

Mustansiriyah University
College of science
Biology Dept.
Zoology
4th class
Laboratory Technique LAB.
(7)

NAME :

ANIMAL LABORATORY

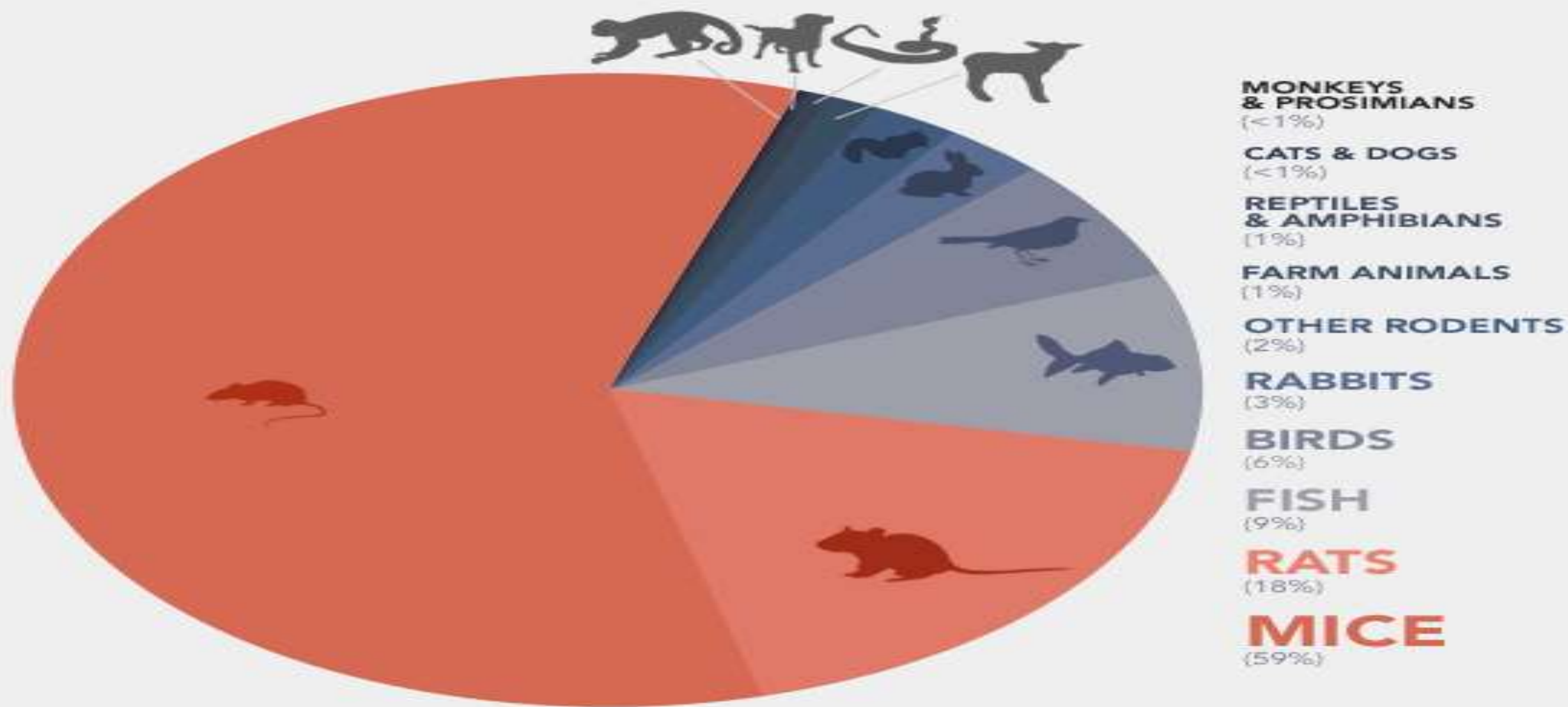
- **ANIMAL TESTING**, ALSO KNOWN AS **ANIMAL EXPERIMENTATION, ANIMAL RESEARCH AND *IN VIVO* TESTING**, IS THE USE OF NON-HUMAN ANIMALS IN EXPERIMENTS THAT SEEK TO CONTROL THE VARIABLES THAT AFFECT THE BEHAVIOR OR BIOLOGICAL SYSTEM UNDER STUDY.

The most important species of laboratory animals

- **MOUSE** – MOST FREQUENTLY USED. PHARMACOLOGY, GENETICS OF MAMMALS, VIROLOGY, MODELS OF HUMAN DISEASES (MUTANT STRAINS, TRANSGENIC AND KNOCK-OUT MICE)
- **RAT** – PHYSIOLOGY OF COGNITIVE PROCESSES, BEHAVIOUR, MODELS OF DIABETES
- **RABBIT** – SEROLOGY, INSULIN QUANTIFICATION, PYROGENS QUANTIFICATION, TESTS OF IRRITABLE EFFECT OF CHEMICAL SUBSTANCES ON THE CORNEA
- **CAT** – STUDY OF CNS AND RESPIRATORY SYSTEM
- **DOG** – USE IN ELECTROPHYSIOLOGY, NEUROPHYSIOLOGY
- **GUINEA-PIG** – IN MICROBIOLOGY AND SEROLOGY, PHYSIOLOGY OF THE AUDITORY SYSTEM
- **HAMSTER** - GENETICS
- **PIG** – TRAINING OF SURGICAL TECHNIQUES, TEMPORARY COVERING OF BURNS WITH PORCINE SKIN
- **PRIMATES** – RHESUS MONKEY, BABOON, CHIMPANZEE – USE IN NEUROLOGY, VIROLOGY, BEHAVIOUR
- **FROG** – PHYSIOLOGY OF BLOOD CIRCULATION, ELECTROPHYSIOLOGY
- **FISH,INSECTS...**

ANIMALS USED FOR EXPERIEMENTS

EUROPEAN UNION, 2008



DATA FROM: SIXTH REPORT ON THE STATISTICS ON THE NUMBER OF ANIMALS USED FOR EXPERIMENTAL AND OTHER SCIENTIFIC PURPOSES IN THE MEMBER STATES OF THE EUROPEAN UNION (2010)

EXAMPLES OF USE IN RESEARCH:

1. CANCER
2. DOWN SYNDROME
3. DIABETES
4. LEUKEMIA
5. ALLERGIES
6. RESPIRATORY DISEASES
7. NUTRITIONAL RESEARCH



Overview

- Some people are troubled by the use of animals in research. Each individual must make decisions about the kind of research he/she wishes to perform.



Justification for using animals

- Q. Why is this the right animal model?
 - A. Research should be undertaken with a clear scientific purpose.
 - B. There should be a reasonable expectation that the research will:
 - 1. Increase knowledge of the processes underlying the evolution, development, maintenance, alteration, control, or biological significance of behavior
 - 2. Increase understanding of the species under study
 - 3. Provide results that benefit the health or welfare of humans or other animals.

Transportation Issues

- I. Proper packaging
- II. Timely shipping
- III. Appropriate care upon arrival

- Once the animals arrive:
 - Adequate Veterinary Care
 - Consultation with the principal investigator to minimize pain and distress.

Housing Standards

- I. Heating, cooling, and temperature
- II. Ventilation
- III. Compatible groupings
- IV. Exercise
- V. Food and water
- VI. Psychological well-being

Disposal

- The return of wild-caught animals to the field can carry substantial risks
 - To the formerly captive animals and to the ecosystem.
 - Animals reared in the laboratory should not be released
 - In most cases, they cannot survive or they may survive by disrupting the natural ecology.
- Proper (humane) euthanasia