Modules art. 23.2.b function:
designing procedures and projects;

Species specific

Module 3: Basic and appropriate biology

This module provides an introduction to the basic principles of animal behaviour, care, biology and husbandry. It incorporates information in relation to anatomy and physiological features, including reproduction, behaviour and routine animal husbandry and enrichment practices. It is intended to provide enough background information for someone to be able to design animal experiments for the specific species.

Following this theoretical training, practical training, under supervision, is required to provide each individual with the expertise and skills needed for them to carry out their particular procedures. Practical training requirements will, inevitably, differ according to the procedures to be performed.

Learning Outcomes

Trainees should be able to:

3.1. Describe basic anatomy, physiology, reproduction and behaviour of the relevant species.

3.2. Recognize and describe life events that have the potential to cause suffering including sourcing, transport, housing, husbandry, handling and procedures.

3.3. Describe the dietary requirements of the relevant animal species and explain how these can be met.

3.4. Describe the importance of providing an enriched environment (appropriate to both the species and the science) including social housing and opportunities for exercise, resting and sleeping.

3.5. When relevant to the species, recognise that there are different strains, and that these can have different characteristics which can affect both welfare and science.

3.6. When relevant to the species, recognise that alterations to the genome can affect the phenotype in unexpected and subtle ways, and the importance of monitoring such animals very carefully.

3.7. Maintain and interpret accurate, comprehensive records of animals held in the animal facility, including the wellbeing of the animals

Module 4: Animal care, health and management

This module provides information on various aspects of animal health, care and management including, environmental controls, husbandry practices, diet, health status and disease. It also includes relevant basic learning outcomes relating to personal health and zoonoses.

Learning Outcomes

Trainees should be able to:

4.1. Describe suitable routines and husbandry practices for the maintenance, care and welfare for a range of animals used in research, to include small laboratory species and large animal species where appropriate.

4.2. Describe suitable housing conditions for laboratory animals, how conditions are monitored and identify the consequences for the animal resulting from inappropriate environmental conditions.

4.3. Recognise that changes to or disruption of circadian or photoperiod can effect animals.

4.4. Describe the biological consequences of acclimatisation, habituation and training

4.5. Describe how the animal facility is organized to maintain an appropriate health status for the animals and the scientific procedures.

4.6. Describe how to provide water and an appropriate diet for laboratory animals including the sourcing, storage and presentation of suitable foodstuffs and water

4.7. Describe the methods, and demonstrate an understanding of appropriate, safe and humane handling, sexing and restraint of one or more named species for common scientific procedures.

4.8. Name different methods for marking individual animals and state an advantages and disadvantage for each method.

4.9. Describe potential disease risks in the animal facility, including specific predisposing factors which may be relevant. Name methods available for maintaining appropriate health status (including use of barriers, different containment levels use of sentinels as relevant to the species).

4.10. Describe appropriate breeding programmes

4.11. Describe how genetically altered animals can be used for scientific research and the importance of monitoring such animals very carefully.

4.12. Describe the correct procedures for ensuring health, welfare and care of animals during their transport.

Module 5: Recognition of pain, suffering and distress

This module prepares individuals to be able to identify normal condition and behaviour of experimental animals and enable them to differentiate between a normal animal and one which is showing signs of pain, suffering or distress which could be a result of factors including environment,

husbandry or the effect of experimental protocols. It will also provide information regarding severity classifications, cumulative severity and the use of humane endpoints.

Learning Outcomes

Trainees should be able to:

5.1. Recognise normal or desirable behaviour and appearance of the individuals in the context of species, environment and physiological status.

5.2. Recognise abnormal behaviour and signs of discomfort, pain, suffering, or distress, as well as signs of positive well-being and principles of how pain, suffering and distress can be managed.

5.3. Discuss factors to be considered and methods available for assessing and recording the welfare of animals e.g. score sheets.

5.4. Describe what a humane end point is. Identify criteria to be used to set humane endpoints. Define action to be taken when a humane endpoint is reached and consider possible options for refining methods to finish at an earlier endpoint.

5.5. Describe the severity classifications included in the Directive and give examples of each category; explain cumulative severity and the effect this may have on the severity classification.

5.6. Describe the circumstances when anaesthesia or analgesia may be necessary to minimise pain, suffering, distress or lasting harm

Module 7: Minimally invasive procedures without anaesthesia

This module provides an introduction to the theory relating to minor procedures. It provides information about appropriate methods of handling and restraint and describes appropriate techniques for injection, dosing and sampling relevant to the species. It should provide information sufficient for individuals to understand what will be required of them before they go on to trained in the practical aspects of these skills whilst under supervision.

Learning Outcomes Trainees should be able to:

7.1. Describe appropriate methods and principles to be followed when handling animals (including methods of manual restraint and use of restricted environments).

7.2. Recognise the biological impact of procedures and restraint on physiology.

7.3. Describe refinement opportunities for procedures and restraint.

7.4. List techniques/procedures including, for example, injection, sampling and dosing techniques (routes/volumes/frequency), dietary modification, gavage, tissue biopsy, behavioural tests, use of metabolic cages.

7.5. Describe how to perform minor techniques (without anaesthesia) and relate appropriate sample volumes and sampling frequencies for the relevant species.

7.6. Describe the need for rigour and consistency in conducting scientific procedures and the correct recording and handling of samples.

7.7. Describe appropriate methods for the assessment of the welfare of animals with respect to the severity of procedures and know what appropriate action to take.

7.8. Recognize that refinement is an on-going process and know where to find relevant, up-todate, information.

7.9. Describe the biological consequences of transport, acclimatization, husbandry conditions and experimental procedures on the species concerned and describe how these can be minimised.