

## CURRICULUM VITAE

**Dr. Rifat Ullah Khan**



### CONTACT INFORMATION

Kote Mehter Post Office  
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### PERSONAL INFORMATION

**Father's Name:** Naqib Ullah Khan

**Nationality:** Pakistani

**Domicile:** Bannu

**C.N.I.C #** 11101-7886617-3

**Date of Birth:** 12-02-1980

**Gender:** Male

**Marital Status:** Single

**Permanent Address:** Kote mehter Post Office Ghoriwala Bannu

**Job Title:** Assistant Professor

**Job Place:** Department of Animal Health, The University of Agriculture, Peshawar, Pakistan

### ACADEMIC BACKGROUND

DEGREE	University/ Board	DIVISION	YEAR
PhD (Vet. Physiology)	University of Agriculture Faisalabad, Pakistan	1 <sup>st</sup>	2012
M.Sc (Hons)	NWFP Agricultural University Peshawar, Pakistan	1 <sup>st</sup>	2006
Doctor of Veterinary Medicine (DVM)	University of Veterinary and Animal Sciences Lahore, Pakistan	1 <sup>st</sup>	2002
F.Sc (Pre-Medical)	B.I.S.E Bannu	1 <sup>st</sup>	1997
Matric	B.I.S.E Bannu	1 <sup>st</sup>	1995

## Research Publications

- 1) Mushtaq, M., S. Naz, S. Khan, S. Rahman and **R.U. Khan**. 2013. In vivo effect of *Berberis lyceum* and *Silybum marianum* on production performance and immune status in broiler chicks. *Archiv Tierzucht* (In press). doi: 10.7482/0003-9438-56-091 IF: 0.464
- 2) **Khan, R.U.**, Z.U. Rahman, I. Javed and F. Muhammad. 2013. Serum antioxidants and trace minerals as influenced by vitamins, protein and probiotics in male broiler breeders. *Journal of Applied Animal Research*, (Accepted)
- 3) **Khan, R.U.** and S. Naz. 2013. Application of probiotics in poultry production. *World's Poultry Science Journal*, 69:621-632.
- 4) **Khan, R.U.**, Z.U. Rahman, I. Javed and F. Muhammad. 2013. Effect of vitamins, protein level and probiotics on immune response of molted male broiler breeders. *Journal of Animal Physiology and Animal Nutrition*, (In press, DOI: 10.1111/jpn.12087) Impact factor 0.855.
- 5) **Khan, R.U.**, Z.U. Rahman, I. Javed and F. Muhammad. 2013. Supplementation of vitamins, probiotics and proteins on oxidative stress, enzymes and hormones in post-molted male broiler breeder. *Archiv Tierzucht* (In press; doi: 10.7482/0003-9438-56-061) IF: 0.464
- 6) **Khan, R.U.**, Z.U. Rahman, I. Javed and F. Muhammad. 2013. Supplementation of dietary vitamins, protein and probiotics on semen traits and immunohistochemical study of pituitary hormones in zinc-induced molted broiler breeders. *Acta Histochemica*, In press, dx.doi.org/10.1016/j.acthis.2013.02.006, Impact factor 1.829
- 7) **Khan, R.U.**, Z.U. Rahman, I. Javed and F. Muhammad. 2013. Effect of vitamins, probiotics and protein level on semen traits and seminal plasma biochemical parameters of post-molt male broiler breeders. *British Poultry Science*, 54(1):120-129. Impact factor 1.005
- 8) **Khan, R.U.**, Z.U. Rahman, I. Javed and F. Muhammad. 2012. Effect of vitamins, probiotics and protein on semen traits in post-molt male broiler breeders. *Animal Reproduction Science*, 135(1-4):85-90. Impact factor 1.75
- 9) **Khan, R.U.**, Z.U. Rahman, I. Javed and F. Muhammad. 2012. Effects of vitamins, probiotics and protein level on semen traits and some seminal plasma macro and micro minerals of male broiler breeders after zinc-induced molting. *Biological Trace Element Research*, 148: 44-52. Impact factor 1.923
- 10) **Khan, R.U.**, Z. Nikosefat, V. Tufarelli, S. Naz, M. Javdani and V. Laudadio. 2012. Garlic (*Allium sativa*) supplementation in poultry diet: effect on production and physiology. *World's Poultry Science Journal*, 68 (3): 417-424. Impact factor, 1.476
- 11) **Khan, R.U.**, S. Naz, Z. Nikousefat, M. Selvaggi, V. Laudadio and V. Tufarelli. 2012. Effect of ascorbic acid in heat-stressed poultry. *World's Poultry Science Journal*, 68 (3): 477-490.
- 12) V. Laudadio, A. Dambrosio, G. Normanno, **R.U. Khan**, S. Naz, E. Rowghani, V. Tufarelli. 2012. Effect of reducing dietary protein level on performance responses and some microbiological aspects of broiler chickens under summer environmental conditions. *Avian Biology Research*, 5(2):88-92. Impact factor, 0.44
- 13) **Khan, R.U.**, S. Naz, V. Tufarelli and V. Laudadio. 2012. Role of chromium in poultry nutrition. *World's Poultry Science Journal*, (Accepted) 2010 Impact factor,

- 1.476
- 14) **Khan, R.U.**, S. Naz, V. Tufarelli and V. Laudadio. 2012. Effect of chromium in heat-stressed poultry. *World's Poultry Science Journal* (Accepted) Impact factor, 1.476
  - 15) **Khan, R.U.**, S. Naz, Z. Nikousefat, V. Tufarelli and V. Laudadio. 2012. *Thymus vulgaris*: alternative to antibiotics in poultry feed. *World's Poultry Science Journal*, 68 (3):401-408.
  - 16) **Khan, R.U.**, S. Naz, V. Tufarelli and V. Laudadio. 2012. Potential applications of ginger (*Zingiber officinale*) in poultry diet. *World's Poultry Science Journal*, 68 (2): 245-252. Impact factor, 1.476
  - 17) Tufarelli, V., **R.U. Khan**, D. Mazzei and V. Laudadio. 2012. Performance and carcass measurements of ewe lambs reared in a feedlot and fed wheat (*Triticum durum* Desf.) middling total mixed rations in the summer season. *Tropical Animal Health and Production*, 44:779-784. 2010 Impact factor, 1.003
  - 18) **Khan, R.U.**, V. Laudadio and Tufarelli, V. 2012. Semen traits and seminal plasma biochemical parameters in White Leghorn layer breeders. *Reproduction in Domestic Animals*, 37:190-195. 2010 Impact factor, 1.606
  - 19) Tufarelli V., Naz S., **Khan R.U.**, Mazzei D., Introna M., Laudadio V. 2012. Milk quality, manufacturing properties and blood biochemical profile from dairy cows fed peas (*Pisum sativum* L.) as dietary protein supplement. *Archiv Tierzucht*, 55(2): 132-139. Impact factor 0.416
  - 20) Tufarelli, V., **R.U. Khan**, Domenico Mazzei and V. Laudadio. 2012. Performance and carcass measurements of ewe lambs reared in a feedlot and fed wheat (*Triticum durum* Desf.) middling total mixed rations in the summer season. *Tropical Animal Health and Production*, 44:779-784. Impact factor, 1.003
  - 21) Laudadio, V., L. Passantino, A. Perillo, G. Lopresti, A. Passantino, **R.U. Khan** and V. Tufarelli. 2012. Productive performance and histological features of intestinal mucosa of broiler chickens fed different dietary protein levels. *Poultry Science*, 91(1):265-270. 2010 Impact factor, 1.582
  - 22) Tufarelli, V., **R.U. Khan** and V. Laudadio. 2012. Evaluating the suitability of field beans as a substitute for soybean meal in early-lactating dairy cows: production and metabolic responses. *Animal Science Journal*, 83:136-140. Impact factor, 0.855
  - 23) **Khan, R.U.**, Z.U. Rahman, Z. Nikousefat, M. Javdani, V. Laudadio and V. Tufarelli. 2012. Vitamin E: Pharmaceutical role in avian male fecundity. *World's Poultry Science Journal*, 68(1): 63-70. Impact factor, 1.476
  - 24) **Khan, R.U.**, Z.U. Rahman, Z. Nikousefat, M. Javdani, V. Tufarelli, C. Dario, M. Selvaggi, and V. Laudadio. 2012. Immunomodulating effects of vitamin E in broilers. *World's Poultry Science Journal*, 68(1): 31-40. Impact factor, 1.476
  - 25) **Khan, R.U.**, S. Naz, M. Javadani, Z. Nikousefat, M. Selvaggi, V. Tufarelli and V. Laudadio. 2012. The use of turmeric (*Curcuma longa*) in poultry diets. *World's Poultry Science Journal*, 68 (1):97-103. Impact factor, 1.476
  - 26) Tufarelli, V., **R.U. Khan** and V. Laudadio. 2011. Feeding of wheat middlings in lamb total mixed rations: effects on growth performance and carcass traits. *Animal Feed Science and Technology*, 17(1): 130-135. Impact factor, 1.72
  - 27) Tufarelli, V., **R.U. Khan** and V. Laudadio. 2011. Effect on milking performance of vitamin-trace element supplements to early lactation Italian brown cows grazing ryegrass (*Lolium Multiflorum*) pasture. *Asian-Australian Journal of Animal Science*,

- 24(9):1227-1232. Impact factor, 0.487
- 28) Tufarelli, V., **R.U. Khan** and V. Laudadio. 2011. Vitamin and trace element supplementation in grazing dairy ewe during the dry season: effect on milk yield, composition and clotting aptitude. *Tropical Animal Health and Production*, 43 (5): 955-960. Impact factor, 1.003
  - 29) **Khan, R.U.**, Z. Nikousefat, M. Javadani, V. Tufarelli and V. Laudadio. 2011. Zinc-induced molting: production and physiology. *World's Poultry Science Journal*, 67:497-506. Impact factor, 1.476
  - 30) **Khan, R.U.**, S. Naz, Z. Nikousefat, V. Tufarelli, M. Javadani, N. Rana and V. Laudadio. 2011. Effect of vitamin E in heat-stressed poultry. *World's Poultry Science Journal*, 67(3):469-478. Impact factor, 1.476
  - 31) **Khan, R.U.** 2011. Antioxidants and poultry semen quality. *World' Poultry Science Journal*, 67(2): 297-308. Impact factor, 1.476
  - 32) **Khan, R.U.**, F.R. Durrani and N. Chand. 2010. Influence of feed supplementation with *Cannabis sativa* on quality of broilers carcass. *Pakistan Veterinary Journal*, 30(1): 34-38. Impact factor, 0.707
  - 33) Javed, M.T., F.A. Farooqi and **R.U. Khan**. 2009. Epidemiological Basis of Bovine Tuberculosis in Buffaloes. *Pakistan Journal of Zoology*, (Suppl. Ser., No.9) Pp: 417-420. Impact factor, 0.2
  - 34) Tufarelli, V., **R.U. Khan** and V. Laudadio. 2011. Feed intake in Guinea fowl, layer hen and pheasant as influenced by particle size of pelleted diets. *International Journal of Poultry Science*, 10(3): 238-240.
  - 35) Ali, Z., G. Muhammad, T. Ahmad, **R.U. Khan**, S. Naz, F.A. Farooqi, M. N. Manzoor and A.R. Usama. 2010. Prevalence of caprine sub-clinical mastitis, its etiological agents and their sensitivity to antibiotics in indigenous breeds of Kohat, Pakistan. *Pakistan Journal of Life and Social Sciences*, (HEC Recognized in Y category) 8(1): 63-67.
  - 36) Khan, F.U., F.R. Durrani, A. Sultan, **R.U. Khan** and S. Naz. 2009. Effect of Fenugreek (*Trigenella Feonum-Gracum*) seed extract on visceral organs of broiler chicks. *ARNP Journal of Agricultural and Biological Sciences*, 4: 58-60.
  - 37) Javed, M., F.R. Durrani, Abdul Hafeez, **R.U. Khan** and I. Ahmad. 2009. Effect of aqueous extract of plant mixture on carcass quality of broiler chicks. *ARNP Journal of Agricultural and Biological Sciences*, 4:37-40.
  - 38) Zahoor, A., M.N. Manzoor, A.R. Usama, A. Ahmad, S. Rehman and **R.U. Khan**. 2011. Epidemiology, electrolytes balance and treatment strategy of equine anhidrosis. *Research Opinions in Animal & Veterinary Sciences*, 1:4-7.
  - 39) Rehman, S., F.R Durrani, N. Chand, **R.U. Khan** and F. Rehman. 2011. Comparative efficacy of different schedules of administration of medicinal plants infusion on hematology and serum biochemistry of broiler chicks. *Research Opinions in Animal & Veterinary Sciences*, 1:8-14.
  - 40) Rehman, Z.U., S. Khan, N. Chand, K. Khan, **R.U. Khan**, M. Arshad, A.U. Akhtar and A.J. Tanveer. 2013. Association of water based infusion of allium sativum and withania somnifera with serum lipid profile of broiler chicks. *Sarhad Journal of Agriculture*, 29(2): 249-254
  - 41) **Khan, R.U.**, F.R. Durrani, N. Chand, S. Naz, F.A. Farooqi and M.N. Manzoor. 2009. Effect of Cannabis sativa fortified feed on muscle growth and visceral organs in

broiler chicks. *International Journal of Biology and Biotechnology*, 6:179-182.

#### Abstracts Published in National and International Proceedings/Conferences

- 1) Zia-ur-Rahman and **Rifat Ullah Khan**. 2012. Effect of probiotics, proteins and vitamins on seminal plasma minerals of male broiler breeders after zinc induced molting. 3<sup>rd</sup> Mediterranean Poultry Summit and 6<sup>th</sup> International Poultry Conference, Alexandria, 26-29 March. Abstract No. 10283
- 2) Zia-ur-Rahman and **Rifat Ullah Khan**. 2012. Effect of probiotics, proteins and vitamins on semen traits in male broiler breeders. 3<sup>rd</sup> Mediterranean Poultry Summit and 6<sup>th</sup> International Poultry Conference, Alexandria, 26-29 March. Abstract No. 10284
- 3) **Rifat Ullah Khan**. 2012. *Thymus vulgaris*: alternative to antibiotics in poultry feed. 3<sup>rd</sup> Mediterranean Poultry Summit and 6<sup>th</sup> International Poultry Conference, Alexandria, 26-29 March. Abstract No. 10058
- 4) Naz, Shabana, Shahnaz Akhtar Rana, Naureen Rana and **Rifat Ullah Khan**. 2011. Effect of feeding brodifacoum and food energy inhibitor on heart and liver enzymes of house rats (*Rattus rattus*). 31<sup>st</sup> Pakistan Congress of Zoology (International). Azad Jamu and Kashmir Univeristy, 21-23 April
- 5) Naz, Shabana, Shahnaz Akhtar Rana, Naureen Rana and **Rifat Ullah Khan**. 2011. Seasonal effects on the measurement dynamics of different body part or organs of house rats (*Rattus rattus*) in Faisalabad, Pakistan. 31<sup>st</sup> Pakistan Congress of Zoology (International). Azad Jamu and Kashmir Univeristy, 21-23 April
- 6) Zia-ur-Rahman, Shaukat Ali Shaukat, Abdul Majeed Cheema, **Rifat Ullah Khan** and Mansur Abdullah. 2009. Immunohistochemistry of adenohipophysis in lactating and non lactating camels (*Camelus dromedarius*). 35<sup>th</sup> All Pakistan Science Conference. Karachi University Journal of Science 37: 1 & 2.
- 7) Zia-ur-Rahman, Nuzhat Sharif, Naheed Abbas, Asma Lodhi, **Rifat Ullah Khan** and Haseeb Anwar. 2009. Effect of ginger (*Zingiber officinale*) fortified feed on metabolic profiles, minerals and thyroid hormones in albino rats. 19<sup>th</sup> All Pakistan Food Science Conference. PCSIR Laboratories Complex, Lahore, Pakistan.
- 8) Zia-ur-Rahman, Mahwish Naseer, Naheed Abbas, Asma Lodhi, Haseeb Anwar and **Rifat Ullah Khan**. 2009. Effect of green onion fortified feed on the physiochemical, enzymes, hormones and mineral profile of the albino rats. 19<sup>th</sup> All Pakistan Food Science Conference. PCSIR Laboratories Complex, Lahore, Pakistan.
- 9) Muhammad Tariq Javed, Farooq Ahmad Farooqi and **Rifat Ullah Khan**. 2009. Incidence of bovine tuberculosis and its effect on haematological profile in dairy buffaloes. 6<sup>th</sup> Asian Buffalo Conference, Lahore, Pakistan. 27-30 October. Page No: 70.
- 10) Zia-ur-Rahman; Haseeb Anwar; Anwar-ul-Haq Anwar; Abdul Malik and **Rifat Ullah Khan**. 2009. Dynamics of cystic fluid, serum biochemical, amino acid and mineral profile in *Echinococcus granulosus* affected camels. The second conference of the international Society of Camelid Research and Development. Djerba, Tunisia: 11<sup>th</sup> -14<sup>th</sup> March. Abstract No: 25.
- 11) Mureed Abbas, Zia-ur-Rahman, Haseeb Anwar, Abdul Malik, Muhammad Ajmal Jalvi and **Rifat Ullah Khan**. 2009. Relationship study of mineral status with reference to soil, water, serum, urine and faeces at different physiological stages in camels (*camelus dromedarius*). The second conference of the international Society of Camelid Research and Development. Djerba, Tunisia: 11<sup>th</sup> -14<sup>th</sup> March. Abstract No: 138.

- 12) Zia-ur-Rahman, **Rifat Ullah Khan**, Abdul Malik, Muhammad Ajmal Jalvi, Haseeb Anwar and Mureed Abaas. 2009. Biomarkers of health and minerals status in pregnant camels (*Camelus dromedarius*). The second conference of the international Society of Camelid Research and Development. Djerba, Tunisia: 11<sup>th</sup> -14<sup>th</sup> March. Abstract No: 146.
- 13) **Rifat Ullah Khan**, F.R. Durrani, Niela Chand, S. M. Suhail, Zia-ur-Rahman and Hasib Anwar. 2009. Effect of feed added *Cannabis sativa* on the growth performance of broiler chicks. 5<sup>th</sup> World's Poultry Conference, Tabba, Egypt: 10-13 March. Abstract No: 20.
- 14) Muhammad Javed, **Rifat Ullah Khan**, Fazil-Raziq Durrani, Abdul Hafiz, Zia-ur-Rahman and Hasib Anwar. 2009. Impact of aqueous extract of mixture of locally available plants on growth performance of broiler chicks. 5<sup>th</sup> World's Poultry Science Conference, Tabba, Egypt 10-13 March. Abstract No. 34.
- 15) Rahman ZU, Khaliq T, Hassan IJ, Ijaz A, Malik A, **Ullah R.** (2008) Plasma haematochemical profile of recombinant bST injected Nilli Ravi buffalos. WCAP-2008. Abstract No. 5268.
- 16) Zia-ur-Rahman, Ayesha Bibi, Nighat Bhatti, Naheed Abbas, **Rifat Ullah Khan** & Hasbeeb Anwar. 2008. Metabolic, minerals and thyroid hormones profile in normal and hemophilic patients. 18<sup>th</sup> National Chemistry Conference, Lahore, Pakistan. 25-27<sup>th</sup> February. Page No. 76.
- 17) Zia-ur-Rahman, Rahat Amin, Nighat Bhatti, Naheed Abbas, **Rifat Ullah Khan** & Hasbeeb Anwar. 2008. Metabolic, minerals and thyroid hormones profile of young male rats fed marijuana. 18<sup>th</sup> National Chemistry Conference, Lahore, Pakistan. 25-27<sup>th</sup> February. Page No. 105.
- 18) Zia-ur-Rahman, Rahat Amin, Nighat Bhatti, Naheed Abbas & **Rifat Ullah Khan**. 2008. Plasma Biochemical Profile of Burned Human Patients. 18<sup>th</sup> National Chemistry Conference, Lahore, Pakistan. 25-27<sup>th</sup> February. Page No. 106.
- 19) Zia-ur-Rahman, Rahat Amin, Nighat Bhatti, Naheed Abbas & **Rifat Ullah Khan**. 2008. Metabolic, minerals and thyroid hormones profile of young rats fed opium. 18<sup>th</sup> National Chemistry Conference, Lahore, Pakistan. 25-27<sup>th</sup> February. Page No. 107.

### Books published

- 1) **Khan, R.U.**, S. Naz and V. Tufarelli. 2012. Hemp seeds and broiler performance. LAP Lambert Academic Publishing, Germany. (ISBN 978-3-659-11926-2)
- 2) Naz, S., S. A. Rana, and **R. U. Khan**. 2012. Biodiversity of House and Soft Furred Field Rats. LAMBERT Academic Publishing, Germany.

### Scholarship won

HEC 5000 Indigenous PhD Scholarship Batch IV	2007-2011
HEC Merit Talent Scholarship (during M.Sc (Hons)	2005

### Awards

**Research Productivity Award-2012 (Pakistan Council for Science and Technology Islamabad)**

### Projects Won

<b>Title of project</b>	<b>PI/CoPI</b>	<b>Amount (Rs)</b>	<b>Funding agency</b>	<b>Year of completion</b>
Reproductive characteristics of Beetal male goats as influence by the dietary supplementation of alpha-tocopherol	PI	0.5 Million	Higher Education Commission (HEC) of Pakistan	2012

### **Students supervised**

#### **PhD**

<b>Name of student</b>	<b>Department</b>	<b>Research topic</b>
Zia-ur-Rahman	Poultry Science	Effect of olive oil on poultry performance and antioxidant system in broilers during heat stress

#### **MSc (Hons)**

<b>Name of student</b>	<b>Department</b>	<b>Research topic</b>
Hafiz AbdulMajid	Livestock Management	Reproductive characteristics of Beetal male goats as influence by the dietary supplementation of alpha-tocopherol
Hafiz ur Rahman	Livestock Management	Effect of zinc on semen parameters quality of male bucks
Maumber Shah	Livestock Management	Effect of heat stress on semen quality of cattle bull
Shams Ullah	Poultry Science	Comparative effect of natural and artificial insemination in quails and their effect on egg quality
Tehsin Ullah	Animal Nutrition	Effect of Nagilla sativa on growth and biochemical parameters of broilers
Shams-ul-Hayat	Poultry Science	Comparison of natural mating and artificial insemination in Japanese quail
Muhammad Shoib Khan	Poultry Science	Effect of stocking density on performance and oxidative stress and behaviour of broilers
Muhammad Ibrar	Poultry Science	Effect of magnesium on the performance, tissue mineralization and oxidative stress of broilers

Momin Khan	Poultry Science	Effect of various semen extenders on quail eggs hatchability and fertility
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### Research Articles Reviewed for Journals

Reproduction in Domestic Animals; Pakistan Journal of Life and Social Sciences; Jordan Journal of Animal Science; Poultry Science; Animal Science; World's Poultry Science; Archives of Animal Breeding; African Journal of Biotechnology; International Journal of Biometeorology; Vitamin and Trace Element; Reproduction, Fertility and Development; African Journal of Ecology; Agriculture Research Journal, Acta Agriculturae Scandinavica, Section B - Plant Soil Science

### External Examiner for Viva Voce

Year	Student name	Degree	Department	Host university
2012	Sobia Kanwal	M.Phil	Wildlife and Fisheries	G.C. College University, Faisalabad, Pakistan
2013	Rana Muhammad Arshad	M.Phil	Wildlife and Fisheries	S

### EMPLOYMENT RECORD

Scale of Pay	Designation	Dates		Name and address of Employer
		From	To	
BS-17	Veterinary Officer	3-3-2007	19-08-2007	Livestock and Dairy Development Peshawar, Pakistan
BS-19	Assistant Professor	31-1-2012	31-1-2013	The University of Agriculture, Peshawar, Pakistan
BS-19	Assistant Professor	01-2-2013	15-05-2013	The University of Agriculture, Peshawar, Pakistan

### Courses Taught

#### Undergraduate (DVM)

1. Neuromuscular Physiology and Endocrinology (Theory and Practical)
2. Digestive Physiology and Lactation (Theory and Practical)



### 3. Cardiovascular, Respiratory and Renal Physiology (Theory and Practical)

#### **Postgraduate**

1. Artificial Insemination (Theory and Practical)
2. Physiological Biochemistry of Preservation of Semen (Theory and Practical)

#### **Workshops Attended**

One day provincial orientation and consultative workshop ‘Livestock for Life’ Project Relief International 8<sup>th</sup> March, 2012.

#### **Symposiums attended**

One day Symposium Livestock production- National and global perspective organized by Faculty of Veterinary Science and Faculty of Animal Husbandry, On March 17, 2011, 50 years of Advancing Agricultural Technology and Training Golden Jubilee Celebrations Year 2011, University of Agriculture, Faisalabad.

#### **Trainings**

Ensuring Training Effectiveness, 2012, jointly conducted by (Higher Education Commission of Pakistan) and The University of Agriculture, Peshawar.

## **Membership of Societies**

International Society of Camelid Research and Development (ISOCARD)	2008 up to date
Australian Society of Animal Production	2011 up to date

## **Technical Skills**

- Determination of various blood components and assays
- The **Comet Assay** and **Acradin Orange Test** to detect the extent of DNA Damage by Horizontal Gel Electrophoresis and Florescence staining.
- The **in-vitro macrophages** and their engulfment responses against feeding of SRBC (opsonized and unopsonized) to detect cell mediated immunity.
- **Immunocytochemical Localization** and staining of pituitary hormone producing cells to seek their physiological and histological status.
- Novel spectrophotometer assay to determine **Total Antioxidant Capacity (TAC)** and **Total Oxidant Status (TOS)** to measure the oxidative stress index of the body.
- Antioxidant related enzymes (**Paraoxonase, Arylesterase, Ceruloplasmin, Homocysteine**) activity by spectrophotometer methods.
- Indirect ELISA method to detect hormones (**T3, T4, Cortisol, Estrogen, Progesterone and Testosterone**) by using ELISA reader.
- **HA and IHA** Test to detect the antibody titer to seek humoral immune response.

## **Commands in Instruments**

- Microtome (Section cutting for animal tissue)
- Fluorescent Microscopy
- Atomic Absorption Spectrophotometer
- ELISA Strip Reader
- Semi Auto Analyzer (Spectrophotometer)
- Power lab Tutor (Automated Instrument for various physiological parameters)
- Different Centrifuge machines (Micro, Temperature control etc.)
- pH Metery
- Kymograph