

SOUVIK PAUL



Date of Birth 24th January , 1982
Father's Name Shri Shyamal Kumar Paul
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Academic Record

Educational Qualifications

Examination	Year	University/Institute	OGPA	Discipline
Ph.D	August, 2010	Indian Veterinary Research Institute, Izatnagar, U.P-243122, INDIA	8.739	Veterinary Parasitology
Master of Veterinary Science (M.V.Sc.)	August, 2007	Indian Veterinary Research Institute, Izatnagar, U.P-243122, INDIA	8.738	Veterinary Parasitology
Bachelor of Veterinary Science and Animal Husbandry (BVSc & AH)	July, 2005	West Bengal University of Animal and Fishery Sciences, Kolkata-37. INDIA	77.80 %	Veterinary Sciences
Intermediate (10+2)	June, 2000	Central Board of Secondary Education, INDIA	82.6 %	Physics, Chemistry, English, Math, Biology
Matriculation (10 th)	June, 1998	Central Board of Secondary Education, INDIA	80.4 %	Science, Math, Social Sciences, English & Language

Courses Studied

- **Doctorate level:** Immunoparasitology, Molecular Biology techniques in Parasitology, Diagnostic Parasitology, Management of livestock Parasitism, Advances in Veterinary Parasitology, Advances in Helminth, Protozoan and arthropod Vaccine Development, Advances in Hybridoma Technology, Advances in Protein Engineering, Enzymology, Analytical biochemistry I & II, Advances in Genetic Engineering.
- **Master's level:** Veterinary Helminthology, Clinical Parasitology, Parasitic Zoonoses, Veterinary Protozoology, Parasitic Protozoa, Veterinary Entomology and Acarology Molecular Biology, Chemistry of Proteins and Nucleic acids, Genetic Engineering, Hybridoma Technology, General Immunology.

Research Experience

Master's Research

- **Title of MVSc Thesis :** “Isolation and characterization of *Cryptosporidium* isolate of bovine origin”

The thesis work involves study of the molecular epidemiology of bovine cryptosporidiosis in India. Comparison of different parasitological and molecular techniques for diagnosis of bovine cryptosporidiosis and characterization of the isolate of *Cryptosporidium* spp. involved by genetical and biological means.

Ph.D Research

- **Title of PhD Synopsis :** “Characterization of Acetylcholinesterase mediated acaricidal resistance in Indian isolates of *Rhipicephalus (Boophilus) microplus*”

The research work involves determination the status of organophosphate resistance in Indian isolates of *Rhipicephalus (Boophilus) microplus* by Adult immersion test (AIT), Biochemical assay (Acetylcholinesterase assay, GST assay) and molecular techniques (PCR, Nucleotide sequencing, Real Time PCR).

Technical Skills

- Conventional diagnosis of parasitic diseases.
- Immunoparasitology- Antigen preparation, Protein purification and estimation techniques, ELISA, IFAT, SDS-PAGE and Western Blot Analysis.
- Molecular Parasitology- Extraction of DNA/RNA, Primer designing and PCR, Cloning and expression, RT-PCR semi quantification, Real time PCR.

Awards/Fellowships

- Awarded with Prof. D.B. Mukherjee **Gold medal** for securing highest marks in Vety. Surgery and Radiology during Bachelor's degree.
- Awarded with **Dr. J.P Dubey Young Scientist award** by IAAVP in the year 2007.
- Overall topper in PhD IVRI.
- Qualified ICAR-National Eligibility Test (NET) in the year 2008.

Membership of Professional Societies

- Indian Association for the Advancement of Veterinary Parasitology (IAAVP)
- West Bengal Veterinary Council.
- Veterinary Council of India.

Conferences/ Symposiums/ Trainings attended

- **XVIII National Congress of Veterinary Parasitology** and ‘National symposium on **Emerging parasitic zoonoses and advances in herbal medicine against parasites of Veterinary importance**’. Organized by IAAVP, SKAUST Jammu, 7-9th Sep. 2007
- National symposium: **Nanotechnology in Biomedical Sciences and Molecular Diagnostics**. Sponsored by Dept. of Biotechnology, Govt. of India. Organized by Division of Biochemistry, Indian Veterinary Research Institute (IVRI), Izatnagar. 22-23rd Dec. 2007.
- National Agriculture innovation Project (NAIP) workshop on ‘**Tick rearing, in vitro testing of acaricides and characterization of acaricide resistant genes**’ at Entomology laboratory, Division of Parasitology, Indian Veterinary Research Institute (IVRI), Izatnagar, 28-11-2008 to 27-12-2008.
- **International Conference on Emerging trends on Food and Health Security in Cold Deserts**. Organised by DIHAR, DRDO at Leh-Ladakh during 23rd-25th, September, 2011.
- **XXII national Congress of IAAVP and National Symposium on Integrated Research Approaches in Veterinary Parasitology: From basic to Molecular Techniques**. Organised by IAAVP at DUVASU, Mathura during 15th-17th March, 2012.
- **National Seminar and Annual Conference on Future Opportunities to Improve Health and Production of Small Ruminants**. Organised by ISSGPU, at CIRG, Makhdoom during 22-23rd, December, 2012.

Research Papers Published/ Communicated

- **Paul, S.**, Chandra, D., Ray, D.D., Tewari, A.K., Rao, J.R., Banerjee, P.S., Baidya, S. and Raina, O.K. (2008). Prevalence and molecular characterization of bovine *Cryptosporidium* isolates in India. (*Short Communication*) ***Veterinary Parasitology***; 153, 143-146.
- **Paul, S.**, Chandra, D., Tewari, A.K., Banerjee, P.S., Ray, D.D., Raina, O.K. and Rao, J.R., (2009). Prevalence of *Cryptosporidium andersoni*: a molecular epidemiological survey among cattle in India. ***Veterinary Parasitology***; 161, 31-35.
- **Paul, S.**, Chandra, D., Tewari, A.K., Banerjee, P.S., Ray, D.D., Boral, R and Rao, J.R., (2009). Comparative evaluation and economic assessment of coprological diagnostic methods and PCR for detection of *Cryptosporidium* spp. in bovines. (*Short Communication*) ***Veterinary Parasitology***. 164. 291-295.
- Srikanta Ghosh, Anil Kumar Sharma, Sachin Kumar, Shashi Shankar Tiwari, Subha Rastogi, Sharad Srivastava, Mahima Singh, Rinesh Kumar, **Souvik Paul**, D. D. Ray & Ajay Kumar Singh Rawat. (2011). *In vitro* and *in vivo* efficacy of *Acorus calamus* extract against *Rhipicephalus (Boophilus) microplus*. ***Parasitology Research***, 108, 361–370

- Sachin Kumar, **Souvik Paul**, Anil Kumar Sharma, Rinesh Kumar, Shashi Shankar Tewari, Pallab Chaudhuri, D.D. Ray, Ajay Kumar Singh Rawat and Srikant Ghosh. (2011). Diazinon resistant status in *Rhipicephalus (Boophilus) microplus* collected from different agro-climatic regions of India. *Veterinary Parasitology*, [Volume 181, Issues 2-4](#), 27 September 2011, Pages 274-281
- Rinesh Kumar, **Souvik Paul**, Sachin Kumar, Anil Kumar Sharma, Sweta Gupta, Ajay Kumar Singh Rawat, Pallab Chaudhuri, D D Ray, Srikant Ghosh. (2011). Detection of specific nucleotide changes in the hypervariable region of 16S rDNA gene of *Rhipicephalus (Boophilus) microplus* and *Hyalomma anatolicum anatolicum*. *Indian Journal of Animal Sciences*. Vol. 81 (12),
- **S. Paul**, D. Chandra, P.S. Banerjee, R. Boral and G.B. Manjunatha Reddy (2011). *Cryptosporidium parvum*: Elucidation of differential experimental host specificity among bovine isolates from India. *Indian Journal of Animal Sciences* (Under Review)
- **Souvik Paul**, Manjunatha Reddy, G.B and D.K. Sharma (2012). Cryptosporidiosis in neonatal goats kids in North -Western India. *Indian Veterinary Journal* (Accepted)
- **Souvik Paul**, Mrityunjay Mondal and Rupa Boral. (2011). Bovine Neosporosis- A review. *The North-East Veterinarian*, Vol. XI, No. 1, 32-34
- Dinesh Kumar Sharma and **Souvik Paul** (2011). Laghu rumanthi pashuon ke pachan tantra ke gol krimi sankraman prabandhan ke vaikalpic upaya. *Pashudhan*. Vol. 2(1), 32-35
- **Souvik Paul**, Mrityunjay Mandal, Rupa Boral and Maj. Deepak Verma (2011). A review of Microarray and its applications in Parasitology. *Livestockline*, June 2011, 14-18
- **Souvik Paul**, Rupa Boral, Mrityunjay Mandal and Maj. Deepak Verma (2011). Engineered antibodies- A review. *Livestockline*. August 2011, 24-29

Abstracts/ Compendiums/ Chapters Published

- D.D. Ray and **Souvik Paul** (2009). Advances in Molecular Diagnosis of Cryptosporidiosis in Man and animals. Chapter in Compendium of Winter School on “Molecular diagnostic techniques for zoonotic and food borne diseases”. 7th -27th February, 2009, Division of VPH, IVRI, Izatnagar.
- **S. Paul**. (2007). Morphological, molecular and biological characterization of *Cryptosporidium* spp. affecting neonatal bovine calves in India. Paper presented in Abstract presented in XVIII National Congress of Veterinary Parasitology. 7-9th September, 2009, SKAUST, Jammu.
- **S. Paul**, D. Chandra and P. S. banerjee (2008). Genetic characterization and experimental host specificities of Izatnagar and Mohanpur isolates of *Cryptosporidium parvum*. Abstract presented in Silver jubilee Annual Conference of IAVP. 10-12th November, 2008, IVRI, Izatnagar.
- B. Pradeep, P.S.Banerjee, J.R.Rao, O.K.Raina, A.K.Tewari, S. Samanta and **S. Paul** (2009). Prevalence of spp. in Cattle, Buffaloes and pigs in Bareilly. Abstract presented in XIX National Congress of Veterinary Parasitology. 3-5th February, 2009, GADVASU, Ludhiana.
- B. Pradeep, P.S.Banerjee, J.R.Rao, O.K.Raina, A.K.Tewari, S. Samanta and **S. Paul** (2009). Cloning and Characterization of a Surface Glycoprotein gene of *Cryptosporidium* spp. of bovine origin. Abstract presented in XIX National Congress of Veterinary Parasitology. 3-5th February, 2009, GADVASU, Ludhiana.

- Anil K. Sharma, Sachin Kumar, Sharad Srivastava, Subha Rastogi, Shashi Shankar Tewari, Mahima Singh, Rinesh Kumar, **Souvik Paul**, K. G. Chandini, D. D. Ray, Pallab Chaudhuri, D. Mondal, O. K. Raina, Ajay Kumar Singh Rawat and S. Ghosh. (2009). Screening of herbal extracts as acaricides against *Rhipicephalus (Boophilus) microplus*. Abstract accepted in National congress of Indian Society for Parasitology. Chandigarh, India.
- Sachin Kumar, Anil K. Sharma, Sharad Srivastava, Subha Rastogi, Shashi Shankar Tewari, Mahima Singh, Rinesh Kumar, **Souvik Paul**, K. G. Chandini, D. D. Ray, Pallab Chaudhuri, D. Mondal, O. K. Raina, Ajay Kumar Singh Rawat and S. Ghosh. (2009). Identification of herbal extract for acaricidal activity against *Rhipicephalus (Boophilus) microplus*. Abstract accepted in National congress of Indian Society for Parasitology. Chandigarh, India.
- Caprine Cryptosporidiosis in Jamunapari and Barbari Goat kids from India. By- Souvik Paul, D.K. Sharma and Manjunath Reddy, G.B at **International Conference on Emerging trends on Food and Health Security in Cold Deserts**. Organised by DIHAR, DRDO at Leh-Ladakh during 23rd-25th, September, 2011.- AWARDED BEST POSTER AWARD FOR THE PRESENTATION
- Amprolium Resistance in Goat Eimeria species. By- Souvik Paul, D.K. Sharma and Vinay Chaturvedi, at **XXII national Congress of IAAVP and National Symposium on Integrated Research Approaches in Veterinary Parasitology: From basic to Molecular Techniques**. Organised by IAAVP at DUVASU, Mathura during 15th-17th March, 2012.
- D.K. Sharma, **Souvik Paul** and Manjunath Reddy, G.B. (2012). Parasite control in farm animals: An integrated approach. at **XXII national Congress of IAAVP and National Symposium on Integrated Research Approaches in Veterinary Parasitology: From basic to Molecular Techniques**. Organised by IAAVP at DUVASU, Mathura during 15th-17th March, 2012.
- Ashok Kumar, **Souvik Paul** and Manjunath Reddy, G.B. (2012). Pet animal parasites: Approaches for control and management. at **XXII national Congress of IAAVP and National Symposium on Integrated Research Approaches in Veterinary Parasitology: From basic to Molecular Techniques**. Organised by IAAVP at DUVASU, Mathura during 15th-17th March, 2012.
- Epidemiology of caprine cryptosporidiosis in north western India (2012). **Souvik Paul**, D.K. Sharma, Manjunath Reddy, G.B., Anil Kumar Mishra, Ashok Kumar, V.K. Gupta, Nitika Sharma and Vinay Chaturvedi. At **National Seminar and Annual Conference on Future Opportunities to Improve Health and Production of Small Ruminants. Organised by ISSGPU**, at CIRG, Makhdoom during 22-23rd, December, 2012.
- Prevalence of Subclinical mastitis indifferent breeds of goats. (2012). A.K. Mishra, N. Sharma, A. Kumar, GBM. Reddy, Shivasharanappa and **S. Paul**. . At **National Seminar and Annual Conference on Future Opportunities to Improve Health and Production of Small Ruminants. Organised by ISSGPU**, at CIRG, Makhdoom during 22-23rd, December, 2012.
- Sero Prevalence study of caprine brucellosis in small ruminants using dot ELISA. (2012). Shivasharanappa, N, VK Gupta, VK Singh, DK Sharma, Nitika Sharma, AK Pawaiya, RVS Pawaiya, Ashok Kumar, **Souvik Paul**, Naveen Kumar and SV Singh. At **National Seminar and Annual Conference on Future Opportunities to Improve Health and Production of Small Ruminants. Organised by ISSGPU**, at CIRG, Makhdoom during 22-23rd, December, 2012.
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Accession numbers submitted to NCBI

- **EF611871**- Partial sequence of the diagnostic part of 18S ssu rRNA gene of Izatnagar (India) isolate of *Cryptosporidium parvum* from bovine.
- **EU660038**- Full sequence of the 18S SSU rRNA gene of Izatnagar (India) isolate of *Cryptosporidium parvum* from bovine.
- **EU725831**- Full sequence of CP 23 gene of Izatnagar (India) isolate of *Cryptosporidium parvum* from bovines.
- **GU222462** *Rhipicephalus (B.) microplus* isolate 1 from India 16S ribosomal RNA gene, partial sequence; mitochondrial
- **GU323287** *Rhipicephalus (B.) microplus* isolate 1 from India 16S ribosomal RNA gene, partial sequence; mitochondrial
- **GU323288** *Rhipicephalus (B.) microplus* isolate 1 from India 16S ribosomal RNA gene, partial sequence; mitochondrial
- **GU722603** *Rhipicephalus (B.) microplus* isolate Bareilly 16S ribosomal RNA gene, partial sequence; mitochondrial
- **GU722606** *Rhipicephalus (B.) microplus* isolate Patiala 16S ribosomal RNA gene, partial sequence; mitochondrial
- **GU722604** *Rhipicephalus (B.) microplus* isolate Muzaffarpur 16S ribosomal RNA gene, partial sequence; mitochondrial
- **GU722605** *Rhipicephalus (B.) microplus* isolate Danapur 16S ribosomal RNA gene, partial sequence; mitochondrial
- **GU817006** *Rhipicephalus (B.) microplus* isolate Begusarai 16S ribosomal RNA gene. Partial sequence; mitochondrial
- **HM536973** *Rhipicephalus (B.) microplus* isolate Raebareilly 16S ribosomal RNA gene. Partial sequence; mitochondrial
- **HM536974** *Rhipicephalus (B.) microplus* isolate Nadia 16S ribosomal RNA gene. Partial sequence; mitochondrial
- **HM536972** *Rhipicephalus (B.) microplus* isolate South 24 Paraganas 16S ribosomal RNA gene. Partial sequence; mitochondrial
- **HM536975** *Rhipicephalus (B.) microplus* isolate North 24 Parganas 16S ribosomal RNA gene. Partial sequence; mitochondrial
- **HM536970** *Rhipicephalus (B.) microplus* isolate Ludhiana 16S ribosomal RNA gene. Partial sequence; mitochondrial
- **HM536971** *Rhipicephalus (B.) microplus* isolate Sultanpur 16S ribosomal RNA gene. Partial sequence; mitochondria
- **HM536976** *Rhipicephalus (B.) microplus* isolate Bathinda 16S ribosomal RNA gene. Partial sequence; mitochondrial

- **HM536977** *Rhipicephalus (B.) microplus* isolate Darbhanga 16S ribosomal RNA gene. Partial sequence; mitochondrial
- **GU944950** *Rhipicephalus (B.) microplus* isolate Izatnagar 1 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944951** *Rhipicephalus (B.) microplus* isolate Bareilly 1 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944952** *Rhipicephalus (B.) microplus* isolate Izatnagar 41-1 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944953** *Rhipicephalus (B.) microplus* isolate Izatnagar 47-1 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944954** *Rhipicephalus (B.) microplus* isolate Izatnagar 44-1 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944955** *Rhipicephalus (B.) microplus* isolate Izatnagar 2 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944956** *Rhipicephalus (B.) microplus* isolate Bareilly 2 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944957** *Rhipicephalus (B.) microplus* isolate Izatnagar 41-2 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944958** *Rhipicephalus (B.) microplus* isolate Izatnagar 44-2 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944959** *Rhipicephalus (B.) microplus* isolate Izatnagar 47-2 acetylcholinesterase 2 (AchE2) mRNA, complete sequence
- **GU944960** *Rhipicephalus (B.) microplus* isolate Izatnagar 41-1 acetylcholinesterase 3 (AchE3) mRNA, complete sequence
- **GU944961** *Rhipicephalus (B.) microplus* isolate Izatnagar 47-1 acetylcholinesterase 3 (AchE3) mRNA, complete sequence
- **GU944962** *Rhipicephalus (B.) microplus* isolate Izatnagar 41-2 acetylcholinesterase 3 (AchE3) mRNA, complete sequence
- **GU944963** *Rhipicephalus (B.) microplus* isolate Izatnagar 47-2 acetylcholinesterase 3 (AchE3) mRNA, complete sequence

Projects handling currently-

1. Prevalence of caprine cryptosporidiosis and toxoplasmosis- **Principal Investigator**
(Submitted RPF- III)
2. Coccidian infection in Goats: Epidemiology, Effects, Interventions and Disease Resistance-
Principal Investigator
3. Etio-pathogenesis of diarrhea in kids- **Co-Investigator**

4. Network Project on Sheep Improvement. –Muzaffarnagri Unit- **Co-Investigator**
5. **DST Fast Track Project on** - Development of diagnostic assay, Molecular characterization and epidemiology of cryptosporidiosis in goats- Approved and to start shortly

Administrative/ Institute Building activities-

1. Acting as Co-Incharge PME Cell of the Institute
2. Acted as a Nodal officer for HYPM of scientists of the Institute.
3. 2nd Incharge Muzaffarnagari Sheep Unit of the Institute