

DR. PRODIP KUMAR BARAI

Animal Genetics & Breeding Specialist | Genomic Epidemiology & One Health

Barishal, Bangladesh | +880 1731 290405 | Prodipkumarbarai15@gmail.com | researchbyprodip.com

RESEARCH PROFILE

Veterinary and animal genetics professional with approximately 12 years of experience across animal breeding, genetic improvement, reproductive biotechnology, livestock disease surveillance, herd health, laboratory quality assurance, and field veterinary systems. Extensive applied experience in computer-assisted semen analysis (CASA), semen cryopreservation, fertility evaluation, breeding-data management, biological sample collection, microbiological screening, biosecurity, and zoonotic disease surveillance. Experienced in integrating genetic, reproductive, health, diagnostic, and production data for evidence-based decision-making and in collaborating with universities, laboratories, government agencies, veterinary institutions, and R&D teams. Seeking doctoral research opportunities at the intersection of animal genetics, livestock genomics, genomic epidemiology, molecular epidemiology, reproductive biotechnology, and One Health.

RESEARCH INTERESTS

Animal Genetics & Breeding • Livestock Genomics • Genomic Epidemiology • Molecular Epidemiology • Reproductive Biotechnology • Fertility and Sire Evaluation • Animal Disease Surveillance • Zoonotic Disease Epidemiology • One Health • Veterinary Public Health

EDUCATION

Patuakhali Science and Technology University

2016 – 2017

Master of Science (M.S.) in Pharmacology | CGPA: 3.70/4.00

Bangladesh

- **Thesis:** *Effect of Vitex negundo Leaves and Amino Acids on Growth Performance in Broiler.*
- Research training included experimental animal studies, treatment-group comparison, biological interpretation, data recording, research methodology, pharmacology, toxicology, chemotherapy, and food toxicology.

Patuakhali Science and Technology University

Completed 2014

Doctor of Veterinary Medicine (DVM) | CGPA: 3.04/4.00

Bangladesh

- Completed a five-year professional veterinary program covering animal genetics and breeding, reproduction, epidemiology, microbiology, pathology, veterinary public health, medicine, surgery, animal nutrition, laboratory diagnostics, and a full-year professional internship.

RESEARCH & SCIENTIFIC EXPERIENCE

ACI Animal Genetics Research and Development Centre, ACI PLC

Jul 2026 – Present

Senior Manager, Technical Services

Sreepur, Gazipur, Bangladesh

- Lead animal breeding, genetic improvement, reproductive biotechnology, and technical animal-health programs involving elite breeding cattle and goats.
- Oversee semen production, cryopreservation, CASA-based semen assessment, and quality assurance supporting more than 4.2 million semen doses annually.
- Direct genetic, fertility, reproductive, and health monitoring of more than 260 breeding bulls and bucks and associated livestock populations.
- Coordinate microbiological and diagnostic surveillance involving approximately 3,200–3,700 biological samples and around 1,700 diagnostic specimens annually.
- Lead surveillance and control activities for major livestock and zoonotic diseases, including brucellosis, bovine tuberculosis, paratuberculosis, and anthrax.
- Integrate breeding, reproductive, herd-health, and diagnostic datasets for KPI-based performance assessment, risk evaluation, and evidence-informed technical decisions.

RESEARCH & SCIENTIFIC EXPERIENCE CONTINUED

ACI Animal Genetics, ACI Limited

Manager, Technical Services

Apr 2019 – Jun 2026

Gazipur, Bangladesh

- Led strategic breeding and genetic-improvement programs for dairy cattle and goat populations through selection, evaluation, and management of elite breeding bulls and bucks.
- Managed reproductive biotechnology operations encompassing semen collection, processing, cryopreservation, CASA analysis, fertility monitoring, and reproductive performance evaluation.
- Maintained and analyzed herd-level genetic, fertility, reproductive, and animal-health databases to support breeding decisions and longitudinal performance monitoring.
- Supervised microbiological quality assurance through laboratory screening of approximately 3,000–3,500 biological samples annually and coordinated approximately 1,500 diagnostic specimens per year.
- Implemented surveillance, prevention, and control programs for zoonotic and production-limiting diseases and supported reproductive disease monitoring in dairy cattle populations.
- Collaborated with R&D teams, universities, diagnostic laboratories, government agencies, and veterinary institutions on applied research, field trials, disease investigations, and technical capacity building.
- Developed SOPs and supported biosecurity, quality-control, biosafety, regulatory compliance, and ISO-aligned risk-management systems.

BRAC Artificial Insemination Enterprise

Veterinary Surgeon

Mar 2018 – Mar 2019

Madaripur, Bangladesh

- Conducted field evaluation of breeding-bull semen quality and supported artificial insemination, reproductive-health, disease-control, and livestock-management programs.
- Coordinated artificial insemination technician training with universities and supported progeny shows and mobile veterinary health programs across 64 districts.
- Delivered treatment and herd-health services covering more than 60,000 animals annually while generating technical reports for program evaluation and continuous improvement.
- Conducted farmer education on profitable livestock production, disease prevention, and zoonotic disease awareness.

BRAC Artificial Insemination Enterprise

Officer, Quality Control & Livestock Services

Dec 2015 – Mar 2018

Mymensingh, Bangladesh

- Performed CASA-based semen analysis and reproductive quality assurance within a large-scale operation producing approximately 36 million semen straws annually.
- Conducted farm biosecurity, vaccination, treatment, and herd-health monitoring for approximately 150 breeding animals.
- Generated analytical production reports and supported quality-improvement decisions using semen-production and animal-health data.
- Supported telemedicine services and technical training for artificial insemination service providers and livestock farmers.

PAGE Development Centre / Palli Karma-Sahayak Foundation (PKSF)

Livestock Officer

Apr 2015 – Nov 2015

Comilla, Bangladesh

- Conducted field-level livestock health monitoring, vaccination programs, modern cattle and poultry husbandry training, asset monitoring, and technical reporting.
- Organized more than 120 veterinary health camps annually and delivered livestock training to approximately 2,500 farmers.

MJSKS – Chars Livelihoods Programme

Livestock Officer

Mar 2014 – Apr 2015

Kurigram, Bangladesh

- Implemented deworming, vaccination, treatment, and livestock-management programs serving approximately 1,200 beneficiaries under a UKaid/DFAT-supported rural livelihood initiative.
- Provided technical support on cattle and traditional poultry production and community-based livestock health management.

RESEARCH COMPETENCIES

Animal Genetics & Breeding: Elite sire selection, breeding-program implementation, genetic improvement, breeding records, trait evaluation, fertility monitoring, and reproductive performance assessment.

Reproductive Biotechnology: CASA semen analysis, semen collection and processing, cryopreservation, semen-quality assessment, artificial insemination systems, and sire fertility evaluation.

Epidemiology & One Health: Disease surveillance, epidemiological field-data collection, herd-health monitoring, zoonotic disease control, outbreak monitoring, vaccination, biosecurity, and diagnostic sample coordination.

Laboratory & Diagnostic Exposure: Biological sample collection and management, microbiological screening, laboratory quality assurance, diagnostic coordination, and reproductive sample evaluation.

SELECTED RESEARCH-RELEVANT IMPACT

- Applied reproductive biotechnology and quality-control experience across high-volume livestock breeding systems, including operations producing more than 4.2 million semen doses annually at ACI and approximately 36 million semen straws annually at BRAC.
- Managed and interpreted animal-level and herd-level genetic, fertility, reproductive, health, laboratory, diagnostic, and production records relevant to breeding performance and disease surveillance.
- Built substantial practical expertise in surveillance and control of brucellosis, bovine tuberculosis, paratuberculosis, anthrax, and other reproductive and livestock diseases of One Health importance.
- Developed extensive field exposure across commercial breeding systems, laboratories, dairy farms, artificial insemination networks, and community-based livestock populations.
- Delivered technical and veterinary programs spanning all 64 districts and supported livestock treatment, health management, training, and advisory activities at large scale.

RESEARCH METHODS & TECHNICAL SKILLS

Research and Data: Experimental evaluation, epidemiological field-data collection, breeding records, fertility datasets, herd-health databases, KPI analysis, descriptive statistical analysis, data interpretation, scientific and technical reporting.

Reproductive and Laboratory Techniques: CASA semen analysis, semen collection, processing and cryopreservation, fertility evaluation, biological sample collection, microbiological quality screening, diagnostic sample management, and reproductive-health monitoring.

Veterinary and One Health: Clinical assessment, vaccination, treatment protocols, disease surveillance, outbreak monitoring, biosecurity, zoonotic disease prevention, herd-health management, and farmer-level disease-risk communication.

Software: Microsoft Excel, Microsoft PowerPoint, basic SPSS, data recording, KPI dashboards, technical presentation, and analytical reporting.

FELLOWSHIPS & SPECIALIZED TRAINING

Cochran Fellowship Program – Dairy Genetics and Cattle Transport USDA Foreign Agricultural Service, USA	2023
Improved Breeding Bull Management & Semen Production BRAC / USAID / Winrock International	2018
Udder Health, Mastitis Prevention & Ultrasonography BRAC Artificial Insemination Enterprise	2016
Poultry Rearing & Disease Management PAGE Development Centre / UKaid / Australian Aid	2015
Livestock Vaccination & Disease Control Chars Livelihoods Programme	2014
Internal Auditor – Integrated Management Systems ISO 9001:2015 & ISO 14001:2015	2022

ADDITIONAL PROFESSIONAL DEVELOPMENT

Transformational Leadership (2025) • Situational Leadership (2025) • Workplace Efficiency and Productivity Improvement (2025) • Fire Drill and Workplace Safety (2024) • Project Management Professional Training (2022) • Managerial Excellence (2021) • Advanced MS Excel and PowerPoint for Professionals (2018)

SCIENTIFIC COMMUNICATION & KNOWLEDGE TRANSFER

- Experienced in scientific and technical report writing, research-oriented presentations, analytical production reporting, SOP development, and documentation of animal-health and breeding performance.
- Delivered nationwide technical training to livestock assistants, artificial insemination technicians, farmers, and field personnel on breeding management, reproductive health, biosecurity, disease prevention, and livestock production.
- Experienced in multidisciplinary communication with researchers, veterinarians, laboratory personnel, academic institutions, government agencies, technical teams, farmers, and industry stakeholders.

LANGUAGES

Bengali: Native **English:** Upper-Intermediate (B2)

REFERENCES

Dr. Mohammad Ruhul Amin

Dean, Faculty of Animal Science & Veterinary Medicine
Patuakhali Science and Technology University

Academic Reference

Phone: +880 1716 404262

Dr. Asutos Roy

Upazila Livestock Officer
Agailjhara, Barishal

Professional Reference

Phone: +880 1711 360703