

CURRICULUM VITAE

Dr. Arun K. Verma,
Scientist, Goat Products Technology Laboratory,
Central Institute for Research on Goats, Makhdoom, Farah-281122, Mathura, UP, India
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Date of Birth : April 05, 1978

Citizenship : Indian

Marital Status: Married



PRESENT EMPLOYMENT:

- Scientist, Livestock Products Technology, Central Institute for Research on Goats, Makhdoom, Farah Post, Mathura District, UP, India (Since April 2010).

PREVIOUS EMPLOYMENTS:

- Worked as an Assistant Professor, Department of Livestock Products Technology, College of Veterinary and Animal Sciences Udgir, Latur (Maharashtra Animal and Fishery Sciences University, Nagpur, MS) from 22.04.2008 to 19.04.2010.

EDUCATION:

- **Ph.D.**, (2008) **Livestock Products Technology**; Minors: Animal Biochemistry and Veterinary Public Health, Indian Veterinary Research Institute, Izatnagar, Bareilly (UP) – 243 122.
- **M.V.Sc.**, (2005) **Livestock Products Technology**; Minor: Veterinary Public Health, Indian Veterinary Research Institute, Izatnagar, Bareilly (UP) – 243 122.
- **B.V.Sc.**, (2003) College of Veterinary Science and Animal Husbandry Jabalpur (JNKVV) Madhya Pradesh- 482001.

M.V.Sc. Thesis: *“Development of patties from heart and head meat of buffaloes”*

Ph.D. Thesis: *“Studies on incorporation of high dietary fibre extenders in designer chicken nuggets”*

RESEARCH INTERESTS:

- Isolation and microencapsulation of bioactive ingredients and its use in meat products.
- Work towards improvement in sanitary conditions of meat outlets.
- Development of functional meat products.
- Eco-friendly packaging of meat and meat products.

AWARDS/ FELLOWSHIPS:

- Secured 7th rank in All India Entrance Examination for Master in Veterinary Sciences, conducted by Indian Council for Agricultural Research (ICAR) in the year 2003.
- Awarded with Junior Research Fellowship (JRF) by ICAR for pursuing M.V.Sc.
- Awarded Senior Research Fellowship (SRF) by IVRI for pursuing Ph.D. program.
- Recipient of best oral paper presentation at V convention of Indian Meat Science Association and National Symposium on Emerging technological changes to meet the demands of domestic and export meat sector, February 7-9, 2013 at NRC on Meat, Hyderabad.

PATENTS FILED:

- ***Functional Mutton Nugget with Low Salt, Low Fat and High Dietary Fibre***
- ***Process to Develop Functional Chevron Nuggets with Healthier Fatty Acid Profile***

PUBLICATIONS:

International:

Das, A.K., Anjaneyulu, A.S.R., Kondaiah, N. and **Verma A.K.** 2007. Effect of levels of full-fat soy paste on quality of goat meat patties. ***Journal of Food Science and Technology***, 44:3, 323-326.

Das, A.K., Anjaneyulu, A.S.R., **Verma, A.K.** and Kondaiah, N. 2008. Physicochemical, Textural, Sensory Characteristics and Storage Stability of Goat Meat Patties Extended with Full-Fat Soy Paste and Soy Granules. ***International Journal of Food Science and Technology***, 43: 383-392.

- Verma, A.K.,** Lakshmanan, V., Das, A.K. Mendiratta, S.K. and Anjaneyulu, A.S.R. 2008. Physico-chemical and functional quality of buffalo head meat and heart meat. *American Journal of Food Technology*, 3 (2): 134-140.
- Verma, A.K.,** Lakshmanan, V., Das, A.K. Mendiratta, S.K. and Anjaneyulu, A.S.R. 2008. Quality characteristics and storage stability of patties from buffalo head and heart meats. *International Journal of Food Science and Technology*, 43:1798-1806.
- Verma, A.K.,** Sharma, B.D. and Banerjee, R. 2009. Quality characteristics and storage stability of low fat functional chicken nuggets with salt substitute blend and high fibre ingredients. *Fleischwirtschaft International*, 24 (6): 52-57.
- Verma, A.K.,** Sharma, B.D. and Banerjee, R. 2010. Effect of sodium chloride replacement and apple pulp inclusion on the physico-chemical, textural and sensory properties of low fat chicken nuggets. *LWT-Food Science and Technology*, 43: 715-719.
- Verma, A.K.** and Banerjee, R. 2010. Dietary fibre as functional ingredient in meat products: a novel approach for healthy living – a review. *Journal of Food Science and Technology*, 47(3):247–257.
- Verma, A.K.** and Banerjee, R. 2012. Low-sodium meat products: Retaining salty taste for sweet health. *Critical Reviews in Food Science and Nutrition*, 52(1): 72-84.
- Das, A.K., Rajkumar, V., **Verma, A.K.** and Swarup, D. 2012. *Moringa oleifera* leaves extract: A natural antioxidant for retarding lipid peroxidation in cooked goat meat patties. *International Journal of Food Science and Technology*, 47: 585-591.
- Verma, A.K.,** Banerjee, R. and Sharma, B.D. (2012). Quality of low fat chicken nuggets: Effect of sodium chloride replacement and added chickpea (*Cicer arietinum* L.) hull flour. *Asian-Australasian Journal of Animal Sciences*, 25(2): 291-298.
- Verma, A.K.,** Sharma, B.D. and Banerjee, R. (2012). Quality characteristics of low fat chicken nuggets: Effect of common salt replacement and added bottle gourd (*Lagenaria siceraria* L.). *Journal of the Science of Food and Agriculture*, 92: 1848-1854.
- Banerjee, R., **Verma, A. K.,** Das, A.K., Rajkumar, V., Shewalkar, A. A. and Narkhede, H. P. (2012). Antioxidant effects of broccoli powder extract in goat meat nuggets. *Meat Science*, 91: 179-184.

- Rajkumar, V., Das, A. K., **Verma, A. K.** (2012). Effect of almond on technological, nutritional, textural and sensory characteristics of goat meat nuggets. **Journal of Food Science and Technology**, DOI 10.1007/s13197-012-0819-4.
- Verma, A.K.**, Rajkumar, V., Banerjee, R., Biswas, S. and Das, A.K. (2013). Guava (*Psidium guajava* L.) powder as an antioxidant dietary fibre in sheep meat nuggets. **Asian-Australasian Journal of Animal Sciences**, 26 (6): 886-895.
- Verma, A.K.**, Banerjee, R. and Sharma, B.D. (2013). Quality characteristics of low fat chicken nuggets: effect of salt substitute blend and pea hull flour. **Journal of Food Science and Technology**, DOI 10.1007/s13197-013-1218-1.
- Gadekar, Y.P., Sharma, B.D., Shinde, A.K., **Verma, A.K.** & Mendiratta, S.K. (2014). Effect of natural antioxidants on quality of cured, restructured goat meat product during refrigerated storage ($4\pm 1^{\circ}\text{C}$). **Small Ruminant Research**, 119, 72-80.
- Das, A.K., Rajkumar, V. & **Verma, A.K.** (2014). Bael pulp residue as a new source of antioxidant dietary fibre in goat meat nuggets. *Journal of Food Processing and Preservation*. Doi: 10.1111/jfpp.12392

National:

- Verma, A.K.**, Sharma, B.D. and Banerjee, R. 2009. Efficacy of sunflower oil levels on the physico-chemical and sensory properties of low salt functional chicken nuggets. ***Journal of Veterinary Public Health***, 7(1): 53-57.
- Rajkumar, V., Dass, G., **Verma, A.K.** & Das, A.K. (2014). Slaughter weight effect on carcass and meat quality of Muzaffarnagari lambs in intensive production system. **Indian Journal of Animal Sciences**, 84 (5), 569-574.

PAPER PRESENTATIONS:

- **Verma Arun K.** and Lakshmanan, V. (2006). Effect of Different Levels of Skeletal Meat Incorporation on the Quality of Head meat Patties of Buffaloes. Compendium, National workshop-cum-Seminar on Commercial Goat & Sheep Farming and Marketing: Farmer-Industry-Researcher, March 4-5, 2006 CIRG, Makhdoom, Mathura.
- **Verma, Arun K.**, Lakshmanan, V., Anjaneyulu A.S.R. and Mendiratta, S.K. (2006). Preparation of Patties from Combination of Head Meat and Heart Meat of

Buffaloes. Compendium, XIIIth annual conference of IAAVR and National Symposium on “Advancements In Veterinary Research-Newer Horizon Vis-A- Vis Biosafety, Biosecurity & Quality Assurance Through Livestock Feed” at Orissa Veterinary College, Bhubaneswar. Pp- 204-205.

- **Verma, Arun K.,** Lakshmanan, V. and Mendiratta, S.K. (2006). Quality Characteristics of Buffalo Head Meat and Heart Meat vis-à-vis Buffalo Skeletal Meat. Compendium, XIIIth annual conference of IAAVR and National Symposium on “Advancements In Veterinary Research-Newer Horizon Vis-A-Vis Biosafety, Biosecurity & Quality Assurance Through Livestock Feed” at Orissa Veterinary College, Bhubaneswar. P-204.
- **Verma, Arun K.** and Sharma, B.D. (2008). Comparative efficacy of different sunflower oil levels on the physico-chemical and sensory properties of low salt, low fat functional chicken nuggets. Compendium, XVth annual conference of IAAVR and National Symposium on “Public-Private-Partnership (PPP) in Veterinary Research and Educator Sector” February 22-24, 2008, at West Bengal University of Animal and Fishery Sciences, Kolkata. P-67.
- **Verma, Arun K.** and Sharma, B.D. (2008). Effect of mustard oil incorporation on the quality of low salt, low fat functional chicken nuggets. Compendium, XVth annual conference of IAAVR and National Symposium on “Public-Private-Partnership (PPP) in Veterinary Research and Educator Sector” February 22-24, 2008, at West Bengal University of Animal and Fishery Sciences, Kolkata. P-68.
- **Verma, Arun K.** and Sharma, B.D. (2008). Effect of olive oil incorporation on the quality of low salt, low fat functional chicken nuggets. Compendium. 3rd Convention of Indian Meat Science Association and National Symposium on Safe Meat for Good Health and Environment” July 4-5, 2008, at Veterinary College, Hebbal, Bangalore. P-139.
- **Verma, Arun K.** and Sharma, B.D. (2008). Effect of incorporation of high dietary fibre ingredients on the physico-chemical quality of low salt, low fat and high fibre functional chicken nuggets. Compendium. 3rd Convention of Indian Meat Science

Association and National Symposium on Safe Meat for Good Health and Environment” July 4-5, 2008, at Veterinary College, Hebbal, Bangalore. P-139.

- **Verma, Arun K.,** Sharma, B.D. and Banerjee, R. (2010). Quality characteristics of low fat chicken nuggets with salt substitute and pea hull flour. IV convention of Indian Meat Science Association and National Symposium on Strategies for sustainable meat production for nutritional security and employment generation, November 19-20, 2010 at IVRI, Izatnagar, Bareilly. Pp- 120-121.
- **Verma, Arun K.,** Sharma, B.D. and Banerjee, R. (2010). Quality of low fat chicken nuggets: effect of sodium chloride replacement and added gram (*Cicer arietinum* L.). IV convention of Indian Meat Science Association and National Symposium on Strategies for sustainable meat production for nutritional security and employment generation, November 19-20, 2010 at IVRI, Izatnagar, Bareilly. P-130.
- V. Rajkumar, **Verma, A.K.,** Das, A. K., Kumar, B., Singh, A. and Kumar, M. (2011). Sweet Lemon (*C.limetta*) Albedo as dietary fiber source on functional quality of goat meat nuggets. Souvenir. National Seminar on “Vet for Health; Vet for Food; Vet for the planet” held on November 19-21, 2011, at AP Shinde Auditorium, NASC Complex, PUSA, New Delhi.
- V. Rajkumar, **Verma, A.K.,** Das, A. K., Kumar, M., Kumar, B. and Singh, A. (2011). Antioxidative dietary fiber potential of Gauva (*Psidium Guajava* L.) powder in Sheep meat Nuggets. Souvenir cum Compendium. National Seminar on “Prospects and Retrospect of Small Ruminant and Rabbit Production: Contribution to Socio-economic Security” held on December 7-9, 2011 at Hotel Royal Orchids, Jaipur, Rajasthan. Pp- 145.
- **Verma, Arun K.,** Das, A. K., Rajkumar, V., Kumar, B., Singh, A. and Kumar, M. (2011). Quality evaluation and fatty acid profile of high (*Longissimus dorsi*) and low (*Supraspinatus*) value cuts of Barbari Goat meat and their product. Souvenir cum Compendium. National Seminar on “Prospects and Retrospect of Small Ruminant and Rabbit Production: Contribution to Socio-economic Security” held on December 7-9, 2011 at Hotel Royal Orchids, Jaipur, Rajasthan. Pp- 144.

- Banerjee, R., **Verma, A. K.**, Narkhede, H.P., Kokare, P.G., Manjhi, A. and Bokde, P.M. (2012). Cauliflower (*Brassica oleracea*) powder as a source of antioxidant dietary fibre in pork meatballs. International symposium on “One health: way forward to challenges in food safety and zoonoses in 21st century” XIth annual conference of IAVPHS, December, 13-14, 2012 at GADVASU, Ludhiana.
- Banerjee, R., **Verma, A. K.**, Shewalkar, A. A. and Narkhede, H.P. (2012). Evaluation of antioxidant effects of broccoli powder extract in goat meat nuggets. In: Proceedings of X IAVPHS conference and national seminar on “One health initiative in addressing food safety challenges” February 16-17th, 2012 at Thrissur, Kerala, India. Pp. 152-153.
- **Verma, Arun K.**, Banerjee, R. and Sharma, B.D. (2012). Physicochemical, microbiological and sensory attributes of vacuum packaged low salt, low fat and high fibre functional chicken nuggets under refrigeration (4±1°C). In: Proceedings of X IAVPHS conference and national seminar on “One health initiative in addressing food safety challenges” February 16-17th, 2012 at Thrissur, Kerala, India. Pp. 157.
- **Verma, Arun K.**, Rajkumar, V. and Das, A.K. (2012). Effect of age on the quality characteristics and fatty acid profile of Barbari goat *Longissimus dorsi*. Souvenir cum Compendium of Annual conference of The Indian Society for Sheep & Goat Production and utilization (ISSGPU) and National Seminar on “Future challenges and opportunities to improve health and production of small ruminants” held on December 22-23, 2012 at CIRG, Makhdoom, Farah, Mathura (UP), India. Pp- 121.
- Rajkumar, V. **Verma, A.K.**, Das, A.K., Kumar, B., Singh, A. and Kumar, M. (2013). Bael (*Aegle marmelos* L.) as a source of antioxidant dietary fibre in goat meat nuggets. Proceedings, 3rd International Conference on Food Technology on Food Processing Technologies – Challenges and Solutions for Sustainable Food Security, January 4 & 5, 2013 at IICPT, Tanjavur. P-335.
- **Verma, Arun K.**, Rajkumar, V. Banerjee, R and Das, A.K. (2013). Healthy low fat functional chevon nuggets: Design, development and quality evaluation. V convention of Indian Meat Science Association and National Symposium on

Emerging technological changes to meet the demands of domestic and export meat sector, February 7-9, 2013 at NRC on Meat, Hyderabad. P-309.

- Banerjee, R. and **Verma, A.K.** (2013). Cabbage powder (*Brassica oleracea var. capitata alba*) as a source of antioxidant dietary fibre in goat meat nuggets. V convention of Indian Meat Science Association and National Symposium on Emerging technological changes to meet the demands of domestic and export meat sector, February 7-9, 2013 at NRC on Meat, Hyderabad. Pp-312-313.
- **Verma, Arun K.**, Rajkumar, V. and Das, A.K. (2013). Influence of meat animal species on quality characteristics and fatty acid profile of meat. V convention of Indian Meat Science Association and National Symposium on Emerging technological changes to meet the demands of domestic and export meat sector, February 7-9, 2013 at NRC on Meat, Hyderabad. Pp-360-361.
- Rajkumar, V., **Verma, A.K.** and Das, A.K. (2013). Development of Healthier Chevron Nuggets: P/S ratio standardization by the blend of animal fat and vegetable oil. In: Souvenir, Seventh International Food Convention (IFCON-2013) on “Nutritional Security through Sustainable Development, Research & Education for Healthy Foods” December 18-21, 2013 at CFTRI, Mysore Karnataka. P. 121-122.
- **Verma, A.K.**, Rajkumar, V. and Das, A. K. (2013). Effect of replacing goat fat with vegetable oils on the quality characteristics and fatty acid profile of chevon nuggets. In: Souvenir, Seventh International Food Convention (IFCON-2013) on “Nutritional Security through Sustainable Development, Research & Education for Healthy Foods” December 18-21, 2013 at CFTRI, Mysore Karnataka. P-182.
- Tanuja, Pathak, V., **Verma, A.K.**, Goswami, M. and Singh V.P. (2013). Development and quality evaluation of chicken meat momos. In: Souvenir, Seventh International Food Convention (IFCON-2013) on “Nutritional Security through Sustainable Development, Research & Education for Healthy Foods” December 18-21, 2013 at CFTRI, Mysore Karnataka. Pp. 118-119.
- Umaraw, P., Pathak, V., Rajkumar, V., **Verma, A.K.**, Singh, V.P. and Goswami, M. (2013). Fatty acid profile of chevon and edible by-products of Barbari goat kid. In: Souvenir, Seventh International Food Convention (IFCON-2013) on “Nutritional

Security through Sustainable Development, Research & Education for Healthy Foods”
December 18-21, 2013 at CFTRI, Mysore Karnataka. P. 183.

INVITED /LEAD PAPER:

Agnihotri, M. K., **Arun Kumar Verma** and V. Rajkumar. (2011). Sustainable animal products production for food security. Souvenir. National Seminar on “Vet for Health; Vet for Food; Vet for the planet” held on November 19-21, 2011, at AP Shinde Auditorium, NASC Complex, PUSA, New Delhi.

POPULAR/TECHNICAL ARTICLES:

Verma, A.K. and Sharma, B. D. 2006. Effective utilization of buttermilk. *Processed Food Industry*, pp 35-37.

Das, A.K., Anjaneyulu, A.S.R., **Verma, A.K.** and Biswas, S. 2006. Scenario of Indian Livestock and Meat marketing. *Indian Food Industry*, 25:4, 35-37.

Verma, A.K. and Sharma, B. D. 2007. Nutritional and commercial importance of whey. *Beverage and Food World*, pp 70-72.

Verma, A.K., Sharma, B.D. and Banerjee, R. 2009. Functional meat products: developments & challenges. *Processed Food Industry*, 12 (9): 35-39.

Banerjee, R. and **Verma, A.K.** 2010. Probiotic containing functional dairy foods: Development and challenges. *Beverage and Food World*, 37 (1): 56-58.

Banerjee, R. and **Verma, A.K.** 2011. Eco-friendly packaging of meat and meat products: A Review. *Indian Food Packer*, 65(3): 44-48.

Banerjee, R., **Verma, A.K.**, Das, A.K. and Rajkumar, V. 2011. Food safety in meat industry: Indian prospects. *Indian Food Industry*, 30(2): 33-43.

Banerjee, R. and **Verma A.K.** (2012). Flavour of Meat and Meat Products: Role of Added Ingredients and Processing Techniques. *Processed Food Industry*, Accepted for Publication.

Rajkumar, V., **Verma, A. K.** and Das, A.K. (2014). Efficient utilization of Goat Slaughter by-product: Blood. Goat news. Vol 8 (Jan-June). P- 5.

Das, A.K., **Verma, A. K.** and Rajkumar, V. (2014). Goat meat based value added products. Vol 8 (Jan-June). P- 11.

Book chapter

- **Verma, A.K.**, Banerjee, R., Dwivedi, H.P., Juneja, V.K. (2014). Bacteriocins: Potential in Food Preservation. In: Batt, C.A., Tortorello, M.L. (Eds.), Encyclopedia of Food Microbiology, vol 1. Elsevier Ltd, Academic Press, pp. 180–186.
- **Verma, A.K.** and Banerjee, R. (2013). Dietary fiber in meat products: Functional and bioactive ingredients. (In: Betancur-Ancona, D., Chel-Guerrero, L., Segura-Campos, M.R. (Eds.), Dietary fiber: sources, properties and their relationship to health, Nova Science Publishers, New York, pp. 63-84.

Training participation

- Participated NAIP sponsored training programme on **“Advances in Nutrient Use Efficiency in Livestock Production System”** from 28.01.2012 to 10.02.2012 at CIRG, Makhdoom.
- Participated CCPI, NAIP, Izatnagar sponsored **“SAS software training programme”** organized at Agricultural Knowledge Management Unit, CIRG, Makhdoom from 9-14th January, 2012.
- Participated ICAR sponsored summer school on **“Opportunities in value addition and challenges in quality control of meat products including slaughterhouse by-products”** from 04th to 24th July, 2012 at Veterinary College and Research Institute, Namakkal.
- Participated ICAR sponsored summer school on **“Food Quality and Safety: Recent Advances in Evaluation Techniques”** at **Central Institute of Post-Harvest Engineering and Technology, Ludhiana** from August 5-25, 2014.

PROFESSIONAL AFFILIATIONS:

- Life Member of Madhya Pradesh Veterinary Council which is a part of Veterinary Council of India.
- Life member of Indian Meat Science Association, Pondicherry.
- Life Member of Indian Association of Veterinary Public Health Specialists, Izatnagar.
- Full Member of Association of Food Scientist and Technologist (India), Mysore.
- Life member of Indian Society of Sheep and Goat Production and Utilization.