

## LIST OF AVAILABLE SCIENTIFIC/RESEARCH EQUIPMENTS AND TESTING FACILITY IN UNIVERSITY

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<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Gas chromatograph	GC-N-U74 Agilent Technology Singapore 11.11.2004	Pesticides	FID Detector, Manual Injector, Nitrogen Gas as a carrier	10 Minutes	110/-
HPLC	SCL-10A, LC-10NT, CTO-10AS, SPD- 10A, SIL-10AD Shimadzu Japan 07.09.2004	Amino Acids peptides and proteins, Pesticide Residues Sugars Carboxylic Acids	Gradient and Isocratic, UV- Visible Detector, Column C18 and Setting Oven Temperature	10 Minutes	130/-
Plant Growth Chamber	MIR-350H Sanyo Japan 13.03.2001	Light, relative humidity, temperature 5°C to 40°C and timer program	Lights, Temperature, Humidity, and time setting program	24 Hours	700/- per week
Spectrophotometer	Cecil 2021 CE UK 13.03.2001	To find concentration, absorbance, transmittance of solutions/samples	Wavelength 200-999 nm, Absorbance/Concentration / Transmittance mode, color determination	02 Minutes	10/-
DNA Sequencer	CEQ-800, Beckman Coulter Switzerland 09.12.2004	Genotype of organisms	As per described method by Beckman Company	24 Hours	

Total Organic Carbon Analyzer	ASI-V, VCPH, TNM-1, SSM-5000 A, Shimadzu Japan 07.09.2004	To find total nitrogen, organic carbon, inorganic carbon	Auto sampler and manual system, standards of IC (NAHCO <sub>3</sub> +Na <sub>2</sub> CO <sub>3</sub> ) Standards of TC (C <sub>6</sub> H <sub>4</sub> ), Acid Digestion samples (Liquid Form)	05 Minutes	50/-
Freeze Drier	CRYODOS-50 Telstar Spain 02.09.2004	To get the powder form of liquid samples	Temperature -40°C and vaccum Pump	24 Hours	60/-
Ultra Centrifuge	Optima-100P. US Beckman Coulter Switzerland 09.12.2004	Separation of virus enzymes	Speed upto 100000rpm. Rotors available: 41 Ti, 55 Ti, 60 Ti, 100 Ti	01 Hours	100/-
Flame Photometer	Jenway-PFP-7 13.03.2001	To analyze Na and K	Require standards of Na and K, fuel Natural gas and air compressor, digestion samples (in liquid form)	05 Minutes	10/-
Oven	(i) UE-600 Memmert Germany (ii) 100-800 Memmert Germany	For drying soil samples, chemicals, salts, etc	Setting the require Temperature 300°C	24 Hours	5/-
Porometer	AP-4 IRMECO England 08.09.2004	Plant water potential measurement	First calibration plate of six points with wet filter	03 Minutes	
Confocal Microscope	TSI, Sr. No. 291300105, Canada, 07.03.2005	Tissue study through large image	Fix the sample on glass slide and put the slide into instrument and open the picture by the gamma camera, study of nucleus, cell and etc	05 Minutes	30/-

Osmometer	Osmomat-030, Germany, 13.03.2001	The determination of total osmolality in aqueous solution	Standardize the instrument at zero setting and put the sample in the measuring vessel 50ul and put the vessel into the measuring sensor	30 minutes	50/-
Atomic Absorption Spectrometer	GBC-932, Plus, Australia, 14.03.2001	Detection of metals (Mg, Na, Mo, Ca, Co, K, Ag, Zn, Al, working Pb, Fe, Cr, Cd, Cu, Mn, Ni, working with low intensity)	Gases of Nitric Oxide for Ca and Acetylene Gas with air is provided to furnace and put the required Halogen Lamp and set the program (Manual System), Digestion samples	01 Minute	20/-
Centrifuge Small	HarmI-Z-200A, 13.03.2001	To harvest microbial cells	Speed Max 6000rpm, time 15 minutes	30 Minutes	5/-
pH Meter	Hanna-210, 13.03.2001	pH measurement	Standardize the instrument by putting the electrode into the buffer of values 4.01, 7.01, 9.01 etc	15 Minutes	2/-
Chloride Analyzer	Jenway-PCL M-3UK, 13.03.2001	For clinical determinations and specifically for industrial applications	Standardize the instrument by the gelatin solution and buffer and titrate	05 Minutes	20/-
<b>Prof. Dr. Nadeem Akhtar Abbasi</b>	<b>nadeemabbasi65@yahoo.com 051-9290771</b>	<b>Department of Horticulture</b>			
<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Dawlance Refrigerator	Dawlance	Chemicals storage	Sample storage	Depends upon use	Rs. 5/day

Waves Triplet Deep Freezer	Waves	Chemicals storage	Sample storage	Depends upon use	Rs. 5/day
Micro Pipette Adjustable Digital Type	Eppendorf	Liquid chemicals measurement	Measurement of small volume	Depends upon use	Rs. 5/day
Analytical Balance	Shimadzu Japan	Weighing of chemicals	weighing	Depends upon use	Rs. 5/day
Vessels for liquid Nitrogen	YDS 30 China	Storage of Liquid nitrogen	For grinding of leaf sample at freeze temperature	Depends upon use	Rs=200/litter
Centrifuge Machine	Sigma	Separation of serum and on molecular wt. basis	Centrifuge at low temperature	40min	Rs=50/sample
Micro Centrifuge,	Sigma	Separation of serum	Centrifuge at low temperature	30min	Rs=20/sample
Autoclave	Hiryama japan	Sterilization	Autoclave	2hour	Rs; 10/sample
Water Bath Shaker,	China	Wet heat treatment	incubator	1hour	Rs: 10/sample
Vacuum Pump.	Utech	Create vacuum	filtration	30min	Rs: 30/sample
Drying Oven	Memmert Germany	Drying of samples	Nutrient analysis	Several days	Rs: 50/sample
Soil Moisture Meter	Aquaterr USA	Measuring of moisture content of soil	To measure soil moisture		Rs: 100/hac
Orion benchtop pH meter	Orion benchtop pH	pH measurer	For pH of sample	5min	Rs: 10/sample
Laminar flow cabinet	Labtechkorea	Works condition aseptic	Work in aseptic condition	1 hour	Rs: 100/hour

L.G. Microwave oven	Model: 724	Heating of samples	Heating of samples	30 min	Rs: 10/sample
Sterilizer bacti-cinerator ref	fisher scientific USA	sterilizing	For sterilizing	Depends upon samples	Rs: 20/sample
Laboratory fume hood	Local made	Fuming chemicals	Handling of dangerous chemicals	1 hour	Rs: 50/hour
Zoom Stereo microscope	Meiji Techno Japan	Magnification	Magnification of samples	5 min	Rs: 5/sample
Thermometer	Local made	Temperature measurement	Temperature measurement	5 min	Rs: 5/sample
Leaf area meter	CID INC. USA	Leaf area measurer	Leaf area measurer	5 min	Rs: 5/sample
Hot plate stirrer	Velpscientificia	staring	For staring	10 min	Rs: 5/sample
Cold storage chamber supplied by MED LAB services	Local Made	Storage of research items	Storage of samples at low temperature	Depends upon samples	Rs: 10/hour
Fruit pressure tester	Italy	Famines measure	Famines measure	5 min	Rs: 5/sample
Conductivity meter	WTW Germany	Electrical conductivity	Electrical conductivity	5 min	Rs: 5/sample
ULT Freezer	Sanyo	Extreme freezing	Storage of samples at ultra low temperature	Depends upon samples	Rs: 20/hour/ sample
UV-vis Spectrophotometer	Optima	Light wane length	To measurement light absorption	1 min	Rs: 5/sample

UV.Transilluminator	Wealtec	DNA band	DNA band	5 min	Rs: 5/sample
Gel Unit	Belgum	Gel run for DNA	Gel run for DNA	1 hour	Rs: 50/gel run
Vortex Mixer	Heidolph	Mixing of solution	Mixing of solution	1 min	Rs: 5/sample
Elsa reader with washer	HT company	Virus detector and washer	Virus detecting and washing		Rs: 10/sample
Soxhlet Apparatus	Pyrex	For oil extraction	For oil extraction		Rs: 10/sample
<b>Prof. Dr. Tariq Masud</b>	<b>drmasud_tariq@hotmail.com051-9290694</b>	<b>Food Technology</b>			
<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Refractrometer	UK2008	TSS	Visual	30 min	100/-
pH meter	UK2001	pH	Visual	30 min	100/-
Soxhlet Fat Extractor	Pakistan1998	Fat test	Chemical	1 day	500/-
Hot Air Oven	Germany2004	Moisture	Physical	1 day	500/-
Muffle Furnace	USA2002	Ash/minerals	Physical	1 day	1000/-
Tintometer	UK2002	Color determination	Physical	1 day	1000/-
Micro Kjeldhal	UK2003	Protein determination	Chemical	1 day	1000/-
Viscometer Digital	USA2004	Viscosity	Physical	1 day	500/-
PCR	UK2005	Manipulation of DNA	Biochem.	1 week	3000/-
Spectrophotometer	UK2012	Color absorbance	Physical	1 day	500/-
Electrophoresis	Local2003	Protein determination	Biochem.	2 days	2000/-
<b>Prof. Dr. Muhammad Saleem Akhtar</b>	<b>msakhtar@uaar.edu.pk051-5858274</b>	<b>Department of Soil Science &amp; SWC</b>			

Name of Equipment	Make/Year of Manufacturing	Name of Test	Method of Analysis	Min duration required	Rate (Rs.) per sample
Plate Farm Scales	TCS-60 A Measured Scale 60 Kg Capacity, China		For weighting	5 Minutes	05/-
Muffle Furnace	Lenton Model F2  11/8 with PID), Germany		It is an economy ashing furnace with a traditional muffle element. It meets the requirement for a low cost unit which allow materials to be burnt rapidly at closely controlled temperatures	5 Hour	500/-
Pressure Plate Set Complete			It is used to determine relationships between water content and matric potential in soils	2 Days	1500/-
Polyscience Shaking water bath	USA		To shake the samples in controlled temperature	Depends on the experiment requirement	50/-
Sieve Shaker	Octagon Digital 2000		Normal shaking and mixing the suspensions	Depends on the experiment requirement	50/-
Polyscience 20-liter Water Bath	USA		To shake and mix the samples	Depends on the experiment requirement	50/-
Lovibond COD-Measurement Set-up System	a. ET 125 COD Reactor for 25 Std (16 mm diameter) b. Lovibond vario PC Spectrophotometer		Allow highly sensitive and precise water testing with minimum effort. It measures the amount of oxygen required for oxidation of the water component by photometric means	1 day	500/-

BOD Track Apparatus	a. BOD system/analysis Unit Digital b. Lovibond ET 618 Incubator/Thermostatically control	Used to determine the biological activity in water sample	2 hours	800/-
Soil Extraction Vacuum Pump	Model Rz2, Rotator type flow rate 2:5, Germany	Used to extract the filtrate from soil sample	Depends on the experiment requirement	50/-
Oxymeter		For oxygen concentration monitoring and testing in surface water	3 Hours	350/-
Undisturbed Soil Sampling Kit	5.7 cm diameter core, 2 wedge core tips, driving hammer, core extractor, spanner, strop wrench 12 cylinder caps 10 brass cylinder (6cm long)	Used to collect undisturbed soil samples	5 Minutes	50/-
Soil Textural Analysis Apparatus		To determine the relative proportion of sand, silt and clay in soil	1 day	250/-
Soil Permeability Apparatus		The soil permeability apparatus is used for the laboratory determination of permeability of soil using a constant or a variable head.	3 Hours	1500/-
Magnetic Stirrer	Barnstead/Thermolyne, USA, Model VS 46720-26	It employs a rotating magnetic field to cause a stir bar (also called flea) immersed in a liquid to spin very quickly, thus stirring it.	Depends on the experiment requirement	50/-
Electronic Balance	Analytical Digital Top Loading, Model AX-2W, Shimadzu	For weighing	2 Minutes	20/-



Oven	Precision digital temperature control, Germany Iremco Model, IM-250, thermostatic contrl, 220 volts.	It is used to dry the plant/soil samples at specific temperature	Depends on the experiment requirement	100/-
Bench Type Conductivity Meter		It allows for determination of total soluble salts in water/soil samples	30 Minutes	80/-
Triple Beam Field Balance	Model 750 OH oven Model 750, USA	It is well equipped to handle any weighing job, whether you are weighing solids, liquid and powders	5 Minutes	50/-
Plant Grinding Mill		Used for grinding of plant samples with different sizes	10 Minutes	100/-
pH meter	Jenway UK Model 3505 Digital	It is a handheld device used to test water/woil for its level of acidity or alkalinity.	30 minutes	80/-
Flame Photometer	Jenway UK Model PFP7	It offers a quick and easy method for the determination of a samples alkali/alkaline earth metals (calcium, Na, Li and K) content in soil/water/any other sample	5 min per sample extract analysis	300/ per element
Centrifuge Machine	Digital Model Universal-32 Hettich Germany 230-240 V, 50-60 Hz, 4 A, 700W	Perfectly smooth running at both high and low speeds, versatile and easily exchangeable accessories and small footprint. Used for sedimentation of cells, bacteria, yeasts, DNA/RNA and protein precipitates	Depends on the experiment requirement	70/-
Refrigerator	14 cubic feet	It is used to store soil and plant samples and chemical reagents.	Depends on the experiment requirement	60/day
Deep Freezer	14 cubic feet, Temperature range - 18°C	It is used to store soil and plant samples	Depends on the experiment requirement	60/day

Spectrophotometer	Model 5000 Irmeco, Germany	It measures the amount of light of a specified wavelength which passes through a medium.		30 min for sample extract analysis	300/element
Hand Operated Hydraulic Extruder		Used for the extrusion of undisturbed soil samples from thin-wall sample tubes		10 minutes	50/-
Double Ring Infiltrometer		It is device used to measure the rate of water infiltration into soil or other porous media.		1 hour	500/-
Various Diameters Soil Augers		Soil augers are commonly used for obtaining disturbed soil samples at or near the surface		5 minutes	60/-
Pump Water Sampler Unit		It is used to collect pore water in near surface profiles, for the analysis of nutrients, pollutants, or other dissolved ions that have an effect on ground waters, environment and crop health.		30 Minutes	150/-
Flumes	ELE UK	Describes the volume of flowing water		20 Minutes	100/-
Water Level Indicator	ELE UK	Used for measuring the water level in wells, standpipes and boreholes.		Depends on the experiment requirement	100/-
Particle Density Measuring Apparatus	ELE UK	It is used to measure the density of solids, represents the density of the soil (i.e., mineral) particles collectively		30 Minutes	150/-
Soil Moisture Measuring Apparatus	AT Delta-T Device Ltd UK	To measure soil moisture content		30 Minutes	130/-
Atomic Absorption Spectrophotometer	AA-6300 230 along with accessories	To measure micronutrients/heavy metals (Zn, Cu, Cd, Cr, Se, Pb, Mn, Ca, Mg & Fe etc) in soil/plant samples		15 Minutes for sample extract analysis	200/element

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Entomology

Name of Equipment	Make/Year of Manufacturing	Name of Test	Method of Analysis	Min duration required	Rate (Rs.) per sample
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Dissecting Microscope	Japan	To dissect the insects	N/A	Depend on insect sp.	N/A
Erma Monocular Microscope	Japan	To observe the specimen insects	//	//	//
Abbe Type Drawing Microscope	Japan	//	//	//	//
Microscope (Research compound Olympus Japan)	Japan	//	//	//	//
Leica Microscope	Switzerland	Insect identification	Identification and micrography	//	//
Sterio Microscope	Japan	//	//	//	//
Standard Microscope Biological	China	//	//	//	//
Leica DC 150 Digital System	Germany	//	//	//	//
Stereo Microscope	Germany	//	N/A	//	//
Microtome	Germany	Microtomy test	To prepare the permanent slide	//	//
Top Loading Balance	UK	N/A	N/A	N/A	N/A
Top Loading Balance	Germany	//	//	//	//
DIR Spray Pump	Germany	Spraying purpose	//	//	//
Ulv sprayer	UK	//	//	//	//
Drying Oven	Germany	To dry the sample	//	//	//
Micro Way Oven	Korea		//	//	//
Analytical Balance	Germany	To wt the chemicals	//	//	//
Cooled Incubator	Japan	To rear insect	//	//	//
Refrigerator	Dawlance	To store chemicals	//	//	//
Conductivity Meter	UK		//	//	//
Grain Moisture Meter	Japan		//	//	//

PH Meter	UK	To measure amount of phosphine from stored grains	//	//	//
Hand Micro Applicator	UK		//	//	//
Weather Monitoring Station	USA		//	//	//
Liquid Chromatograph (HPLC+TLC)	HITACHI	Our of order apply for repair	//	//	//
Incubator Digital Microprocessor	Darwin Chambers USA	For experiments on insect rearing	//	//	//
Lab. Incubator 85 cft.	Darwin Chambers USA	For ecological/biocontrol experiments	//	//	//
Leica MZ 12.5 Trinocular Zoom	Nikon Japan	Insect identification and micrography	//	//	//
Binocular Stereomicroscope	LABO America ING, USA	To identify the insects	//	//	//
Hot Air Oven	Witeg Germany	Drying samples	//	//	//
Analytical Balance	Axis Europe /UK	Weighing of samples	//	//	//
Multimedia	Acer	For teaching classes and conduct seminars	//	//	//
Micro Applicator Automatic small	Bukurd Scientific Ltd.	For toxicology experiments	//	//	//
Electrophoresis Apparatus	Wealtec USA	For analysis purposes	//	//	//
Electrophoresis Apparatus Horizontal	Wealtec USA	//	//	//	//
Electrophoresis Apparatus (Mini Vertical)	Wealtec USA	//	//	//	//
Standard Vertical, Polyacrylamide Gel	Wealtec USA	//	//	//	//
Electrophoresis Power supply	Wealtec USA	//	//	//	//
Gradient Thermocycler	-	For Taxonomic experiments	//	//	//
Liquid Nitrogen Container capacity 47	Cryo Diffusion	For stored gain insects experiments	//	//	//

kg,					
a) Solo Power Sprayer	China	For plant protection	//	//	//
b) K-45 Agrimondo turbine sprayer	China	//	//	//	//
c) K-90 Agrimondo turbine sprayer	China	//	//	//	//
d) Knapsack hand sprayer	China	//	//	//	//
Phosphine Meter	Oldhan S.A , France	To measure amount of phosphine from stored grains	//	//	//
Moisture Meter with padded carrying case	-	To measure moisture of grains	//	//	//
Heavy Duty Sieve Shaker	-	To shake the grain sieves	//	//	//
Grinder (Cutting Mill) and Flour mill	China	To grind agricultural commodities for experiments	//	//	//
Fog Machine; output 20000 per cu. Ft.	-	To fumigate the stores	//	//	//
Head Space Analyser	Denmark	To measure Co2 from stored grains	//	//	//
<b>Prof. Dr. Fayyaz ul Hassan</b>	<b>drsahi63@gmail.com 0300-9514597 051-9290757</b>	<b>Agronomy</b>			
<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
PH Meter	HANNA PH 21024.09.2001	PH	For determination of pH of solution/liquid etc.	N/A	N/A
EC Meter	HANNA 21524.09.2001	EC	For determination of EC of a solution/paste etc.	N/A	N/A

Seed Moisture Tester	Dickey Jhon USE-100 Grams 04.02.2003	Seed Moisture	Purpose instrument for use when harvesting, drying grain and managing grain storage	N/A	N/A
Hand Refractometer	ATAGO ATC 1-E Brix, Japan 16.06.2008	Liquids refer test	The refractive qualities of liquids refer to the speed in which light travels through them	N/A	N/A
Flame Photometer	Jenway PFP-724 12.2009	Determining the Sodium Potassium and Calcium	Flame photometer is used for determining the sodium, potassium and calcium contents of different types of solutions	N/A	N/A
Grinding Machine	FFC/45 with motor 03 pH, China 10.06.2011	Grinding plant sample	Grinding plant sample	N/A	N/A
<b>Dr. Tanveer Ahmad</b>	<b>tanveer.ahmad@uair.edu.pk</b> <b>0333-5103351</b>	<b>Pathobiology</b>			

<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Refrigerator	Waves	Storage of samples	Nil	Variable	N A
Oven Universal	Memmert Germany	Glassware sterilization	Hot air oven 170C	One hour	NA
Microscope Binocular Light	Nikon	Microscopic examination of various tissues	Visual examination of microscopic structures of animal tissues processed with staining techniques	Variable	NA
Centrifuge Clinical	Germany	Centrifugation of blood and fluids	Centrifugation	5-10 mins	NA
Electronic Balance	Keru Germany	Weighing of chemicals	Nil	One minute	NA

Hemoglobin Meter	Apel Japan	Estimation of Haemoglobin	Spectrophotometer	5-10 mins	NA
Incubator Co2	Japan	Incubation of clinical samples and cell culture work	Nil	Variable	NA
Centrifuge(Refrigerated )		Centrifugation ultra low temp for serum analysis	centrifugation	variable	NA
pH-Meter	Korea	pH determination of various solutions	Solution analysis for reactivity	One minute	NA
Centrifuge		Centrifugation at low temp for serum analysis	Centrifugation	Variable	NA
Analytical Balance	Japan	Weighing of chemical and organs .	Nil	One minute	NA
Water Bath	Memmert Germany	Tissue processing	Nil	Variable	NA
Incubator	Memmert Germany	Incubation of tissues for histopathological processing	Nil	Variable	NA
Centrifuge Machine	France	PCV determination	Nil	Variable	NA
Deep Freezer	Waves	Storage of laboratory samples	Nil	Variable	NA
Mono Pan Balance		To weigh the samples and chemicals	Nil	Variable	NA
Electronic Balance	Sartorius Germany	To weigh laboratory samples and chemicals	Nil	Variable	NA
Centrifuge Clinical	Qualitron Corporation	Laboratory use	Nil	Variable	NA
BOD Incubator	Lovibond	Incubation of culture	Nil	Variable	NA
Tissue Homogenizer	Daikan Scientific Korea	Tissue homogenization	Nil	Variable	NA
Sterilizer Unit	Locally fabricated	Sterilization	Nil	Variable	NA
Water Purifier	TKA Germany by Pace Intl.	Water purification	Vapor Condensation	Variable	NA
Projection Microscope	Meiji Techo Japan	Demonstration of microscopic structures	Nil	Variable	NA

Autoclave(Horizontal)		Sterilization	Nil	Variable	NA
Universal Microplate ELISA Reader	Biotec USA	ELISA reader	Nil	Variable	NA
Autoclave( Vertical /digital)	WitEG Germany	Media sterilization	Nil	Variable	NA
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<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Oven	Rigodigit (Japan)	For sterilization of instruments	Dry Heat upto 250oC	1 hour	100/hour
Oven Universal	Mammert (German)	Can be used for sterilization / incubation	Dry Heat	Depends upon sample	100/hour
Digital Cell Counter	DBC-8E (Korea)	To count cells in DLC slide	Cell counting	Depends upon sample	50/Sample
Electronic Balance	Sartorius (German)	For weighing	Weight	2-3 minutes	5/Sample
Tissue Homogenizer	HG-15A (Korea)	To homogenize the tissue samples	Triturate	Max. 5 minutes	50/Sample
Microscopes (binocular)	Olympus / Nikon	For seeing very small objects cells etc.	Slides preparation	Depends upon sample	Work with other instrument s
Water Distiller	Steel Unit (Japan)	For water distillation	Deionization	½ hours for 1L water	100/Liter
Hemoglobin meter	Model: 202. (Apel; Japan)	To determine the Hb concentration in blood	Photometer	5 minutes	50/Sample
Co2 Incubator	MCO-15AC, 164L Capacity (Japan)	For cell culture	Cell culture	Depends upon sample	500/Sampl e



Minigel Electrophoresis	Horizontal Type (BioRad; USA)	For DNA segregation and DNA toxicity determination	Electro-phoresis	½ hour	200/Sample
pH meter	ISTEK (Korea)	For pH determination in any solution		2 minutes	25/Sample
UV-VIS Spectrophotometer	PG-Model T-70 with HP printer (British)	Quantification, DNA and Protein analysis	Photometric	2 minutes	50/Sample
Kymograph with accessories plotters	Student Kymograph (China)	Electrophysiology of isolated organ	For student demonstration	Depends upon sample	--
Tissue Processor	Tissue-Tek	Dehydration, clearing	tissue preparation for light microscopy	8 hrs.	400/sample
Tissue Embedding Console system	Tissue-Tek	Embedding of the tissue	Tissue preparation for light microscopy (diagnostic purpose)	1 hr.	300/sample
Rotary Microtome	SakuraACCU-Cut (SRM)	Tissue sectioning	Light microscopy (diagnostic & research purpose)	30 mins	200/sample
Cryostat	STARLET(2212 PERTABLE CRYOSTAT)	Freeze sectioning of body tissues	Light microscopy (diagnostic & research purpose)	1 hr.	400/sample
Automatic Staining system	SAKURA JAPAN Tissue Tek DRS 200	Staining of tissue sections	Light microscopy (diagnostic & research purpose)	1 hr.	100/sample
Dissection Microscope	CZM6Labomed America Inc. USA	Dissection of different body tissues	diagnostic & research purpose	30 mins	50/sample
<b>Dr. Tanveer Ahmad</b>	<b>tanveer.ahmad@uair.edu.pk</b> <b>0333-5103351</b>	<b>Livestock Production and Management</b>			
<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Soxhelt Apparatus (6 piece set)	Bohr Germany	Fat determination	Proximate analysis	4 hr	30/ Sample without chemicals

Muffle Furnace	Neytek Germany	Ash determination	Proximate analysis	3 hr	20/Sample
Spectrophotometer	PG Instrument, UK	To determine the concentration of different substances	Minerals & other	2-3minutes	25/prepared sample
Gerber Machine	Germany	Fat determination in milk	Gerber Method	3-4 minutes	20/prepared sample
High speed centrifuge	Model K220RCenturion	To separate suspensions in liquid	Centrifugation	Few minutes	10/sample
Flame photometer	Model-360, Sherwood Sci. England	Minerals determination	Na, K and Cl	Few minutes	30/sample
<b>Prof. Dr. S. M. Saqlan Naqvi</b>	<b>saqlan@uaar.edu.pk</b>	<b>Prof. Dr. M. Gulfraz</b>	<b>gulfrazsatti@uaar.edu.pk</b>	<b>Biochemistry</b>	
<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Real Time PCR	Line Gene K2007	Relative Quantification	Detection of Fluorescence by using SYBER® GREEN	6 Hrs	2000/-
PCR	Quanta Biotech2013	PCR Amplification	-	6 Hrs	1000/-
Gene Gun	Bio Lab2010	Biolistic Transformation	Using Nano & Micro Particles	2 Hrs	2000/-
Gel Documentation System	Alpha Innotech2007	Documentation of Gel	By using Ethidium Bromide or SYBER® GREEN	15 min	250/-
Refrigerated Centrifuge	Sigma2001-02	Centrifugation	-	Variable	50/-
Gas Chromatography	Perkin Elmer Clarus 5002009	Fatty Acids profile	GC/FID	15 Days	2500/-
High Performance Liquid chromatography	Shimadzu2011	Photochemical and Sugar Analysis	UV and HPLC RID	15 Days	2500/-
<b>Prof. Dr. Iftikhar Hussain</b>	<b>ifthussain@uaar.edu.pk 051-9291021</b>	<b>Wildlife Management</b>			
<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration</b>	<b>Rate (Rs.) per</b>

				required	sample
Compound Microscopes (Binocular)	China	Use for departmental research activities	Research studies related wildlife conservation and management	N/A	N/A
Microscope Camera	China	-do-	-do-	N/A	N/A
Bench Top pH Meter pH 510 and Ion 510 Meter	USA	-do-	-do-	N/A	N/A
Binocular (Telescope)	China	-do-	-do-	N/A	N/A
Cyber Shot Digital Camera	Sony	-do-	-do-	N/A	N/A
Hot plate	China	-do-	-do-	N/A	N/A
Weighing balance	China	-do-	-do-	N/A	N/A
Pan size 7½" x 7½")	China	-do-	-do-	N/A	N/A
Weighing balance	China	-do-	-do-	N/A	N/A
Pan Size 5½" x 5½"	China	-do-	-do-	N/A	N/A
Water Bath	China	-do-	-do-	N/A	N/A
Table Centrifuge	China	-do-	-do-	N/A	N/A
(0-3000 rpm)	Local (Dawlance)	-do-	-do-	N/A	N/A
Adjustable vol. Micropipettes (200 to 1000µl)	Local (Dawlance)	-do-	-do-	N/A	N/A
Adjustable vol. Micropipettes	China	-do-	-do-	N/A	N/A
General purpose Refrigerator	MRM-ST, Medimeas	-do-	-do-	N/A	N/A
General purpose Deep freezer	Model No.44340 Celestron, USA	-do-	-do-	N/A	N/A
Laboratory Homogenizer (ESB-500)	Model: IM 900 (Country of origin China) Imerco, Germany	-do-	-do-	N/A	N/A

Rotary Microtome	Local Made	-do-	-do-	N/A	N/A
Digital Microscope with LCD Screen	Model 1052 GFL Germany	-do-	-do-	N/A	N/A
Compound Microscopes (Binocular)	MPW4F, Wenesco	-do-	-do-	N/A	N/A
Slide warmer	CxL LABOMED, Labo America Inc. USA	-do-	-do-	N/A	N/A
Circular floatation bath	Model:UV-1900 Biotech Medical Services (USA)	-do-	-do-	N/A	N/A
Wax Dispenser	Model MS-H-S GR Biotech UK	-do-	-do-	N/A	N/A
Phase Contrast Microscope	DHG-9030 Model # 8050, Contherm Scientific Ltd New Zealand	-do-	-do-	N/A	N/A
Spectrophotometer (with Cuvettes and cuvette holder)	Model # 7100 Contherm Scientific Ltd New Zealand	-do-	-do-	N/A	N/A
Ultra flat Lab disc stirrer	Made: China	-do-	-do-	N/A	N/A
Laboratory Oven	Made: China	-do-	-do-	N/A	N/A
Incubator	Model: LWB122D	-do-	-do-	N/A	N/A
Weighing balance (Electronic)	- Made Lab Tech Korea				
Weighing balance (Electronic)	Model 1-14 Sigma Made in Germany	-do-	-do-	N/A	N/A
Water Bath	(DW-381)	-do-	-do-	N/A	N/A
Micro Centrifuge	Model: PH208 with carrying case Manufacturer Lutron Electron	-do-	-do-	N/A	N/A
Microwave Oven	Model: UVGL-58 UVP, ENGLAND	-do-	-do-	N/A	N/A
pH Meter for Laboratory	Model: PA214 Ohaus	-do-	-do-	N/A	N/A
Ultraviolet lamp-	- Made USA				

Analytical Weighing Balance	Diamate – UK	-do-	-do-	N/A	N/A
Adjustable Vol. Micropipettes	China made	-do-	-do-	N/A	N/A
Table Centrifuge	PEL	-do-	-do-	N/A	N/A
General purpose Refrigerator	Dawlance	-do-	-do-	N/A	N/A
General purpose Deep freezer.	WUF-400 (WITEG Germany)	-do-	-do-	N/A	N/A
Ultra-low temperature Freezer					
Plant Tissue Homogenizer	Model: HG-15D WITEG Germany	-do-	-do-	N/A	N/A
Binocular	Bresser Germany	-do-	-do-	N/A	N/A
Spotting Scope	Nikon	-do-	-do-	N/A	N/A
Infrared Camera	TM1550 with TM35-1 Camera Kit	-do-	-do-	N/A	N/A
Video Camera	Sony HDR-CX150	-do-	-do-	N/A	N/A
GPS	Garmin GPSMAP 62s	-do-	-do-	N/A	N/A
Pocket Size Weather Tracker	Kestrel 4000	-do-	-do-	N/A	N/A
Compas (Digital)	MAKE: BKT 381	-do-	-do-	N/A	N/A
Radio-telemetry Equipment	Telenax (USA)	-do-	-do-	N/A	N/A
Bat Detector with Data Recorder	Pettersson Elektronik D100	-do-	-do-	N/A	N/A
Small mammals (Live Trap of variable sizes and types)	Local Made	-do-	-do-	N/A	N/A
Live Traps: Medium Sized Mammals (e.g. Porcupine, Cat etc.)	Local Made	-do-	-do-	N/A	N/A

Black Hole/Gopher Trap	Local Made	-do-	-do-	N/A	N/A
Snares (wire/rope)	Local Made	-do-	-do-	N/A	N/A
Small mammal Steel Cages	Local Made	-do-	-do-	N/A	N/A
Animal Control Poles, Snake catchers etc.		-do-	-do-	N/A	N/A
Passive Integrated Transponder (PIT) Tags	Oregon RFID	-do-	-do-	N/A	N/A
Spring balance	Pesola Micro-Line	-do-	-do-	N/A	N/A
Portable Power Generator	Honda	-do-	-do-	N/A	N/A
Tape Recorder	Sony	-do-	-do-	N/A	N/A
Measuring wheel	Dura Wheel YR-1000	-do-	-do-	N/A	N/A
Digital Multi-Parameter Meter for testing water	Omega PHH 127	-do-	-do-	N/A	N/A
<b>Dr. Irshad A. khan</b>	<b>Irshaduaar@yahoo.com 051-9290019</b>	<b>Forestry &amp; Range Management</b>			
<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Weighing scales (500kg-5 kg)		Used for Departmental Research Activities	Used for field studies	N/A	N/A  (Not used for commercial purposes)
Growth Chamber 20 cft.		-do-	Routine lab. work for seed germination trials	Study specific duration	N/A
Freezer 12 cft		-do-	Routine lab. Work for samples	-do-	N/A

Refrigerator		-do-	Routine lab. Work for samples	-do-	N/A
Portable fibers water tank with pipes		-do-	Used for field studies	-do-	N/A
Rotarty water sprinkles for watering grass cover		-do-	Used for field studies	-do-	N/A
Self-powered chipper for breaking down bush wood and strwa for silage		-do-	Used for field studies	-do-	N/A
Grinding Mill Lab unit		-do-	Routine lab. Work	-do-	N/A
Binoculars for dissection work		-do-	Used for field studies	-do-	N/A
Magnifying Lens 4" Diameter		-do-	Used for field studies	-do-	N/A
Personal computer P-III		-do-	Office work	N/A	N/A
Laser Printer		-do-	Office work	N/A	N/A
Scanner		-do-	Office work	N/A	N/A
Bunsen Burner for lab use		-do-	Routine lab analysis	N/A	N/A
Mortar & pestle		-do-	Lab. For grinding samples	N/A	N/A
Hydrometer Bouyoucas		-do-	mostly field studies	N/A	N/A
Maximum Minimum Temperature		-do-	Used for field studies	N/A	N/A
Universal Wood Testing Machine		-do-	Used for field lab studies	N/A	N/A
Oven 10 cft		-do-	Used in lab. For plant sample drying	N/A	N/A

Finger Joint Unit For Sawn Wood		-do-	Field analysis	N/A	N/A
Geographical Positioning Instrument		-do-	Used for field studies	N/A	N/A
Portable Electric Fence		-do-	Used for field studies	N/A	N/A
Binoculars		-do-	Used for field studies	N/A	N/A
Photosynthesis Measuring Apparatus		-do-	Used for field studies	N/A	N/A
<b>Prof. Tariq Mahmood</b>	<b>tariq.mahmood@uaar.edu.pk 0519290058</b>	<b>Environmental Sciences</b>			
<b>Name of Equipment</b>	<b>Make/Year of Manufacturing</b>	<b>Name of Test</b>	<b>Method of Analysis</b>	<b>Min duration required</b>	<b>Rate (Rs.) per sample</b>
Digital Balance	N/A	Weighing	-	-	-
Analytical Balance	N/A	Analytical Weighing	-	-	-
BOD Incubator	N/A	BOD Measurement	-	7 das	-
Centrifuge Machine	N/A	Separation	Multiple	-	-
COD Apparatus	N/A	COD Measurement	COD	3 hours	-
Chlorine Kit	N/A	Chlorine	Analysis	-	-
DO Meter	N/A	Dissolved oxygen Measurement	-	-	-
Ozone Detector	N/A	Ozone Detection	-	-	-
Scholander pressure Chamber Cylinder	N/A	Water Potential	-	3 minutes	-
Turbidity Meter	N/A	Turbidity	Measurement	1 minute	-
Vacuum Filtration Assembly	N/A	Filtration	-	-	-



Visible Spectrophoto Meter	N/A	Spectrophoto Metric Analysis	-	-	-
UV Lamp	N/A	Disinfection	-	-	-
Microwave Oven	N/A	Heating	-	-	-
Colorimeter for Nitrogen	N/A	Optical Density Measurement	-	-	-
Digital Hot Plate Stirrer	N/A	Heating + stirring	-	-	-
Digital Incubator	N/A	Incubator	-	-	-
PH Meter	N/A	PH Measurement	-	-	-
Digital Muffle Furnaces	N/A	Heating/ashing	-	-	-
Multi Para Meter	N/A	pH,TMP,EC,TDS	-	-	-
Digital Precise Water Bath	N/A	Heating	-	-	-
Water Purification System	N/A	Water Purification for distillation	-	-	-
Digital Balance	N/A	Weighing	-	-	-
Autoclave	N/A	Disinfection	-	2 hours	-
Incubator	N/A	incubation	-	-	-
Refrigerator	N/A	Preservation	-	-	-
Digester	N/A	Heat Digestion	-	-	-
Photoelectric Colorimeter	N/A	Colorimetry	-	-	-
Micro Pipette	N/A	Analytical Volume Makeup	-	-	-
Lap Top	N/A		-	-	-
Printer	N/A	Printing	-	-	-
Distillation Unit	N/A	Water Distillation	-	1 day	-
Shaking Incubator	N/A	Shaking in controlled condition	-	-	-
Auto Clave	N/A	Disinfection	-	-	-

Refrigerated Centrifuge	N/A	Refrigerated Centrifugation	-	-	-
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