleh, A., Tang, S., Tan, Z. (2024). Novel techniques for the mass scale production of nutritionally improved fungal cultured lignocellulosic biomass for ruminants feeding. ***Journal of the Science of Food and Agriculture***, 104: 2215–2224. Link
- # Liu, E. Y., Wang, S., Wang, S., **Khan, N. A.,** Zhou, X., Tang, S., Zhou, C., Tan, Z., Liu, Y. (2024). Bacterial inoculants and enzymes-based silage cocktails boost the ensiling quality of biomasses from reed, corn and rice straw. ***Chemical and Biological Technologies in Agriculture***, 11: 29. Link
- *$# **Khan, N. A.,** Khan, M., Sufyan, A., Saeed, A., Lin, S., Wang, S., Nazar, M., Tan, Z., Liu, Y., Tang, S. (2024). Biotechnological processing of sugarcane bagasse through solid state fermentation with white rot fungi into nutritionally rich and digestible ruminant feed. ***Fermentation***, 10: 181. Link
- * Farooq, K., Sultan, A., Shah, A. A., Khan, R. U., Khan, R., Yasmeen, G., **Khan, N. A.** (2024). Optimizing the utilization of maize silage in forage blends-based rations to improve production performance and reduce methane emission from fattening calves. ***International Journal of Agricultural and Biological Engineering***, 17: 75–81. Link
- * Khan, N., Shah, T. A., Akhtar, H. M. S., Salamatullah, A. M., Bourhia, M., Mekonnen, A. B., Khan, M. Z., Nazar, M., **Khan, N. A.** (2024). Influence of maize genotypes and harvest stages on in-silo fermentation

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- Wang, S., Zhang, Q., Sun, L., Pang, H., Li, P., **Khan, N. A.** (2024). Evaluation of preharvest and postharvest factors on forage crop quality, physiology, and ensiling characteristics. ***Frontiers in Plant Science***, 15: 1421788. Link
- # Nazar, M., Tian, J., Wang, X., Wang, S., **Khan, N. A.**, Cheng, Y., Zhang, W., Xu, N., Liu, B., Ding, C. (2025). Effect of biological lignin depolymerization on rice straw enzymatic hydrolysis, anaerobic fermentation characteristics and in vitro ruminal digestibility. ***International Journal of Biological Macromolecules***, 305: 141664. Link
- # Nazar, M., Tian, J., Wang, X., Wang, S., **Khan, N. A.,** Cheng, Y., Zhang, W., Xu, N., Liu, B., Ding, C. (2025). Biological delignification and anaerobic fermentation of wheat straw: A promising approach for sustainable utilization of crop straw bioresources. ***Industrial Crops and Products***, 227: 120839. Link
- # Liu, Y., Zhang, S., Liao, J., **Khan, N. A.,** Tang, S., Zhou, C., Tan, Z., Salem, A. Z. M. (2025). Enhancing fermentation quality and fiber decomposition of *Phragmites australis* silage by introducing *Bacillus subtilis* and lactic acid bacteria consortia. ***Frontiers in Veterinary Science***, 12: 1557614. Link
- # Liu, E. Y., Wang, S., Zhang, B., **Khan, N. A.**, Tang, S., Zhou, C., He, Z., Tan, Z., Liu, Y. (2025). Harnessing advanced machine learning models for precise prediction of dietary, environmental, and health risk factors affecting lactation performance in large dairy herds. ***Computers and Electronics in Agriculture***. (Accepted).

Conference Papers

- **Khan, N. A.,** Cone, J. W., Pellikaan, W. F., Fievez, V., Hendriks, W. H. (2008). Improving milk fatty acid profile of dairy cows through silages. *33rd Meeting of Dutch Speaking Nutrition Researchers (NVO)*, Wageningen, The Netherlands, April 25, pp. 53–54. Published by Animal Nutrition Group, Wageningen University. Link
- **Khan, N. A.,** Cone, J. W., Hendriks, W. H. (2009). Stability of fatty acids in grass and maize silages after exposure to air during the feed out period. *34th Animal Nutrition Research Forum*, ILVO Animal Sciences, Melle, Belgium, April 3, pp. 13–14. Link
- **Khan, N. A.,** Cone, J. W., Hendriks, W. H. (2009). Stability of fatty acids in grass and maize silages after exposure to air during the feed out period. XI International Symposium on Ruminant Physiology, *Clermont-Ferrand, France*, September 6–9, pp. 242–243. Published by Wageningen Academic Publishers. Link

- **Khan, N. A.,** Cone, J. W., Fievez, V., Hendriks, W. H. (2011). Causes of variation in fatty acid content and composition in grass silages. *36th Animal Nutrition Research Forum*, Leuven, Belgium, April 19, pp. 73–74. Published by Faculteit Bio-ingenieurswetenschappen, KU Leuven. Link
- Zom, R. L. G., Goselink, R. M. A., **Khan, N. A.,** Bannink, A. (2012). Effect of harvest maturity of maize silage on dairy cow performance and enteric methane emission estimated using the Dutch Tier 3 approach. *24th General Meeting of the European Grassland Federation*, Lublin, Poland, June 3–7, pp. 643–645. Published by Polish Grassland Society. Link
- **Khan, N. A.,** Habib, G., Rehman, A. U., Suleman, M., Ullah, G. (2012). Evaluation of tree leaves as crude protein supplement to the low-quality diets of dairy goats. *First Asia Dairy Goat Conference*, Kuala Lumpur, Malaysia, April 9–12, pp. 88–90. Published by University of Putra Malaysia and FAO. Link
- Khan, S., **Khan, N. A.,** Habib, G., Qureshi, M. S., Sultan, A. (2012). Assessment of *Grewia oppositifolia* leaves as crude protein supplement to low-quality diets of goats. *First Asia Dairy Goat Conference*, Kuala Lumpur, Malaysia, April 9–12, pp. 91–92. Published by University of Putra Malaysia and FAO. Link
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- **Khan, N. A.,** Cone, J. W. (2017). Nutritional value of maize silage in relation to dairy cow performance and milk quality: A meta-analysis. *International Livestock Nutrition Summit*, University of Veterinary and Animal Sciences, Lahore, Pakistan, February 21–22, pp. 9–10. Link
- Khan, N., **Khan, N. A.,** Ahmad, N., Qureshi, M. S., Ibrahim, M. N. M. (2017). Screening of traditional and novel spring maize cultivars for silage production. *International Livestock Nutrition Summit*, University of Veterinary and Animal Sciences, Lahore, Pakistan, February 21–22, pp. 27–28.
- Amaan, M., **Khan, N. A.,** Alam, S., Saleem, M., Cone, J. W. (2017). Chemical composition, ruminal degradation kinetics and methane production (in vitro) of summer grass species from Northern Pakistan. *International Livestock Nutrition Summit*, University of Veterinary and Animal Sciences, Lahore, Pakistan, February 21–22, pp. 40–41.Link
- Shaha, A., **Khan, N. A.**, Ahmad, N., Ibrahim, M. N. M. (2017). Effect of seed rate and harvest intervals on dry matter yield, chemical composition and digestibility (in vitro) of *Rhodes grass (Chloris gayana L.)*. *International Livestock Nutrition Summit*, University of Veterinary and Animal Sciences, Lahore, Pakistan, February 21–22, pp. 72–73.

Conference Abstracts

- **Khan, N. A.,** Cone, J. W., Hendriks, W. H. (2009). Stability of fatty acids in grass and maize silages after exposure to air during the feed out period. *60th Annual Meeting of the European Association for Animal Production*, Barcelona, Spain, August 24–27, p. 312. Published by Wageningen Academic Publishers. Link
- **Khan, N. A.,** Cone, J. W., Fievez, V., Hendriks, W. H. (2011). Causes of variation in fatty acid content and composition in grass silages. *8th International Symposium on the Nutrition of Herbivores (ISHN8)*, Aberystwyth, Wales, UK, September 6–9, p. 545. Published in *Advances in Animal Biosciences*, Vol. 2 by Cambridge University Press. Link

- **Khan, S.,** Hussain, S., Sultan, A., Chand, N., Ullah, R., Khan, N. A. (2012). Antibiotic residues in poultry products. *XXIV World Poultry Congress*, Salvador, Brazil, August 5–9, p. 56. Published by World Poultry Science Association in *World Poultry Science Journal* (Supplement 1).
- **Khan, N. A.,** Abeysekara, S., Christensen, D. A., Huang, X., Yu, P. (2014). Relationship between protein structural characteristics and the supply of metabolizable protein to dairy cattle from new cool-season forage corn varieties in Western Canada. *Joint Annual Meeting (JAM) of ASAS–ADSA–CSAS*, Kansas City, Missouri, USA, July 20–24, p. 552. Published in *J. Anim. Sci.* Vol. 92, E-Suppl. 2, and *J. Dairy Sci.* Vol. 97, E-Suppl. 1. Link
- Peng, Q., **Khan, N. A.,** Wang, Z., Huang, X., Yu, P. (2014). Relationship of protein structural conformation to protein functional property, buffer and water solubility, rumen digestive behaviours, and intestinal availability of common feeds in ruminants. *Joint Annual Meeting (JAM) of ASAS–ADSA–CSAS*, Kansas City, Missouri, USA, July 20–24, p. 801. Link
- Yan, X., **Khan, N. A.,** Huang, X., Yu, P. (2014). Microwave irradiation induced changes in protein inherent structure, protein chemical profile, protein subfractions and digestive behavior of different types of new hulless barley in the rumen and intestine of dairy cows. *Joint Annual Meeting (JAM) of ASAS–ADSA–CSAS*, Kansas City, Missouri, USA, July 20–24, pp. 835–836. Link
- Saman, A., David, A. C., **Khan, N. A.,** Xuewei, H., Yu, P. (2014). Metabolic characteristics and truly metabolizable protein supply to dairy cattle from new cool-season forage corn varieties in Western Canada. *Joint Annual Meeting (JAM) of ASAS–ADSA–CSAS*, Kansas City, Missouri, USA, July 20–24, p. 892. Link
- **Khan, N. A.,** Brooker, H., Ban, J., Yu, P. (2015). Effect of heating method on alteration of protein molecular structure in flaxseed: Relationship with changes in protein subfraction profile and digestion in dairy cows. *Joint Annual Meeting (JAM) of ASAS–ADSA–CSAS*, Orlando, Florida, USA, July 12–16, p. 482. Link
- **Khan, N. A.,** Brooker, H., Ban, J., Yu, P. (2015). Physico-molecular structures and metabolic characteristics of protein in brown and yellow flaxseed with altered nutrient traits for dairy cattle. *Joint Annual Meeting (JAM) of ASAS–ADSA–CSAS*, Orlando, Florida, USA, July 12–16, p. 765. Link
- **Khan, N. A., Farooq, M. W., Ahmad, N., Cone, J. W., Hendriks, W. H.** (2015). Fatty acids contents and composition of tropical forages. *3rd International Workshop on Dairy Science Park*, Peshawar, Pakistan, November 16–18, pp. 50–51. Published by Dairy Science Park and The University of Agriculture Peshawar. Link
- **Khan, N. A.,** Suliman, S. M., Ahmad, N., Qureshi, M. S. (2015). Chemical composition, ruminal degradation kinetics and methane production potential of winter forages: effect of forage species and harvest maturity. *3rd International Workshop on Dairy Science Park*, Peshawar, Pakistan, November 16–18, pp. 51–52. Link
- Ali, M., Nawaz, H., Fahad, M., **Khan, N. A.** (2015). Assessment of in situ rumen degradation characteristics of indigenous feed ingredients in buffaloes. *3rd International Workshop on Dairy Science Park*, Peshawar, Pakistan, November 16–18, pp. 52–53. Link
- Ali, M., Mehboob, H. A., Mirza, M. A., Raza, H., Suleman, M., **Khan, N. A.** (2015). Effect of hydrolysable tannin supplementation on milk yield and composition of dairy cows. *3rd International Workshop on Dairy Science Park*, Peshawar, Pakistan, November 16–18, pp. 81–82. Link
- Mustafa, H., **Khan, N. A.,** Khan, M. T. (2015). Buffalo status in Pakistan: a meta-analysis. *3rd International Workshop on Dairy Science Park*, Peshawar, Pakistan, November 16–18, p. 82. Link
- Khan, M. T., Ullah, I., **Khan, N. A.,** Ain, N. U., Ajmal, A., Mustafa, H. (2015). Biotechnology and dairy production. *3rd International Workshop on Dairy Science Park*, Peshawar, Pakistan, November 16–18, pp. 82–83. Link

- Inam, M., Khan, S., Sultan, S., **Khan, N. A.** (2017). Effect of *Saccharomyces cerevisiae* incorporation as partial replacement for soybean meal on overall performance of broilers at finisher phase. *4th International Conference on Dairy Science Park*, Selçuk Üniversitesi, Konya, Turkey, November 1–5, p. 151. Link
- Nadar, K., **Khan, N. A.,** Ahmad, N., Qureshi, M. S., Ibrahim, M. N. M. (2017). Effect of spring maize genotypes harvested at different maturity stages on yield, nutrient composition, fibre digestibility and silage fermentation quality. *4th International Conference on Dairy Science Park*, Selçuk Üniversitesi, Konya, Turkey, November 1–5, p. 217. Link
- Nadar, K., **Khan, N. A.,** Ahmad, N., Qureshi, M. S., Ibrahim, M. N. M. (2017). Screening of traditional and novel summer maize cultivars at different harvest maturity for silage production in Northern areas of Pakistan. *4th International Conference on Dairy Science Park*, Selçuk Üniversitesi, Konya, Turkey, November 1–5, p. 218. Link
- Sulaiman, S. M., **Khan, N. A.,** Rehman, S. U., Cone, J. W. (2018). Chemical composition, ruminal degradation kinetics and methane production (in vitro) of winter grass species from Northern Pakistan. *7th International and 16th National Conference on Plant Resources: Current Trends, Challenges and Solutions*, Islamia University, Peshawar, March 23–26, p. 10. Published by Botanical Society of Pakistan and Islamia College Peshawar.
- **Khan, N. A.,** Rehman, S. U., Saleem, M., Cone, J. W. (2018). Chemical composition, ruminal degradation kinetics and methane production (in vitro) of summer grass species from Northern Pakistan. *7th International and 16th National Conference on Plant Resources: Current Trends, Challenges and Solutions*, Islamia University, Peshawar, March 23–26, pp. 10–11. Published by Botanical Society of Pakistan and Islamia College Peshawar.
- Shah, A., **Khan, N. A.,** Ibrahim, M. N. M. (2018). Effect of seed rate and harvest intervals on dry matter yield, chemical composition and digestibility (in vitro) of *Rhodes grass (Chloris gayana L.)*. *7th International and 16th National Conference on Plant Resources: Current Trends, Challenges and Solutions*, Islamia University, Peshawar, March 23–26, p. 14. Published by Botanical Society of Pakistan and Islamia College Peshawar.
- Khan, K., Ullah, I., **Khan, N. A.** (2018). Nutritive value of mulberry (*Morus alba*) leaves for fattening rabbits (*Oryctolagus cuniculus*). *7th International and 16th National Conference on Plant Resources: Current Trends, Challenges and Solutions*, Islamia University, Peshawar, March 23–26, p. 156. Published by Botanical Society of Pakistan and Islamia College Peshawar.
- **Khan, N. A.,** Rehman, S. U., Saleem, M., Cone, J. W. (2019). Methane emission from summer grass species from Northern Pakistan: implication for sustainable animal production. *8th International Conference on Environmentally Sustainable Development (ESDev-2019)*, COMSATS University, Abbottabad Campus, Pakistan, August 21–23, p. 70. Published by COMSATS University Islamabad.
- **Khan, N. A.,** Sufyan, A., Tan, Z., Tang, S. (2024). Promising biological conversion of lignocellulosic biomass to digestible ruminant feed with white rot fungi. *4th International Symposium on Sustainable Agriculture for Subtropical Regions (ISSARS-4)*, Ecosystem Management and Agriculture Green Development in Subtropical Region, Changsha, China, June 21–24, p. 91. Published by Institute of Subtropical Agriculture, Chinese Academy of Sciences.

Books and Book Chapters

Books Edited

- **Wang, S., Zhang, Q., Sun, L., Pang, H., Li, P., Khan, N. A.**, eds. (2024). *Evaluation of Preharvest and Postharvest Factors on Forage Crop Quality, Physiology, and Ensiling Characteristics*. Lausanne: Frontiers Media SA. DOI: 10.3389/879-2-8325-4957-5

Book Chapters Authored

- **Khan, N. A., Theodoridou, K., Yu, P.** (2015). Role of fiber in dairy cow nutrition and health. In: *Dietary Fiber: Production Challenges, Food Sources and Health Benefits*. Ed. Marvin E. Clemens. New York, USA: Nova Science Publishers, pp. 69–91. ISBN: 978-1-63463-655-1. Link

Patents

Patent granted

- Ahmad, S., Hashmi, M.S., Khan N. A. et al. A method to develop Potato-milk using almond and soybean flour. Patent Application No. 21/2023. IPO, Pakistan. https://www.ipo.gov.pk/system/files/230125.pdf

Patent submitted

- Filed a patent on "Production of nutritionally-improved fungal biodegraded wheat straw for ruminants using lime pasteurization" for possible acceptance to In-charge IPO, Regional Office IPO, Plot No. 24, Phase-V, Hayatabad dated 26-06-2023.

Academic Teaching & Graduate Supervision

Courses Taught (2012–2025):

I have developed and taught over 10 distinct courses, reflecting pedagogical versatility and curriculum development expertise. Key subjects include:

- Ruminant Nutrition (Introductory & Advanced – DVM, MSc, PhD)
- Nutrition, Physiology & Biochemistry
- Advanced Animal Feed Industry
- Protein Metabolism & Bioenergetics
- Mineral Nutrition
- Feeds & Feeding Practices
- Animal Feed Resources, Forage Production & Conservation
- Rumen Fermentation & Microbial Reactions
- Veterinary Dietetics
- Advanced Analytical Techniques in Animal Nutrition
- Research Methods & Scientific Communication in Animal Nutrition

Graduate Student Supervision

Supervised **10 PhD** and **83 MSc** students to successful thesis completion, with **8 PhD** and **24 MSc** students currently under supervision. This ongoing commitment reflects my dedication to nurturing the research

capabilities and leadership potential of the next generation of researchers, empowering them to make meaningful contributions and drive innovation in animal nutrition

PhD Students Supervised to Graduation

- Nadar Khan (2019). Optimizing the nutritive value of maize silages in relation to dairy cow performance and milk quality.
- Syed Muhammad Sulaiman (2019). Exploiting the genetic diversity of traditional and novel cultivars/germplasm of wheat to optimize the nutritional value of wheat forage and wheat straws for ruminant livestock.
- Khalid Farooq (2022). Optimizing the utilization of maize silage in smallholders and commercialized dairy and fattening rations in relation to feed-use efficiency, animal performance, and farm profitability.

PhD Students Co-Supervised to Graduation

- Kamran Khan (2016). Growth traits, production performance, and meat quality of indigenous rabbits of Khyber Pakhtunkhwa, Pakistan.
- Rafiullah Khan (2017). Replacement of soybean meal with silkworm meal in poultry rations.
- Muhammad Inam Khan (2018). Effect of yeast (*Saccharomyces cerevisiae*) incorporation as partial replacement for soybean meal in broilers.
- Naseer Ahmad (2018). Comparative growth performance, immune status, carcass, and egg quality traits of Naked Neck, Rhode Island Red, and Black Australorp chickens in open-house production systems.
- Abu Bakar Sufyan (2020). Improving the feeding value of poor-quality straws through fungal treatment: impact on production performance of small ruminants.
- Muhammad Tahir (2024). Investigating the potential of white rot fungi-treated low-quality roughages as a basal diet for beef cattle in Northern Pakistan.
- Saima Bibi (2024). Tannin extraction from bio-materials: application on ensiled clover for improving its fermentation and feeding quality.

PhD Students Currently Under Supervision

- Rehana Yasmeen (2024). Quantifying the nutritional value, digestibility (*in vitro*), and methane production potential of indigenous fodder trees.
- Ayesha (2024). Bioprocessing of maize stover with white rot fungi to nutritionally enrich ruminant feed.
- Mehrullah Khan (2024). Optimizing the nutritive value of oat silage in relation to dairy cow performance and milk quality.
- Muhammad Naseem (2024). Exploiting the potential of chestnut hydrolysable tannins to reduce protein degradability in dairy rations in Pakistan: impact on feed utilization efficiency and production performance of dairy and beef cattle.

PhD Students Currently Under Co-Supervision

- Naveed Iqbal (2024). Investigating detoxification potential of extracts of *Trachyspermum ammi* and their application in Sahiwal cows.
- Fath Ullah (2024). Extraction and evaluation of antimicrobial peptides from black soldier fly as growth promoter, antioxidant, and alternative to antibiotics in broiler feed under different conditions.
- Rohban Hameed (2024). Investigating the potential of extruded rapeseed meal as a sustainable protein substitute for broiler chicks.

- Noureen Nawaz (2024). Phytogenic effect of ethanolic herbal plant extracts on growth performance, blood biochemistry, immune status, gut health, and nutrient digestibility in broiler chicks.

MSc Students Supervised to Graduation

- Shahid Hussain (2012). Improving the feeding value of low-quality roughages with the help of white rot fungi (Pleurotus ostreatus).
- Muhammad Waseem Farooq (2012). Quantifying the nutritional value and fatty acid content of indigenous forages.
- Syed Muhammad Suliman (2014). Chemical composition, ruminal degradation kinetics, and methane production potential of winter forages: effect of forage species and maturity.
- Muhammad Shafi-Ullah (2015). Digestion of various fiber sources in rabbits.
- Muhammad Saqib (2015). Nutritive value, protein subfraction composition, and digestibility (in vitro) of indigenous legume seeds.
- Mian Nazir Shah (2015). Nutritive value of Rhodes grass: effect of genotype, soil type, and harvest maturity.
- Asif Shah (2015). Effect of seed rate and harvest intervals on dry matter yield, chemical composition, and digestibility (in vitro) of Rhodes grass.
- Zeenat Hussain (2016). Effect of step-wise replacement of berseem fodder with maize silage in traditional dairy ration on milk production and milk composition of buffalo.
- Saeed-ul-Islam (2016). Effect of seed rate and regrowth intervals on biomass yield and nutritive value of Rhodes grass.
- Mian Amir Seyab (2016). Effect of cultivars and post-silking maturity on yield, nutrient composition, and cell wall degradability (*in vitro*) of maize stovers.
- Syed Asad Khan (2016). Investigating the potential of annual ryegrass as winter fodder in Northern Pakistan: effect of soil type, growing conditions, and cultivars.
- Bashir Ahmad (2017). Effect of maize silage and concentrate types on milk production and composition of Holstein dairy cows.
- Muhammad Amin (2017). Nutritive value and ruminal degradation kinetics of fodder from commonly grown wheat cultivars in Khyber Pakhtunkhwa.
- Muhammad Zeeshan (2017). Effect of supplementing oilseed cakes on milk yield and milk fat composition of lactating Damani goats.
- Faizur Rehman (2017). Nutritive value and ruminal degradation kinetics of straws from commonly grown wheat cultivars in Khyber Pakhtunkhwa.
- Shah Saood (2018). Ruminal degradation kinetics of wheat straws: variation among selected high-yielding novel genotypes.
- Mujahid Khan (2018). Evaluation of nutritional value and methane production potential of indigenous forage tree leaves.
- Ishfaq Ali (2018). Ruminal degradation kinetics of wheat forage: variation among selected high-yielding novel genotypes.
- Muhammad Bilal (2018). Weekly changes in nutrient composition and ruminal degradation characteristics of berseem (*Trifolium alexandrinum L.*) from day 14 to day 56 of second regrowth.
- Syed Ziaud Din (2019). Changes in whole crop yield, nutrient composition, and digestibility (*in vitro*) of spring maize hybrids during post-flowering maturity.

- Muhammad Shiraz (2020). Changes in whole crop yield, nutrient composition, and digestibility (*in vitro*) of summer maize hybrids during post-flowering maturity.
- Sherazam Khan (2020). Influence of nitrogen level on annual ryegrass (*Lolium multiflorum*) biomass yield, nutritional value, and digestibility under Swat Valley conditions.
- Rahat Shah (2020). Changes in stover and grain yield, chemical composition, and digestibility (*in vitro*): effect of spring maize hybrids and post-flowering maturity.
- Amir Gaffar Wani (2020). Ruminal degradation kinetics of dry matter, fiber, and protein in maize silages: effect of autumn hybrids and inoculum types.
- Tanveer Ahmad Shah (2020). Effect of different inoculants on fermentation quality, nutritive value, and digestibility (*in vitro*) of silage from spring maize.
- Mohammad Ishaq (2021). Effect of silage additives on ruminal degradation kinetics of dry matter, crude protein, and NDF in maize silages.
- Atta-Ur-Rehman (2021). Quantifying the optimum proportion of maize silage in dairy rations in terms of production performance and concentrate sparing potential.
- Muhammad Kashif (2021). Effect of urea treatment on chemical composition and ruminal degradation kinetics of wheat straw ensiled with or without molasses.
- Aamir Javed (2021). Effect of urea treatment on chemical composition and ruminal degradation kinetics of rice straw ensiled with or without molasses.
- Akhtar Ullah (2021). Effect of urea treatment on ruminal degradation kinetics of wheat straw: comparison of five novel germplasm and a traditional cultivar.
- Muhammad Haris Khan (2021). Effect of urea treatment and ensiling with or without yogurt inoculation on nutritive value and ruminal degradation kinetics of wheat straws.
- Khadim Hussain (2021). Effect of additives and ensiling duration on silage fermentation quality, nutritive value, and aerobic stability: a study on summer maize genotypes.
- Shabir Ahmad (2022). Ruminal degradation kinetics of dry matter, fibre, and protein in maize silages: effect of spring hybrids.
- Muhammad Sabir Fida (2022). Ruminal degradation kinetics of discarded potatoes: effect of urea treatment.
- Natasha Ghafoor (2022). Effect of rumen-protected lysine and methionine on production performance of lactating Nili-Ravi buffaloes (*Bubalus bubalis*).
- Muhammad Haris (2022). Optimizing the nutritional value of cottonseed hulls for ruminants using white rot fungi: effect of incubation time and fungal species.
- Kashif ur Rehman (2022). Effect of white rot fungi on selective lignin degradation, nutrient losses, and ruminal degradability of wheat straw.
- Mussayyab Khan Khalil (2022). Bioprocessing of sugarcane bagasse into nutritionally rich and digestible ruminant feed.
- Shakir-ullah-Khan (2022). Effect of white rot fungi on selective lignin degradation, nutrient losses, and ruminal digestibility of rice straw.
- Muhammad Muhsin (2022). Effect of supplementing butyric acid levels on digestibility, intestinal health, growth performance, and feed efficiency of crossbred calves.
- Yasir Ali (2022). Solid-state bioprocessing of peanut hulls into digestible and nutritious ruminant feed.
- Farhad Khan (2022). Upgrading feeding value of corn cobs using white rot fungi: optimizing lignin degradation and fibrous carbohydrate availability.

- Ruqaya Qayum (2022). Solid-state bioprocessing of corn stovers into digestible and nutritious ruminant feed.
- Ahmad Ali (2022). Effect of different levels of coated butyric acid on digestibility, health, growth, and feed utilization in calves.
- Awais Akhunzada (2023). Effect of urea with/without molasses on intake, production, and blood profile of Beetal goats.
- Tehreem Alam (2024). Effect of substrate particle size and incubation time on lignin degradation, nutrient losses, and ruminal digestibility of rice straw.
- Muhammad Shoaib (2024). Replacing maize grain with potatoes in TMR: effects on intake, growth, digestibility, and blood of lambs.
- Muhammad Yousaf (2024). Comparative supplementation of oak (Quercus baloot) leaves and cottonseed meal on milk yield and composition in Waziri sheep.
- Hussain Ahmad (2024). Nutrient composition, mineral profile, and digestibility of new hybrid sorghum.
- Waqas Saeed (2024). Biomass yield, morphology, nutritional value, and digestibility of a novel maize hybrid.
- Inzamam ul Haq (2024). Nutritional value of new sorghum hybrid silage for dairy cows.
- Ahmad Shah (2024). Nutritional value of novel hybrid maize (Jumbo) silage.
- Ashmal Saeed Akram (2024). Fungal upgrading of rice straw for ruminants: effect of manganese and linoleic acid supplementation.
- Sana Ullah (2025). Concentrate levels in Rhodes grass hay diet: impact on intake and milk production in late lactating Saanen goats.
- Ariba Fatima (2025). Fungal upgrading of wheat straw for ruminants: effect of urea and linoleic acid supplementation.

MSc (Hons.) Students Currently Under Supervision

- Akhter Ayub (2025). Nutritional value of fodder from dual-purpose cereal crops.
- Abdul Basit (2025). Nutritional value of alfalfa fodder for dairy cows: effect of nitrogen fertilization levels and irrigation intervals.
- Abdul Qadeer (2025). Strategic supplementation of Withania coagulans in the diet of Sulaimani goats: effect on feed intake, digestibility, and weight gain.
- Sana Salahuddin (2024). Combined effect of fungal treatment and ensiling on nutritional value of wheat straw.
- Fayaz Khan (2024). Effect of Withania coagulans supplementation on feed intake, milk yield, and milk composition of lactating Beetal goats.
- Muhammad Ayaz (2025). Effect of a blend of functional nutrients and probiotics on production performance of *Holstein Friesian* dairy cows.
- Muhammad Hasanat (2025). Effect of different doses of Glycoline on milk yield in early lactating Holstein Friesian cows.
- Abdur Rahman (2025). Effect of maturity and ensiling duration on nutritional value of ryegrass silage.

MSc (Hons.) Students Co-Supervised to Graduation

- Ihsan Uddin (2013). Replacement of soybean meal with yeast single cell protein in broiler ration.

- Asma Khan (2013). Impact of frying on the stability of fatty acid composition in vegetable oils and ghee.
- Ziaul Islam (2014). Fatty acid profile and cholesterol content of eggs produced under different farming systems.
- Humera Obaid (2014). Production of omega-3 enriched eggs in laying hens using different levels of flaxseed.
- Muslim Ghaffar Khan (2015). Effect of short-chain fatty acids on digestibility and growth performance of broilers.
- Abubakkar Sadiq (2015). Effects of genotype and soil type on nutritional value of irrigated Rhodes grass hay.
- Rehmat Saeed (2015). Quantitative changes in sorghum silage under different nitrogen rates and harvest timings.
- Waqas Alam (2015). Effect of animal blood plasma on broiler performance.
- Rabia Ali (2016). Effect of phytase enzyme on nutrient digestibility, mineral retention, and energy utilization of sorghum in broilers.
- Irfanullah (2017). Effect of sowing date on yield and nutritive value of two oat varieties at various maturity stages.
- Hajmeeda Bibi (2017). Changes in nutritive value and mineral profile of various forage species under different treatments and maturity stages.
- Shakirullah Khan (2017). Effect of replacing normal maize with high-protein maize in broiler ration: performance and profitability of small-scale farmers.
- Abdusamad Khan (2017). Changes in nutritive value and rate of digestion in forage species: effect of plant part, treatment, and maturity.
- Mahboob ul Haq (2018). Effect of a carbohydrate enzyme blend on broiler performance in energy-deficient finisher diets.
- Zooheb Ullah (2018). Comparison of iron and zinc levels for egg enrichment in layers.
- Nauman Inayat (2018). Substitution of soybean meal with mealworm meal in broiler starter diets: effects on performance and carcass traits.
- Mustaq Ahmad (2019). Comparative effects of maize vs. inoculated sorghum silages on intake, digestibility, and milk yield in Azikheli buffaloes.
- Muhammad Younas (2019). Effect of carbohydrate enzyme blend on performance of broilers fed energy-deficient diets at starter phase.
- Muhammad Kaleem (2020). Use of protected slow-release NPN (Optigen) in rations of high-yielding Nili-Ravi buffaloes.
- Naimatullah (2021). Comparative composition and energy value of commercial feeds: impact on broiler growth, carcass traits, and economics.
- Masood Ahmad (2021). Effect of vitamin-mineral premixes on blood parameters, milk yield, and milk composition in Holstein × Jersey cows.
- Shour Ehsan (2021). Moringa oleifera leaf supplementation via urea molasses blocks in lactating buffaloes: effects on milk, hematology, and biochemistry.
- Saima Bibi (2021). Effect of herbal fenugreek preparations on milk yield, composition, and blood metabolites in Jersey × Friesian cows.
- Muhammad Afzal Javed (2022). Live yeast-based toxin binders in Dhanni cows: effects on intake, digestibility, and milk production.

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- Nasr Ullah (2022). Garlic vs. ginger supplementation in Holstein Friesian cows: comparative efficacy on milk quality and blood profile.
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- M. Arsalan Akber (2023). Corn silage from various sources: effects on intake, nutrient composition, milk yield, and organoleptic milk quality in HF cows.
- Wassem Danish (2023). Protexin probiotic supplementation in broilers: impact on growth, digestibility, and carcass traits.
- Sahibzada Muhammad Aqeel (2023). Mannan-oligosaccharide prebiotic levels in broilers: impact on performance and nutrient digestibility.
- Muhammad Shoaib (2023). Effect of forage-to-concentrate ratios on intake, digestibility, and blood profile in Thoroughbred horses.
- Muhammad Huwaitib Waheed (2023). Replacing maize with potato in TMR: impact on production performance of lactating crossbred cows.
- Haroon Rehman (2023). Utilizing groundnut haulms as an alternative forage for Damani sheep to improve milk yield and composition.
- Muhammad Adil Jan (2023). Efficacy of inorganic and organic toxin binders in controlling poultry mycotoxicosis.
- Nadeem Anwar (2024). Bypass fat levels in TMR: effects on intake, digestibility, milk yield, and composition in HF cows.
- Muhammad Altaf Mir (2024). Effect of organic acid blend (propionic, formic, benzoic) on broiler growth, digestibility, and gut health.
- Muhammad Amir (2024). Carom seed (Trachyspermum copticum) supplementation in broilers: impact on growth, digestibility, and blood profile.
- Mustafa Kamal Kakar (2024). Combined effects of protexin and MOS on broiler growth, digestibility, and dressing percentage.
- Adnan Khan (2024). Dietary lecithin emulsifier in broilers: effect on performance, digestibility, blood profile, and carcass traits.
- Ashfaq Ahmad (2024). Strategic feeding of chicory with berseem to improve nitrogen utilization and milk performance in HF cows.
- Abdullah (2024). Ashwagandha supplementation in Damani goats: effects on intake, digestibility, milk yield, and blood profile.
- Noor Zaman (2024). Yeast and macro-mineral supplementation in Azikheli buffaloes to enhance milk production and reduce stress.
- Asif Ghafoor (2024). Effect of plantain (Plantago major) on milk yield, composition, and blood chemistry in HF cows.
- Nigar Ahmed (2024). Impact of a commercial herbal product on broiler growth, digestibility, gut morphology, and dressing percentage.
- Ihtisham ul Haq (2024). Yeast-treatned olive pulp as feed for Damani sheep: effects on production performance.
- Mumtaz Riaz (2024). Cassia fistula leaf supplementation in rabbits: effects on intake, digestibility, and *plasma lipid profile.*

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- **Associate Editor,** *Journal of the Science of Food and Agriculture* (IF: 3.3)
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- **Academic Editor,** *International Journal of Microbiology* (IF: 2.8)
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- Member, Student Grievance Committee
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