

FACULTY OF VETERINARY SCIENCE

UNIVERSITY OF ZARAGOZA

BIOSECURITY MANUAL

Teaching Farm

Revision 1 | 01/07/2026

0. Identification of the activity

The Teaching Farm is used for practical activities scheduled in the course guides of the Veterinary Degree, from Year 1 to Year 5. Sheep are an exception in that the unit also operates in a manner comparable to a commercial farm; under veterinary supervision, students may occasionally undertake activities not explicitly scheduled in the course guides, such as assisting at lambing or fostering lambs.

Teaching Farm staff are responsible for animal care and welfare, feeding and cleaning of the facilities. They must comply with the Personal Protective Equipment (PPE) requirements described in this manual.

Animal handling complies with Royal Decree 53/2013 of 1 February, which establishes rules for the protection of animals used, bred or supplied for experimental and other scientific purposes, including education and teaching.

Practical activities by species

Sheep: Year 1 Ethnology and Animal Welfare: basic animal handling, identification methods, breed recognition and production aptitude. Year 3 Diagnostic Imaging: use and interpretation of imaging techniques for diagnosis, prognosis, treatment monitoring, and reproductive/productive assessment. Year 3 General Pathology and Clinical Examination: pathophysiology and practical clinical examination. Year 4 Integrated Teaching in Ruminants: production systems, clinical practice, animal health, zoonosis control, food quality and safety, and legal aspects of livestock facilities, movements and health programmes. Year 4-5 students may also assist, under veterinary supervision, with dystocia, lamb feeding or treatment of species-specific conditions. Scientific studies and final degree projects may also be undertaken.

Equids: Year 1 Ethnology and Animal Welfare: basic horse handling, identification, breed recognition and aptitude. Year 3 General Pathology and Clinical Examination: pathophysiology and practical clinical examination. Year 4 Integrated Teaching in Equids: handling, clinical examination and pre-purchase examinations.

Pigs: Year 4 Integrated Teaching in Swine: general and reproductive examination of sows and boars, selection of replacement females, body-condition assessment by ultrasound, oestrus detection, artificial insemination, semen collection, pregnancy diagnosis and preparation for/assistance at farrowing.

Terrapins and pigeons: Year 4 Integrated Teaching in Aquatic and Exotic Animals: handling, restraint, examination and sampling of different exotic species.

Broilers and laying hens: Year 4 Integrated Teaching in Poultry and Rabbits: assessment of facility and management biosecurity, hygiene and disinfection, critical assessment of housing, environmental variables (temperature, humidity, ventilation and lighting), broiler environmental requirements, health and disease signs, health checks, animal-based welfare measures, locomotor problems and technical performance indicators.

1. Applicable facilities

Teaching Farm.

2. Biosecurity coordinator

Occupational Risk Prevention Unit (UPRL), University of Zaragoza.

3. Identification of specific hazards

The principal hazards are biological, mechanical/physical and chemical.

3.1 Biological hazards

Biological risk is associated with exposure to infectious and/or parasitic biological agents. Exposure may arise through direct contact with animals or their fluids during treatment, surgery, vaccination or medication; handling blood, urine, faeces, placentas, saliva or other fluids; diagnostic sampling; or contact with contaminated instruments and materials. Activities in the Teaching Farm are therefore activities that do not deliberately involve biological agents but may expose people to them, as described in Annex I of Royal Decree 664/1997.

Main routes of exposure include inhalation of bioaerosols; absorption through skin and mucous membranes; entry through wounds; ingestion due to poor hygiene; bites and scratches; and accidental needlestick or sharps injuries. Effects include contact dermatitis, allergic reactions to saliva, hair, feathers, skin scales and other animal tissues, and, most importantly, the possibility of acquiring a zoonosis.

The World Health Organization defines zoonoses as diseases naturally transmitted between vertebrate animals and humans. Other infectious diseases may affect both humans and animals without ordinarily being transmitted directly between them; listeriosis is cited in the source manual as an example.

3.2 Mechanical and physical hazards

- Lighting and ventilation deficiencies.
- Cuts and punctures caused by sharps, broken glass and syringes, whether or not contaminated with biological agents.
- Exposure to small quantities of blood or biological fluids from infectious or non-infectious animals.
- Slips, trips and falls on wet or slippery surfaces, and collisions with objects left on floors or passageways.
- Bites, kicks, blows, goring or other injuries during animal handling or due to inadequate restraint.

3.3 Chemical hazards

Chemical risk may result from uncontrolled exposure to chemicals and can cause acute or chronic effects. Regulation (EU) No 528/2012 governs the making available on the market and use of biocidal products. Veterinary hygiene products, wood preservatives and environmental biocides may pose risks to human health depending on their active substances, concentrations, formulation, exposure time, task, equipment, environmental conditions and individual susceptibility.

- Hazard factors intrinsic to the chemical agent, including absorption and toxic potential.
- Workplace factors affecting contact between the agent and the individual, including airborne dispersion, airflow, handling method, process, distance from the source, dermal contact frequency and temperature.
- Individual characteristics that may increase susceptibility.
- Behavioural factors, including personal habits and hygiene during work.

4. Specific rules for users

4.1 Access restrictions

- Access is restricted to authorised personnel and students attending scheduled practical sessions.
- Entry is not permitted without the PPE required by the course coordinator. Students must check the compulsory equipment before attending the practical session.
- Eating, drinking and smoking are prohibited.
- Mobile phone use is prohibited during practical activities.

4.2 Dress code

Warm clothing appropriate to winter weather and thermal socks may be advisable.

Mandatory protective equipment:

- Crocs-type clogs.
- Work coverall.
- Latex gloves.
- Reinforced-toe rubber boots.
- Safety goggles.

Additional PPE may be specified by the course coordinator for particular practical sessions at the beginning of each academic year.

4.3 Personal Protective Equipment (PPE)

Under Royal Decree 773/1997, PPE is equipment designed to be worn or held by a worker to protect against one or more risks to health or safety, including associated accessories.

Common PPE for teaching/research staff and students:

- Crocs-type clogs.
- Work coverall.
- Latex gloves.
- Reinforced-toe rubber boots.
- Rectal examination gloves.
- Safety goggles.

PPE to be brought by students: Crocs-type clogs, work coverall, latex gloves, reinforced-toe rubber boots or protective workshop boots, rectal examination gloves and safety goggles.

Additional PPE for technical/support staff and teaching/research staff may include a face mask. Personnel cleaning and disinfecting the Teaching Farm also require filtering respiratory protective equipment against solid/liquid aerosols or irritant, hazardous or toxic gases, and Category III chemical-protective gloves.

4.4 Equipment, instruments and materials

Depending on the practical activity, additional equipment may include a stethoscope, percussion hammer, pleximeter and torch.

4.5 Good Biosecurity Practice and user behaviour

Prevention of biological hazards

Teaching Farm activities do not deliberately involve biological agents, but exposure may occur. Good working practices, individual protective measures and, where necessary, containment measures must therefore be applied.

- Follow the applicable animal-handling procedures strictly.
- Maintain records of activities and incidents and use correct biological-risk and waste-management procedures.
- Wear protective clothing and reinforced-toe boots; use gloves and eye protection during animal handling.
- Apply standard precautions when handling blood or other biological fluids.
- Handle needles and sharps carefully; discard disposable sharps immediately in approved yellow containers and never recap a used needle.
- Manage biological waste correctly.
- Cover hand lesions with waterproof dressings.
- Wash hands with antiseptic; gloves do not replace hand hygiene.
- Wash work clothing appropriately.
- Ensure sufficient and appropriate training and information.

Containment and facility-control measures must prevent biological agents from escaping the work area. Cleaning followed by disinfection must be applied routinely. Periodic pest control and a permanent rodent-control programme must be maintained; vegetation and standing water should be controlled to reduce vectors.

Cleaning, disinfection, insect control and rodent control must not themselves create risks. Procedures must specify timing, methods, aerosol prevention and required equipment, and must be performed by trained personnel.

- Install insect screens where appropriate and use rodent-control measures.
- Remove manure periodically and preferably without students present.
- Store feed in locked, controlled, shaded and dry areas, off the floor.
- Maintain a slurry pit for pig-unit fluids and excreta in accordance with Government of Aragon requirements.
- Animal carcasses from the Teaching Farm must be sent directly to the Faculty Necropsy Room for necropsy.
- Wash boots only at designated boot-cleaning points and disinfect them after washing.
- Provide soap, hand disinfectant and disposable paper towels at sinks.
- Use lockers for street clothes; after leaving, store protective clothing separately from street clothing and clean it appropriately.

Prevention of mechanical and physical hazards

- Approach and handle each species calmly, without sudden movements or threats, to reduce animal stress.
- Use appropriate restraint equipment when necessary.

- Keep floors in good condition and remove water, grease and other residues promptly.
- Keep access routes and internal passageways free of obstacles; store tools and materials in appropriate cabinets, shelving or panels.
- Clean premises, facilities and work equipment regularly, especially items contacting animals or people.
- Provide adequate, uniformly distributed lighting and ventilation to reduce gases and humidity.
- Establish species-specific working protocols.
- Use appropriate PPE; eye protection and a face mask are also required when biological samples are collected, lesions/wounds are handled, or aerosols may be generated.
- Handle sharps carefully; discard them immediately in approved yellow containers and never recap used needles.

Prevention of chemical hazards

- Control hazards at source by closing containers and maintaining facilities, and provide PPE appropriate to the product and exposure route.
- Maintain an up-to-date inventory of pesticides, veterinary medicines, disinfectants, insecticides, antiseptics and other chemicals.
- Dispose of damaged or expired products.
- Do not carry out cleaning, disinfection or insect-control activities in the presence of students or other persons.
- In the event of any accident or incident, stop the activity and notify the responsible person.

5. Procedure for receiving animals/patients

The Teaching Farm livestock holding has the General Register of Livestock Holdings (REGA) code ES502978000001.

If a notifiable disease is suspected, the official veterinarians must be notified and their instructions followed.

Veterinary medicinal products required to treat animals are managed through a veterinary medicine cabinet registered with the official veterinary services of the Government of Aragon. The responsible person must periodically inventory the products and manage their use.

Animals are housed separately by species in different teaching areas.

Animals kept permanently

Sheep: Numbers vary seasonally. The flock is managed similarly to a commercial holding and movements are recorded in the holding register. Adults are identified in accordance with Royal Decree 685/2013 using a yellow ear tag and ruminal bolus. Animal health is managed by a livestock health protection association (ADSG), including programmes such as brucellosis control. Lambs are identified with the holding ear tag and receive the required neonatal care. Animals in poor health may be sent to the Necropsy Room.

Equids: Usually four to six horses, depending on teaching activities and private donations. Animals are identified by injectable transponder or ownership transfer and are maintained year-round for teaching; weather permitting, they may be kept in the enclosure immediately outside the Teaching Farm.

Pigs: Four identified females are permanently housed separately from a boar, which is present only when required by the practical-teaching schedule.

Animals kept temporarily

Temporary animals remain only for the period required by teaching. Animals from commercial holdings are transported with the corresponding official movement documentation and only when health requirements are met. Animals supplied by non-commercial centres are returned after the practical activity where applicable.

Terrapins: Provided by the La Alfranca Wildlife Recovery Centre (Zaragoza) with transfer documentation stating the reason for transport, number of animals and persons involved.

Pigeons: Provided and transported to and from the Faculty by Zaragoza City Council.

Broilers and laying hens: Obtained from commercial holdings in compliance with health requirements. They are not returned to the holding of origin and are subsequently euthanised in the Necropsy Room during another practical session.

6. Waste management

Teaching activities generate small quantities of healthcare waste. The University of Zaragoza, through the UPRL and in accordance with current legislation, manages the removal of Groups II, III and V healthcare waste generated at its workplaces.

Group II - Non-specific healthcare waste: Waste requiring additional internal management because of infection risk, including dressings, plaster casts, single-use clothing and materials contaminated with blood, secretions and/or excretions, and other waste not classified as specific healthcare waste. It is managed internally by producers and the cleaning contractor and placed in the green polyethylene bags specified in the source manual, then disposed of through municipal-waste containers.

Group III - Specific or hazardous healthcare waste: Waste requiring preventive measures during handling, collection, storage, transport, treatment and disposal. It is managed by the UPRL and an authorised external waste manager. Examples include infectious waste such as medicine residues or expired medicines, and sharps. The source manual specifies black 30/60-L biohazard containers for the former and small yellow containers with red lids and biohazard marking for sharps.

Group V - Chemical waste: Waste classified as hazardous because of chemical contamination. It is managed internally by the UPRL under procedure PoUPRL-GRP.

7. Accident response procedure

VERY MINOR INJURY (no medical attention required)	MINOR INJURY (medical attention, NO sick leave)	SIGNIFICANT INJURY (medical attention WITH sick leave)
Go to the first-aid kit in the Teaching Farm and treat the injury with the available materials. Notify the Head of Service and the Faculty Administrator. Inform the UPRL.	Provide initial first aid using the first-aid kit and trained personnel. Arrange transfer to the appropriate occupational accident mutual insurance healthcare centre. Notify the Head of Service and Faculty Administrator. Inform the UPRL.	Assess the injuries and act cautiously; request help if necessary. Provide first aid using the available kit and trained personnel. Arrange transfer to the appropriate occupational accident and disease healthcare centre and accompany the injured person to hospital. If necessary, request an ambulance through the Zaragoza Access Control Office (ext. 1112). Notify the Head of Service and Faculty Administrator, send the sick-leave certificate to Payroll and Social Security, and inform the UPRL.

8. Entry, changing and exit procedures

Entry and changing procedure

- Enter the changing cubicle in street clothes and put on the required PPE: Crocs-type clogs, work coverall, latex gloves and safety goggles.
- Leave the changing cubicle wearing the PPE and carry the reinforced-toe rubber boots.
- Store street clothes in the locker.
- Leave the clogs on the rack and change into reinforced-toe rubber boots.
- Enter the Teaching Farm safely.

Exit and changing procedure

- Clean boots thoroughly at the designated boot-cleaning station using water and a brush, and disinfect them appropriately.
- Store boots on the rack and change into Crocs-type clogs.
- Remove latex gloves and collect street clothes from the locker.
- Enter the changing cubicle and put on street clothes.
- Leave the Teaching Farm safely.

Strict adherence to these entry and exit procedures is essential to minimise contamination and accident risks and to maintain a safe working environment.

9. References

- Annex 1 to Decree 29/1995 of 21 February, Government of Aragon, on healthcare waste management in the Autonomous Community of Aragon.
- National Institute for Safety and Health at Work (INSST): www.insst.es
- Law 22/2011 on waste and contaminated soils (as cited in the source manual).
- Teaching programmes for Veterinary Degree courses: <https://estudios.unizar.es/estudio/ver?id=130>
- Royal Decree 53/2013 of 1 February establishing basic rules for the protection of animals used for experimental and other scientific purposes, including teaching.
- Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products.
- Royal Decree 664/1997 of 12 May on the protection of workers against risks related to exposure to biological agents at work.
- Royal Decree 952/1997 of 20 June amending the Regulations implementing Law 20/1986 on Toxic and Hazardous Waste.
- Royal Decree 685/2013 of 16 September establishing a system for the identification and registration of ovine and caprine animals.
- Royal Decree 773/1997 of 30 May on minimum health and safety requirements for the use of PPE by workers.
- Occupational Risk Prevention Unit, University of Zaragoza: <http://uprl.unizar.es/seguridad.html>

Faculty of Veterinary Science - University of Zaragoza