

EXPERIMENTAL ANIMALS

Experimental animals are bred specifically for research purposes.

Experimental animals can be used in the laboratory or on the field depending on the location of the research.

They are kept in defined micro and macro environment units.

They **MUST** be procured from the same source (unit) where conditions of breeding are almost the same and meet the minimum standard.

Laboratory animals account for 80-90% of animals used in biomedical research.

Experimental animals include mice, rats, hamsters, guinea pigs, ground squirrels, rabbits, fish, amphibians, cats, dogs, pigs, sheep, goats, cattle, horses, monkeys, etc.

The use of specific experimental animals must be appropriate to the research objective and methodology.

WHY DO WE USE ANIMALS FOR RESEARCH?

In view of the complex nature of human research and development, the basis for the use of animals in research can be broadly classified as follows:

1. Study and understanding of fundamental biological principles.
2. Models for human disease.
3. Alternative models for drug evaluation and toxicity prior to release for clinical use; human and veterinary.
4. Development and testing of biological products e.g. vaccines, hormones etc.
5. Enhancement in the development of knowledge that can be of benefit to humans, animals and the environment.
6. Research involving behavioural sciences.

REGULATIONS AND PRINCIPLES

The regulation of animal welfare in the USA before 1963 was operated solely by investigators and research laboratories. Hence, inconsistent animal care policies and standards of care were common.

Thus, in 1961, a group of veterinarians came together to form the Animal Care Panel resulting in the publication of the first edition of "The Guide for the Care and Use of Laboratory Animals" (*Guide*) in 1963.

The *Guide* is an internationally accepted primary reference on animal care and use, and its use is required in the United States by the Public Health Service Policy. Subsequent revisions of the *Guide* in 1965, 1968, 1972, 1978, 1985, 1996 and 2011 were supported by NIH (NIH, 2011; NABR, 2017).

The efforts led to the formation of the American Association for the Accreditation of Laboratory Animal Care (AAALAC) in 1963 whose name was changed in 1996 to the "Association for the Assessment and Accreditation of Laboratory Animal Care International (AAALAC)".

The Animal Welfare Act was also established in 1966 with the US Department of Agriculture (USDA) as the responsible agency. The USDA inspected animal use facilities, but did not inspect or regulate individual laboratories. The Animal Welfare Act was later revised in 1971, and institutions were advised to form an animal care committee and seek accreditation from AAALAC. Compliance required adhering to the *Guide*, the Animal Welfare Act, and an additional set of "Principles for the Use of Laboratory Animals". In 1979, [U.S. Public Health Service](#) (PHS) policy took over, requiring an animal care committee for each animal-using grantee institution and expanding the species covered to include all vertebrates.

In 2006, an ad hoc committee appointed by the Institute for Laboratory Animal Research recommended that the *Guide* be updated. In the last update of the *Guide*, the committee realised the need for continual updating of the *Guide* so as "to provide information that will enhance animal well-being, the quality of research, and the advancement of scientific knowledge that is relevant to both humans and animals" (NIH, 2011).

Although there is no specific regulation on the use of animals for research in Nigeria, there is the provision for measures against cruelty to animals in our constitution, an excerpt is provided below; A criminal offence is committed when any person,

- a. causing or procuring the commission or omission of any act, causes any unnecessary suffering, or, being the owner, permits any unnecessary suffering to be caused to any animal;
or
- b. conveys or carries, or being the owner, permits to be conveyed or carried any animal in such manner or position as to cause such animal unnecessary suffering;
or
- c. wilfully without any reasonable cause or excuse administers, or causes or procures, or, being the owner, permits such administration of, any poisonous or injurious drug or substance to any animal, or wilfully without any reasonable cause or excuse causes any such substance to be taken by any animal;
or
- d. subjects, or causes or procures, or being the owner, permits to be subjected, any animal to any operation which is performed without due care and humanity [Nigeria Criminal Code Act, 1990]