ANIMAL CARE

HANDBOOK

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University of Agriculture, Faisalabad
www.uaf.edu.pk

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Chapter 1

BACKGROUND

As per an international norm, proper care and humane treatment of the animals used in research, teaching and training is included in the policy of any leading educational and research institution. Through an onerous commitment of its faculty, University of Agriculture, Faisalabad (UAF) has clinched 98th rank among the World's Agricultural Universities. Notwithstanding this coveted position however, is the glaring paradox that this institution lacks any committee and/or guidelines for ensuring a responsible use of animals in research, teaching and product testing. In the context of research involving the use of animals, American Veterinary Medical Association (AVMA) defines the word "responsible" as encompassing two fundamental imperatives viz. the treatment of the animals during research, teaching etc be humane and that the motive of the research be noble and meaningful (Matushek, 1996). The leading universities of the world not only have well defined animal use guidelines in place but also offer short duration training programs for responsible animal use and handling before the commencement of any biological research involving the use of experimental animals.

Publications in the high quality international journals as well as internationally funded grants contribute significantly towards the institutional ranking. Almost all the biological science international journals require animals to be used in research according to the guidelines and policies frame work of the institute. For animals subjected to the aesthetic and invasive procedures, analgesics and tranquilizing agents used, as well as the dosages and frequencies of administration must be stated (https://www.elsevier.com). Some biological science journals expect that the "Guide for the Care and Use of Laboratory Animals", approved by the National Research Council, Institute of Laboratory Animal Research (ILAR), USA (Anonymous, 2011) should have been followed and guidelines framed by the institutional animal welfare committee have been cited in the manuscript (http://www.vetsci.org). The research manuscripts lacking such kind of declarations are

rejected even at the in-house review stage before forwarding it for technical peer-reviewing. Similarly, for competitive grants at the international level, funding agencies require citation of approved protocols of animal use in the project proposal as a stipulation of its consideration for funding (e.g. funding guidelines for the National Institute for Health (NIH), USA; http://grants.nih.gov/grants/olaw/references/hrea1985.html) which follows the ethical precept that "good animal care and good science go hand-in-hand'. Often times, researchers of the UAF fail in publishing their research work simply for want of citation of guidelines on the responsible use of animals. **At present, no guidelines for responsible use of animals in the research, teaching and product testing are available on the website (www.uaf.edu.pk) of the UAF.**

As far as could be ascertained, an attempt (half measures so to speak) was made in 2010 to jot down the following 5 points of animal handling which are incomplete and fall short of what is expected by editorial boards of journals and the international funding agencies:

a. **Transportation:** If the animals/birds are procured from a distance and are to be brought to the university premises for experimental use, then stress of transportation be minimized as possible as can be. Must not be exposed to harsh conditions, like too low/high temperature. Water must be provided during transportation.
b. **Management:** Optimal standard conditions of housing (space, temperature, light), feeding and watering be provided to the experimental birds/animals.
c. **Treatment:** Minimum number of animals/birds be used in research projects/schemes (as minimum number as acceptable for statistical analysis). If the killing of the birds is required, it should also be minimum. Animals/birds should not be exposed to drugs/chemicals/toxins insecticides in the research, which are considered too fatal.
d. **Slaughtering**: Neck dislocation/overdosing of anesthesia are the acceptable practices for killing of the experimental animals/birds, ifit is deemed necessary.
e. **Supportive therapy**: Supportive treatment during experimentation should be provided in order to maintain the health of experimental animals/birds which include the provision of antibiotics in case of secondary infection, electrolyte therapy and supplementation of vitamin and minerals.

Chapter 2

COMMITTEE FOR ESTABLISHING GUIDELINES FOR RESPONSIBLE USE OF ANIMALS IN RESEARCH, TEACHING AND PRODUCT TESTING

2.1 The Committee

In the light of above perspective, the humane and responsible use of animals was the dire need of the scientists of the UAF for bringing their research and proposals as par with the internationally acceptable standards as well as for getting their research findings published in international journals and to vie for international grants. The committee constituted with reference to Academic Section vide no A-4/220-84/31827 dated 08-08-2014 is as follows:

Sr. No.	Designation	Name
1.	Convener	Prof. Dr. Laeeq Akbar Lodhi, Dean, Faculty of Veterinary Science, UAF.
2.	Member from Deptt. of Clinical Medicine and Surgery	Prof. (R) Dr. Ghulam Muhammad, Department of Clinical Medicine and Surgery UAF.
3.	Member from Deptt. of Parasitology	Prof. Dr. Zafar Iqbal, Chairman, Department of Parasitology, UAF.
4.	Member From NIFSAT	Dr. Akmal Nazir Assistant Professor, NIFSAT, UAF.
5.	Member From lAS	Dr. Mubarak Ali, Assistant Professor, lAS, UAF
6.	Member From Faculty of Social Science	Dr. Sultan Ali Adil, Professor/Director, Institute of Agricultural and Resource Economics
7.	Member From ORIC	Mrs. Riffat Shamim, ORIC
8.	Secretary/Member	Dr. Muhammad Sohail Sajid, Assistant Professor, Department of Parasitology, UAF.

2.2 Terms of Reference (TOR) of the Committee

After the series of in-house meetings, the committee prepared the guidelines for:

i. Responsible use of animals in research, teaching and product testing to place on website of the UAF

ii. Making research proposals at par with the internationally acceptable standards and to have published faculty/students research findings in International Journals Guidelines are prepared consistent with the essential requirements of the following international institutions and documents:

a. Universities Federation for Animal Welfare (UFAW) (http://www.ufaw.org.uk/)

b. Office of Laboratory Animal Welfare (OLAW), NIH, USA (http://grants.nih.gov/grants/olaw/olaw.htm)

c. Institute of Laboratory Animal Research (lLAR), USA (http://dels.nas.edu/ilar/)

d. International Guiding Principles for Biomedical Research Involving Animals published by Council for International Organization of Medical Sciences and the International Council for Laboratory Animal Science (Greene, 2012) (http://www.cioms.chlpublications/guidelines/1985textsofguidelines.htm)

e. International Council for Laboratory Animal Science (ICLAS) Ethical Guideline for Researchers, ICLAS, Belgium (http;lliclas.org/committees/ethics-and-animal-welfarecommittee)

f. Veterinary Ethics and Jurisprudence (Dua, 2004).

The committee framed the guidelines revolving around the core themes of 3Rs viz. **R**eplacement, **R**eduction and **R**efinement" (UFAW) for responsible use of animals in the biological research, teaching and training at the UAF.

Chapter 3

RULES, REGULATIONS AND REPONSIBILITIES OF THE INSTITUTIONAL ANIMIAL CARE AND USE COMMITTEE (IACUC), UNIVERISTY OF AGRICULTURE, FAISALABAD

3.1 Scope of IACUC

The IACUC is responsible to review all the projects (Faculty and graduate student study) involving use of animals. whether that is a laboratory work or research. Reviewing animal use in teaching (e.g. surgery practical) is also the responsibility of IACUC. After approval, a project would be continuously monitored by the: IACUC to ensure the compliance of standard protocol and animal care program. The facilities regarding animal care would also be: inspected by IACUC. The outcomes of review will be: shared with the concerned institutional officials for their consideration to take necessary actions. Generally, the: main responsibilities of IACUC will revolve around:

a. Preparation of a general policy for animal care and use

b. Reviewing the university animal care program and implementation of recommendations

c. Reviewing proposed projects for implementation of animal care program and standard protocol prior to their submission and execution,

d. Monitoring of the facilities regarding animal care before initiation of the project Although, it is an obligation of the IACUC 110 oversee and ensure the humane use of the: animals in research and teaching but the responsibility of humane use lies squarely on researchers who are performing research i.e, the principal investigator/team leader/project manager/team manager, teachers and staff.

3.2 Rules, Regulations and Responsibilities of Principal Investigator/Team Leader/Project Manager/Team Manager

Although, in a project, whole staff should have adequate knowledge about the project and they must be well trained to carry out the research; but, it is 1:ht~ responsibility of Principal: Investigator (PL/Team Leader (TL/Project Manager (PM)/Team Manager (TM) to ensure the enactment of the: standard protocol according to the policies IOf IACUC of UAF. All the: correspondence of IACUC regarding project reports, review, results" annual surveys and their implications in a project must be carried out through PI/TL/PM/TM and! he/she will be responsible for all the aspects of the project. Although,

PI/TL/PM/TM is the person who is responsible f(I)O activities of the project but the main responsibilities are:

a. Preparation and submission of the research protocols according to the: IACUC guidelines and getting these approved prior to initiation of investigations.
h. Ensuring that all the members have adequate knowledge of IACUC approved protocols and they are well-trained.
c. Performing the project research according to IACUC approval
d. Preparation aJt1CI submission of the reports as per IACUC requirements
e. Implementation of any change in the research protocol after its approval from IACUC On inspection, if the PI/TL/PNL/TM is found negligent of not meeting the: protocols and policies of IACUC then the project will be suspended by IACUC by issuing suspension letter to PI/TUPM/TM and relevant funding agencies.

3.3 Rules, Regulations and Responsibilities of Research Team

The members of the research team must he mentioned in the protocol which can be comprised of PI/TL/PM/TM, Co-PI/Co·.['L/Co-PM/Co-TM, research associates, research assistants, students and technicians. Every member of the team will be responsible to ensure that animal use in the research and teaching is consistent with the guidelines of IACUC. Therefore, the whole research team of the project should have adequate knowledge of the project and they must be well trained and dedicated to carry out the research and teaching with a humane handling of animals.

3.4 Protocol Required for Various Types of Research

A. Use of live vertebrate animals in research

A detailed procedure of animal use in research fell' reviewing should be submitted to IACUC if live vertebrate animals have to be: used DOT research or teaching purpose.

I. Brarnbell's five freedoms / animals rights

Animals right under human control revolve around their five freedoms which are

a. Freedom from hunger or thirst
    i. Availability of quality feed to experimental animals ad libitum
    ii. Provision of impurity free filtered water to experimental animals
    iii. Feed and water requirement of the experimental animal must be mentioned in the protocol
b. Freedom from discomfort

i. Experimental animal must be kept in a well-controlled environment with proper provision of temperature, humidity, scheduled light intensity and ventilation. It must also be pathogens and pest free and specific sanitation schedule is adopted,
ii. Experimental animals must be: well housed with proper bedding material

c. Freedom from pain, injury or disease
   i. Pain or injury to experimental animal must be as minimum as possible
   ii. Ideally animal experimentation must be pain free for animal but if pain is exerted then it must be mentioned in protocol according to UAF- IACUC pain code classifications with justification

d. Freedom to express (most) normal behavior
   i. Experimental animals must be provided with proper space and they must not be overcrowded
   ii. Extra space: should be provided to animals as males can be more aggressive.
   iii. Proper facilities must be provided in housing system according to the specie: behavior
   iv. Accompany own kind in housing. Isolated hosing may cause up to 30% increase of the stress

c. Freedom from fear and distress
   i. Must be: fret: from loud noises and vibrations
   ii. Must be free from ultrasonic calls of predators
   iii. Frequent changing of cages may also cause distress

II. Transport of dogs and cats

For transportation of animals to the: experiment site the following rules must be considered

a. Animals can only be transported to experiment site if they are healthy. A. certificate to this affect must be obtained from the local veterinarian
b. Animals in the advanced pregnancy must not be transported
c. In a container" animals of same species can be transported
d. With adult animals, unweaned puppies and kittens must not be transported
e. Transportation of female animals with males in the breeding season is not permitted.
f. Separate cages must be used in a container for the transportation of vicious animals

g. For long distance: transportation, special attention must be given to the feeding and watering of the: animals. They must be offered water every six hours in the winter and four hours in the summer, Adult animals must be fed after every twelve hours while" for young animals, it must be after every four hours.

h. Animals must be exercised as late as possible before transportation.

i. An attendant must accompany animals if they have to be transported through rail for a long distance of more than six hours.

j. On-roof transportation of animals should not be practiced, rather they must be transported only inside: the vehicle with an attendant being there for their care and management.

k. For transportation through air, container must be cleaned and. disinfected and should have sufficient bedding material. Compartments must be provided with controlled temperature for the international transportation of the animals.

III. Transport of cattle and buffaloes

For the transportation of animals to the experiment site following rules must be considered:

a. Only healthy cows and buffaloes an: permitted for transport to the experimental she. A certificate to this affect must be obtained from the local veterinarian

b. Each consignment must be properly labelled with details of consigner and consignee including their names, telephone numbers, and addresses. Vehicle number and its arrival time must be informed to consignee as well as to IACUC of UAF.

c. Animals transportation must be accompanied with First-aid equipments.

d. Average space for each animal should be: more than two meter square

e. Suitable slope and platform must be used for loading animals.

f. For long distance transportation, feeding and watering of animals must be given special attention.

g. Animals in the advanced pregnancy must not be transported with young animal's.

h. Following precautions must be taken for transporting animals through rail:

   l. An attendant must accompany the animals for their care and management

   2. Approximately ten adult cattle/buffaloes or fifteen calves can be accommodated in a wagon on a broad gauge for the: transportation. Similarly, ten calves or six adult cattle/buffaloes in a metre gauge and six calves or Dour adult cattle/buffaloes in narrow gauge can be: transported.

3. At least 6 cm thick padding of straw should be placed on floor to avoid any chance of injury,
4. For provision of proper ventilation to animals, the upper door of one side must be opened.
5. Cattle wagon must be in the middle of the train and cooking in the wagon must be prohibited in the train.
6. Milch animals must be milked twice a day and sufficient milk must be provided to calves.
7. For loading and unloading of the animals, suitable ramps must be used.
8. If possible, animals must be transported during night,

i. Following precautions must be observed for transporting animals through goods vehicle:

1. Vehicles with special padding around sides and tail board should be used and animal number must not be more than six in a vehicle,
2. A vehicle must be used only for animal transportation (cannot be: used for other purpose).
3. An attendant must accompany the animals: for their care: and management,
4. Animals must face the engine to avoid them being injured or frightened

IV. Transport of sheep and goats

Following precautions must be taken for transporting animals

a. Animals can only be: transported to experiment site if they are healthy. A certificate to this affect must be obtained from the local veterinarian

b. Each consignment must be properly labelled with details of consigner and consignee including their names, telephone numbers, and addresses. Vehicle number and its animal time must be: informed to consignee as well as to IACUC of UAF.

c. Animal's transportation must be accompanied with First-aid equipment.

d. For loading and unloading of animals, suitable ramp must be used

e. Transportation of female animals with males must be prohibited

f. In a wagon only the animals of the same specie must be transported and partition should be provided if sheep and goats have: to be transported together in a single wagon

g. Necessary ventilation should be provided in the transporting vehicle,

h. For long distance transportation, special attention must be: given to the feeding and watering of the animals and ample amount of water and feed must be provided to cope with any emergency.

i. At least S cm thick paddling of straw should be placed on the floor to avoid any chance (If injury.

j. Animals can be fettered only if there is any chance of animal jumping,

k. Space requirements for goat should be equal to wooled sheep which is given in Annexure 1 for both goods vehicle and railway transportations. Capacity of rail wagon for animals has been given in Annexure II

l. Maximum of 40 animals can be kept in a goods vehicle having capacity of 4.5 to 5 tons.

m. Separate panels must be provided for goats, ewes, kids and lambs of less than six months of age.

V. Transportation of poultry for research

For the transportation of chickens, guinea fowls, day old chicks, geese, ducks, turkey poults, quails and turkeys, followings requirements must be considered

i) General requirements

a. Cleaned and sterilized container should be used for poultry transportation.

b. Poultry should be prevented from exposure to rain, sunlight and air blast

c. Favorable temperature for poultry transportation should be in the range: from 15-25 C.

d. Birds' container must he properly ventilated.

c. Rigid non-collapsible material must be used for the transporting container.

f. Each consignment must be properly labelled with details of consigner and consignee including their names, telephone numbers" and addresses. Vehicle number and its arrival time: must be informed to consignee as well as to IACUC of UAF.

g. Birds must not be transported over six hour journey continuously; rather they must be inspected after every six hours.

ii) Requirements for turkey poults and day-old Chicks

a. Poults and day-old chicks must be packed and transported as SOOI1 as possible after their hatching

b. Watering and feeding of poults and chicks should be avoided before and during transportation

iii) Requirements for poultry except turkey poults and day-old chicks

a. Poultry c:an only be: transported to the experiment site if they are healthy. A certificate to this affect must be obtained from the local veterinarian,
h. In a container, only 1birds of same species and age must be transported,
c. Birds should be watered and fed before transportation and these facilities must also be available during the transportation
d. Male and female stock cannot be transported together
e. In case of road travel, birds containing containers should not be piled up.
f. For rail transportation, an attendant must accompany the birds for their care and management if transportation period is more than 12 hours.
g. For air transportation container must be provided with controlled temperature and oxygen.
h. Space requirements for birds during transportation an: given in Annexure III

Vl. Rules for keeping animals for breeding purpose

a. No constituent section of UAF is permitted to perform business of animal breeding without prior approval from IACUC, UAF"
b. Hygienic measures must be adopted in animal houses. squalid management conditions an: not permissible.
c. Animal cages must be comfortable and overcrowding must be: avoided
d. A trained attendant must be accompanied. the animals for their care and management

VII. Rules for bio-medical wastes

The scientists working with the bio-medical wastes should read and follow the detailed guidelines provided by the Biosafety committee of the University of Agriculture, Faisalabad. However, following necessary instructions must be followed:

a. Bio-medical wastes should be treated and disposed by incineration
b. There must be common incineration site for the disposal of biomedical waste and these must not be mixed with other waste
c. Separate bags must be used for the storage of biomedical wastes which should be labelled with complete information,
d. Separate vehicle must be used for the transportation of biomedical waste which should not be stored over 48 hours.

B. Preserved vertebrates and procured tissue use in research

If preserved vertebrates mod procured tissues are proposed for use in the research, these do not require approval from IACUC. Preserved tissues can be obtained from salvaged animals, commercial sources and museums. However, a statement need to be submitted to IACUC, UAF, confirming the use of preserved vertebrates/tissues in research with their potential biohazards (if any).

C. Special considerations

I. Use of animals in collaborative research

If an investigator belonging to the UAF, 'wants to do a collaborative research with the researchers from any other institution and all the research has to be completed at that institution or an offsite location then the investigator is not required to submit the protocol to IACUC for reviewing if protocol has already been approved at other institution and funding is from that institute. However, the investigator is required to submit the: approved protocol copy in the head institute.

II. Use of animals in the field studies

Field studies involving animals in research requiring blood collection or other invasive procedures to conduct such kinds of field research, approval of protocol from IACUC is necessary. So, Investigators must submit an animal use protocol to the IACUC for approval.

III. Use of exempt category animals

Protocol approval from IACUC is exempted in various categories of research which include vertebrate eggs" invertebrates, tissues from dead animals or commercial sellers and commercially available bio-products.

IV. Animals use in teaching

It is the: responsibility of IACUC to ensure justified use of the animals in teaching, Models and other sources should be given preference over the use of live animals.
Guidelines framed by American Society of laboratory Animal Practitioners (ASLAP; Brown et al, 1993) for animal surgery in research and teaching will be followed in surgery and physiology, anatomy, nutrition, pathobiology and practical (If allied disciplines, Briefly, IACUC of UAF will ensure the use of animals in ethically justifiable and humane and that allied individuals who perform surgery or other aforementioned procedures on animals are appropriately qualified and trained.

3.5. Rules, Regulations and Responsibilities Regarding the New Principal Investigator/Team Leader/Project Manager/Team Manager

A. Requirements before the arrival of new principal investigator/team leader/project manager/team manager

New PI/TL/PM/TM must meet the: IACUC Chair to discuss for the preparation of new protocols. The protocols formulated by the new PI/TL/PM/TM should also be approved before the commencement of the research involving animals. If an external grant is transferred from another institution to UAF, the new PI/TL/PM/TM should take approval from IACUC even if the animal use protocol has received approval at another institution. If the: PI/TL/PM/TM is changed within the UAF, the new PI/TL/PM/TM should got the approval of protocols transferred to his/her name: before starting the project activities related to the use of animals.

B. Requirements upon arrival of new principal investigators/team leader/project manager/team manager

New PI/TL/PM/TM along with the research team must seek familiarity with the Rules and regulations of IACUC as early as possible. This can include:

a. They have completed the basic training regarding animal use in the research
b. They have gained adequate knowledge about the miles and regulations of IACUC
c. PI/TL/PM/TM must make sure that all the team members an: listed in the protocol
d. PI/TLIPM/TM must ensure that new staff is. familiar with the protocols.

3.6 General Rules to Prepare a Protocol for IACUC Approval

Followings must be: kept in mind for preparation of protocol for animal use in research and teaching:

a. In submission form, proposed protocol must be detailed for the soundness evaluation of the protocol.

b. Performa for permission of animals use in experiment must also be submitted as given as Annexure IV

c. Number of animals proposed for the research must be justified according to the requirement.

d. Use of anesthesia (if any) must he fully described including its type, dosage, frequency and route of administration etc.

e. Details of analgesics must be incorporated in the: proposed protocol if pain is anticipated.

f. Complete description of the surgical procedures whether of survival and non-survival type must be incorporated in the: draft.

g. Physical restraints which are required in animal oriented research must be least painful.

h. If the project is ending up in the killing of animals, necessary protocol should be detailed for humane killing.

University of Agriculture Faisalabad IACUC pain code classifications

University of Agriculture Faisalabad IACUC has classified the protocols in three: categories depending upon the pain codes which are as follows:

a. Classification I: animal use in research with no pain
b. Classification II: animal use in research with pain exerted on them. accompanied with appropriate use of anaesthetizes/analgesic/tranquilizers.
e. Classification III: animal use in research with pain exerted on them and anesthesia/analgesic/tranquilizers are not used.

3. 7 Rules and Regulations Regarding Protocols Reviewing

For reviewing in the monthly meeting (or as scheduled by the IACUC, UAF), the PI/TL/PM/TM must submit the proposed protocol at least 10 days before the meeting time.

Initially, the Secretary at IACUC will review each protocol and return it back to PI/TL/PM/TM if protocol is found incomplete in any aspect. The PI/TL/PM/TM would be requested to present the protocol in front of the committee before the: initiation of the: technical review. Majority of IACUC members must vote: in favour of the protocol for its approval. Committee may approve, withhold pending/delay or reject the proposed protocol after necessary review process.

A. Approve protocols

Research proposals formulated according to rules and regulations of IACUC will be determined as approved. A permission letter for conducting research will be issued to the PI/TL/PM/TM after its approval.

B. Withheld pending protocols

If clarification or minor modifications will be required in the protocol then it may be given status of "withheld pending".

C. Denial protocols

Research protocols might be denied because:

a. There are lot of confusions and IACUC reviewers are unable to understand it

b. protocols are not according to the standards of IACUC and justification is not appropriate

c. The procedures described are insufficient for conducting research.

d. IACUC can also reject a research proposal if PI/TL/PM/TM is unable to respond within the 30 days of additional information request.

D. Questions and appeals regarding IACUC reviewing

Any PI/TL/PM/TM may attend IACUC meeting (regular or special meeting) after the: recommendation from the IACUC chair. Generally, this will be all about

a. Response to questions regarding ongoing research or protocol development
b. Point out the difficulties that are impeding the protocol approval

3.8 Rules and! Regulations Regarding Changes or Modifications in the Approved Protocols

If any change in the approved protocol is necessary, then PI/TL/PM/TM of protocol can submit the amendment to IACUC for approval. PI/TL/PM/TM must submit the: amendment in written protocol with the detailed reason for changes in protocol. Copy of supporting documents must be submitted to IACUC. After thorough reviewing new proposed protocol can be approved, withheld or denied.

3.9 Approval Period

Validity of an approved protocol will be maximally low years but that may be reviewed and updated annually.

3.10 Annual Reports for Protoco1 Status

As mentioned above that reviewing of approved protocol is essential annually; so, PI/TL/PM/TM of the project will be reminded through a letter at least six weeks earlier for the submission of annual report to IACUC and it will be the responsibility of PI/TL/PM/TM to submit the annual status report comprising of all requirements before the due date. After reviewing, PI/TL/PM/TM will have to resubmit the amendments to IACUC.

3.11 Triennial Resubmission

As mentioned earlier an approved protocol will be valid for a maximum period of five years. If PI/TL/PM/TM of the project wants to continue after its expiry then then he/she must resubmit the protocol. with all the amendments made in the previous protocol. PI/TL/PM/TM may also include additional proposed changes in the: protocol (if any). After a project expiry, animals in a protocol must be shifted to another IACUC approved protocol, put up for adoption, released to the wild or donated to a local zoo.

3.12 Process for Investigation

A. Non-compliance and/or harms investigating process

In any protocol animals may be harmed either due to research process or due to noncompliance of approved protocol. Non-compliance occurs when PI/TL/PM/TM and team modify the approved protocol without IACUC permission or they prolong the: research protocol beyond the approved period or they use the animals for research protocol which is not approved by IACUC. It is: the responsibility of the PI/TL/PM/TM to inform IACUC about the harms of protocol to animals. If IACUC receives any complain about it then 1:h1e approved protocol will be suspended temporarily, Initial investigation 'will be carried by IACUC chair with the help of another member; they may investigate from PI/TL/PM/TM or his/her team, inspect the equipment and facilities regarding protocol and refer the case to the committee if evidences will be found with respect to the animal harms. A special meeting of IACUC to discuss the matter will be called. PI/TL/PM/TM will be invited there to know his/her point of view. Committee

may reinstate the temporarily suspended protocol if no harms to the animals under research are found. Committee may approve: reinvestigation till next meeting or may terminate the protocol if it is believed that harms to the animals have occurred and may be harmful to animals if protocol is resumed.

B. Reporting concerns about animal care and use

IACUC has the responsibility to ensure the humane use of animals in research. Anyone from the university can report about the inhumane use of animals in research to IACUC anonymously. The IACUC will take actions after properly investigating the matter. Animal-related emergencies should be reported immediately to the animal facilities manager or the veterinarian.

3.13 IACUC Member Training

Training is necessary for every member of IACUC after his/her joining that will be offered by the IACUC chair or a committee member upon the direction of the chair. The new member must get familiar with the policies and procedures of IACUC and should complete appropriate training. In addition, every monthly meeting will be a source for IACUC member to get familiarity and training in specific areas of animal care and use. For the orientation session of the IACUC launching and working for the scientists involved in the animal research" the UAF can offer training time to time as and when required.

Annexure I: Space requirement per sheep with respect to various age categories

Average Weight (Kg)	**Required Space (m^2)**	
	Woolen	**Shorn**
20 or less	0.18	0.16
>20-25	0.20	0.18
>25.30	0.23	0.22
>30	0.23	0.26

Annexure II: Capacity of rail wagon for animals

Broad gauge		Metre gauge		Narrow gauge
1	2	3	4	5
Wagon with area <21.1m^2	Wagon with area 21.1 m^2 and above	Wagon with area <12.5m^2	Wagon with area 12.5m^2 and above	
70	100	50	60	50

Annexure III: Floor space requirements for poultry bird's transportation

Sr. No.	Category of Poultry	Minimum floor space (cm^2)	Dimensions			Birds No. in Container
			Length (cm)	Width (cm)	Height (cm)	
1	Months old chickens	75	60	30	18	24
2	Three month old chickens	230	55	50	35	12
3	Adult stock (excluding geese, turkeys)	480	115	50	45	12
4	Geese and turkeys	900	120	75	75	10 young's
		1300	75	35	75	2 growing
		1900	55	35	75	1 grown up
5	Chicks	-	60	45	12	80
6	Poult	-	60	45	12	60

Annexure IV

PERMISSION FOR ANIMAL EXPERIMENTS

Application to be submitted to UAF-IACUC for experimentation on animals

1. Name of the researcher with address

   ……

2. Registration number

   …….

3. Name, registration no" and Address of the breeder whose animals will be used in experiment stated in research proposal Performa A

   ……

   ……

4. Animal Keeping Place (present)

   ……

5. Experimental Place

   ……...

6. Duration of experiment

   …….

   Both Research Proposal Performa A and B are necessary to be attached with the proposed animal experiment.

Date: …….....

Signature

……

Name and Designation PI/TL/PM/TM

……. ……..

Research Proposal Performa A.

(for New Experiments or for Extension in On-going: Experiments)

1. Title of the Project

…… ……

2. PI/TL/PM/TM

…… ……

a. Name

……...

b. Designation

……. …….

c. Institution/Department/

……

d. Telephone No

……

3. Staff detail

……

4. Funding Agency

…… ……

5. Project Duration

…… ……

6. Animals required

Species	
Age	
Animals numbers	
Any other	

7. Rationale for animal usage

a. Why is animal usage necessary for these studies?

b. Why are the particular species selected required?

c. Why is estimated number of animals essential?

d. Similar experiments conducted in the country in the past. If so, the number of animals. used and results obtained in brief

e. If yes, why new experiment is required?

f. Have similar experiments been made by any other international organization/agency?

If so, their results in your knowledge.

8. Detail of all experimental procedures are given in proposal ☐YES ☐ No

9. Explain with justification if experiment lies under University of Agriculture Faisalabad IACUC Pain code classification III

…….. ……

10. Surgery Type

Survival Surgery	Non-Survival Surgery

In case of Survival surgery, give details of

a. Surgical procedures,

b. Surgeons and para-medical staff

c. Postoperative care

d. Justification for more than one major surgeries on same animal

II. Methods of disposal post-experimentation

…….

12. Animal transportation methods if extra-institutional transport is envisaged.

13. Hazardous agents must be mentioned with justification if they have to be: used

14. Investigator must give justification if on-going experiment has to be extended

Research Proposal Performa B
(INVEST1GATOR'S declaration)

1. I certify that I have determined that the research proposal herein is not unnecessarily duplicative of previously reported research.

2. I certify that all individuals working on this proposal, and experimenting on the animals, have been trained in animal handling procedures.

3. I shall maintain all the records as per format given below as Form B

Date: ……. Signature ……...……
Name of investigator …….

(for UAF·IACUC usage)

Proposal no
……
Receiving date
……...
Approval date
……
Expiry date
……
Name of UAF-IACUC Chairperson
…….

Date …..... Signature…….

THE BREEDING OF AND EXPERIMENTS OF ANIMALS

FORM A

Record of animal bred/acquired

(To be maintained by the breeder or the establishment)

Date of Entry	No. of animals (Specify species, sex and age)	No. of animals bred (Specify date of birth, species and sex)	No. of animals acquired (Specify date of acquisition, species, sex and age)	Name, address and date and from whom acquired	Name of animals transferred (Specify date, species, sex and voucher/bill no.)	Name address and registration no. of the establishment to whom transferred	Signature

FORM B

Record of animal acquired and experiments performed

To be maintained by the investigator

Date of Entry	No. of animals (Specify species, sex and age)	Name address and registration no. of the breeder form whom acquired with voucher/bill no.	Date and particulars of orders of grant of permission by the committee	Date/ period of experiment	Name and address of person authorizing the experiment	Certification of the investigator authorizing the experiments that all conditions specified for such an experiment have been compiled with
						Signature

Chapter 4

ESTABLISHMENT AN IACUC, UNIVERSITY OF AGRICULTURE, FAISALABAD

Standard requirements for establishment of IACUC committee

As per tbt: guidelines by Anonymous (2011), this overseeing committee should comprise of the following members:

i. A doctor of Veterinary Medicine
iii. Two scientists from different biological disciplines
iii. Scientist/Pl/TL/PM/TM/class instructor etc. 'who is incharge of animal facility of the establishment concerned
iv. A scientist from outside the UAF.
v. At least one scientist experienced in research involving laboratory animals.
vi. A public member/ social worker to represent the general community to satisfy the expected constraints of public towards proper use: and care of animals.

In addition, a specialist may be co-opted while reviewing special projects involving hazardous agents such as radioactive substances and fatal animal and human pathogens.

Proposed lAC1UtC for the University of Agriculture, Faisalabad

i.	A doctor of Veterinary Medicine	Veterinary Officer (Health), Civil Veterinary Hospital, Liaqat Road, Faisalabad
ii.	Two scientists from (Efferent biological	1. Prof. Dr. Muhammad Aslam Mirza, Office of Research Innovation and commercialization 2. Prof. Dr. Amer Jamil, Department of Biochemistry
iii.	Scientist/Pl/TL/PM/TM/class instructor etc. who is incharge of animal facility of the establishment concerned	Prof (R.) Dr. Ghulam Muhammad
iv.	A scientist from outside the UA	Dr. Muhammad Hidayat Rasool, Associate Professor, Department of Microbiology, GC University Faisalabad
v.	At least one scientist experienced in research involving laboratory animals.	Dr. Muhammad Imran Arshad, Institute of Microbiology, UAF. Dr. Muhammad Imran, Lecturer, Department of Parasitology, UAF
vi.	A public member/ social worker to represent the general community to satisfy the expected constraints of public towards proper use and care of animals	Honorary Secretary, Society for Prevention of Cruelty to Animals (SPCA), Punjab, University of Veterinary and Animal Sciences, Lahore.
vii.	Secretary of the Committee	Dr. Muhammad Sohail Sajid, Assistant Professor. Department of Parasitology,

Time Frame:

The time frame for the members of the committee would be three years. However, the same committee may continue if desired by the Vice Chancellor, UAF.

Chapter 5

DEFINITIONS AND ABBREVIATIONS

5.1. Definitions

Animal house means a place where animals are reared/kept for experiments or testing Purposes.

Biological means any preparation made: from organisms or micro-organisms or product or metabolism and biochemical reactions intended for use in the diagnosis, immunization or the treatment of human beings or animals or in research activities pertaining thereto.

Bio-medical waste means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities.

Collaborative research means any research undertaken between two or more research institution on an equal footing which does not involve any financial or monetary consideration and is undertaken solely for the purpose of advancement of scientific research and human welfare.

Experiments means any programme/project involving use of animal for the acquisition of knowledge of a biological, psychological, ethological, physical or chemical nature.

Institutional animal care and use committee means at body comprising of a group of persons constituted tor the purpose of control and supervision of experiments on animals performed in an establishment which is constituted and operated in accordance with the procedures specified for the purpose 'by the committee.

Major Change means that the changes reviewer suggests in an article are very large.

Minor Change means that the changes you make to an article are very small and no one would argue with them

Principal Investigator is the lead scientist for a particular well-defined science (or other research) project, such as a laboratory study or clinical trial.

Project in contemporary business and science, is defined as a collaborative enterprise, involving research or design that is carefully planned to achieve a particular aim.

Protocol is the original draft of a diplomatic document" especially of the terms of a treaty agreed to in conference and signed by the: parties

5.2. Abbreviations

Sr. No.	Abbreviation	Full Name
1.	UAF	University of Agriculture, Faisalabad
2.	IACUC	Institutional Animal Care and Use committee
3.	PI	Principal Investigator
4.	Co-PI	Cooperative Principal Investigator
5.	PM	Project manager
6.	Co-PM	Cooperative Project manager
7.	TL	Team Leader
8.	Co-TL	Cooperative Team Leader
9.	TM	Team Manager
10.	Co-TM	Cooperative Team Manager

Chapter 6

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