

M. Tayyab Khan

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PERSONAL SUMMARY

My research focuses on advancing animal health through the application of emerging reproductive technologies and computational methodologies. I have pioneered innovative approaches in sheep reproduction, including sperm biology, estrous synchronization, and laparoscopic insemination, with a focus on identifying factors that influence fertility outcomes in small ruminants. I am now seeking to leverage my expertise to drive meaningful improvements in livestock productivity and health.

EXPERIENCES

May,2025-Conti **Assistant Professor Theriogenology University of Veterinary & Animal Sciences, Swat**

Feb,2025- May,2025 **Lecturer, (Visiting) Theriogenology, University of Veterinary & Animal Sciences, Lahore**

- Teaching **Obstetrics and Genital Diseases and Clinic-I** to DVM students.
- Supervising and managing **clinical cases at OPD**, including reproductive disorders.
- Performing and interpreting **semen analysis, vaginal cytology, and ultrasonography**.
- Providing hands-on training to students in **diagnosis and treatment of reproductive issues**.

Aug, 2019- Aug,2024 **Ph.D. Theriogenology, University of Veterinary & Animal Sciences, Lahore**

PhD Thesis title: "*Optimization of Semen Extender and Laparoscopic Artificial Insemination in Lohi Sheep*"

Supervisors: Dr. Muhammad Irfan-ur-Rehman Khan (UVAS) and Dr. Ejaz Ahmad (BZU)

Key points:

- Optimized sheep semen cryopreservation for the first time in Pakistan by enhancing extenders with Quercetin and ATP.
- Studied the synergistic effect of Quercetin and ATP to improve semen viability during the cryopreservation process.
- Optimized timing and sperm concentration for laparoscopic artificial insemination (LAI) in sheep.
- Conducted a comparative analysis between laparoscopic insemination and conventional insemination techniques.
- Investigated factors affecting pregnancy per AI and pregnancy loss rates under subtropical conditions, including season, parity, BCS, and type of progestin treatment.
- Published three peer-reviewed manuscripts in Cryobiology and Reproduction in Domestic Animals.
- Disseminated findings and conclusions to specialist and non-specialist audiences

Key words: sheep reproduction, cryopreservation, laparoscopic insemination, Quercetin, ATP, fertility outcomes, small ruminants

Dec 2019- June 2022 **Research Fellow, PARC funded Project (AS-035)**

Project Title: *“Optimization of semen cryopreservation and artificial insemination techniques for improving reproductive potential in sheep”*

Key points:

- Conducted semen cryopreservation and performed detailed semen analysis using Computer-Assisted Semen Analyzer (CASA).
- Investigated the effects of varying concentrations of antioxidants and energy sources on post-thaw sperm quality.
- Executed fertility trials through laparoscopic artificial insemination (LAI) in resource-constrained settings of South Punjab, Pakistan.
- Developed a strong understanding of conducting scientific research in a commercial context, including the day-to-day operations of a bioscience startup.
- Acquired comprehensive experience in project execution, including procurement of consumables, record-keeping, and preparing technical and financial reports for funding agencies.
- Authored and published an educational booklet in the local language to disseminate knowledge among veterinarians, sheep breeders, and para-veterinary staff.
- Successfully managed the planning, approval, and execution of training

EDUCATION

Ph.D.	Theriogenology, University of Veterinary & AS, Lahore 2019-2024
M.Phil.	Theriogenology, University of Veterinary & AS, Lahore 2016-2018
DVM	Veterinary Sciences, First Class, UVAS, 2011 - 2016

PUBLICATION

Journal Articles

- | | |
|------|---|
| 2024 | Muhammad Tayyab Khan , Ejaz Ahmad, Muhammad Rizwan Yousaf, Muhammad Oneeb, Muhammad Saleem Akhtar, Muhammad Irfan-ur-Rehman Khan. Optimizing laparoscopic artificial insemination in Lohi sheep: Effects of timing, sperm concentration and body condition on fertility outcome in subtropical climates. https://doi.org/10.1111/rda.14725 . |
| 2024 | Muhammad Tayyab Khan , Ali Husnain, Ejaz Ahmad, * Muhammad Irfan-ur-Rehman Khan, Muhammad Rizwan Yousaf, Muhammad Oneeb, Tanveer Ahmad Factors influencing pregnancy rate and loss after laparoscopic AI with frozen-thawed semen in Lohi sheep under subtropical conditions. https://doi.org/10.1111/rda.14579 . |
| 2024 | Muhammad Tayyab Khan , Muhammad Irfan-ur-Rehman Khan, Tehmina Yasmin, Ghulam Shabbir Khan, Amjad Riaz Effect of Ginseng on Blood Lipid Profile, Testosterone Level and Epididymal Sperm Quality of Aged Balb/C Mice. https://dx.doi.org/10.17582/journal.pjz/20230323090320 |
| 2023 | Muhammad Tayyab Khan , Ejaz Ahmad, Muhammad Irfan-ur-Rehman Khan, Muhammad Rizwan Yousaf, Muhammad Oneeb. Synergistic effect of extracellular adenosine triphosphate and quercetin on post-thaw quality and fertilization potential of Lohi ram sperm |

<https://doi.org/10.1016/j.cryobiol.2023.104593>.

- 2022 EJAZ AHMAD, Moeen Akhtar, Zahid Naseer, Muhammad Saleem Akhtar, Tanveer Ahmad, Tanveer Hussain, **Muhammad Tayyab Khan** Osmotic Tolerance and Freeze ability of Beetal Goat Sperm during Breeding and Nonbreeding Seasons 311-307, 2(13) 2320 (Animal Science Applied of Iranian Journal).

Book/Booklets

- 2023 Laparoscopic Artificial Insemination in Sheep (*Three editions Published in Local Language*)

Conference Papers Presented

- 2024 Muhammad Irfan-ur-Rehman Khan, Muhammad Nazim, **Muhammad Tayyab Khan**, Nasir Hameed, Imran Haider Shamsi, Abdul Rehman; Effect of ethylene glycol tetra acetic acid (EGTA) and heparin supplementation on phospholipase A2 activity in Tris-egg yolk-based extended semen of Beetal buck (*Poster P-51-Cryo2024*)
- 2023 **Khan, Muhammad Tayyab**; Niaz, Muhammad Muzammal; Khan, Ghulam Shabbir Effect of Dalmavital and Ovulik Plus on conception rate in Ovsynch synchronized Nili-Ravi buffaloes. 10.52973/rcfcv-wbc102
- 2021 Ejaz Ahmad, Muhammad Saleem Akhtar, Zahid Naseer, **Muhammad Tayyab Khan**, Tanveer Ahmad, Nabeel Ijaz, Saeed Murtaza, Muhammad Amjad Ali. Post-Thaw Quality of Beetal Goat Sperm Cryopreserved During Late Summer and Winter Seasons, Cryobiology, Volume 103, 2021, Page 199, <https://doi.org/10.1016/j.cryobiol.2021.11.141>

Competitive Grants and Fellowships

- 2017-2018 Selected as Intern under Prime Minister Youth Training Scheme (PMYTS)
- 2016-2018 Punjab Educational Endowment Fund (PEEF) scholarship for complete master degree.
- 2011-2016 Funded vet degree and a laptop on merit Govt. of Punjab, Pakistan

English Proficiency

- IELTS Academic** 6.5 Overall Band
- PTE Academic** 67 Overall Score

References

- 1. Dr. Muhammad Irfan-ur-Rehman Khan**
Associate Professor/Chairman
Department of Theriogenology, UVAS-Lahore.
Irfan.khan@uvas.edu.pk
- 2. Dr. Ejaz Ahmad**
Associate Professor
Department of Clinical Sciences, FVS,
FVS, Bahauddin Zakriya University
Ejaz.ahmad@bzu.edu.pk