

Housing of Laboratory Animals

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- Laboratory animals require elaborate housing with adequate ventilation and space to move.
- The house should provide **protection** from inclement weather, predators, mosquitoes, insect and comfort.
- Laboratory animals can be housed on floor or in cages in-groups in the house.
- The space requirement mostly depends on weight and size.

Site of housing

1. Higher elevation with upwind flow(Lee ward) side of laboratory.
2. **Minimum** access to visitors.
3. Minimum noise disturbance.
4. Separate or away from main biological/immunological production unit.
5. Away from polluted areas(Industrial/Chemical)



Types of Houses

I. Non-air conditioned

II. Air conditioned

Non-air conditioned

- The direction of air flow should be taken into consideration while constructing these houses.
- The air flow should not directly enter the entrance of house.
- There should be two or three pre-entry points before actual entry in animal house.
- The house should have two corridors.
 - a. Clean corridor
 - b. Dirty corridor

Clean corridor

This is placed in front of animal room and used.

I. To bring in sterile food/feed

II. To take in autoclaved cages

III. To take in bedding material in the house.



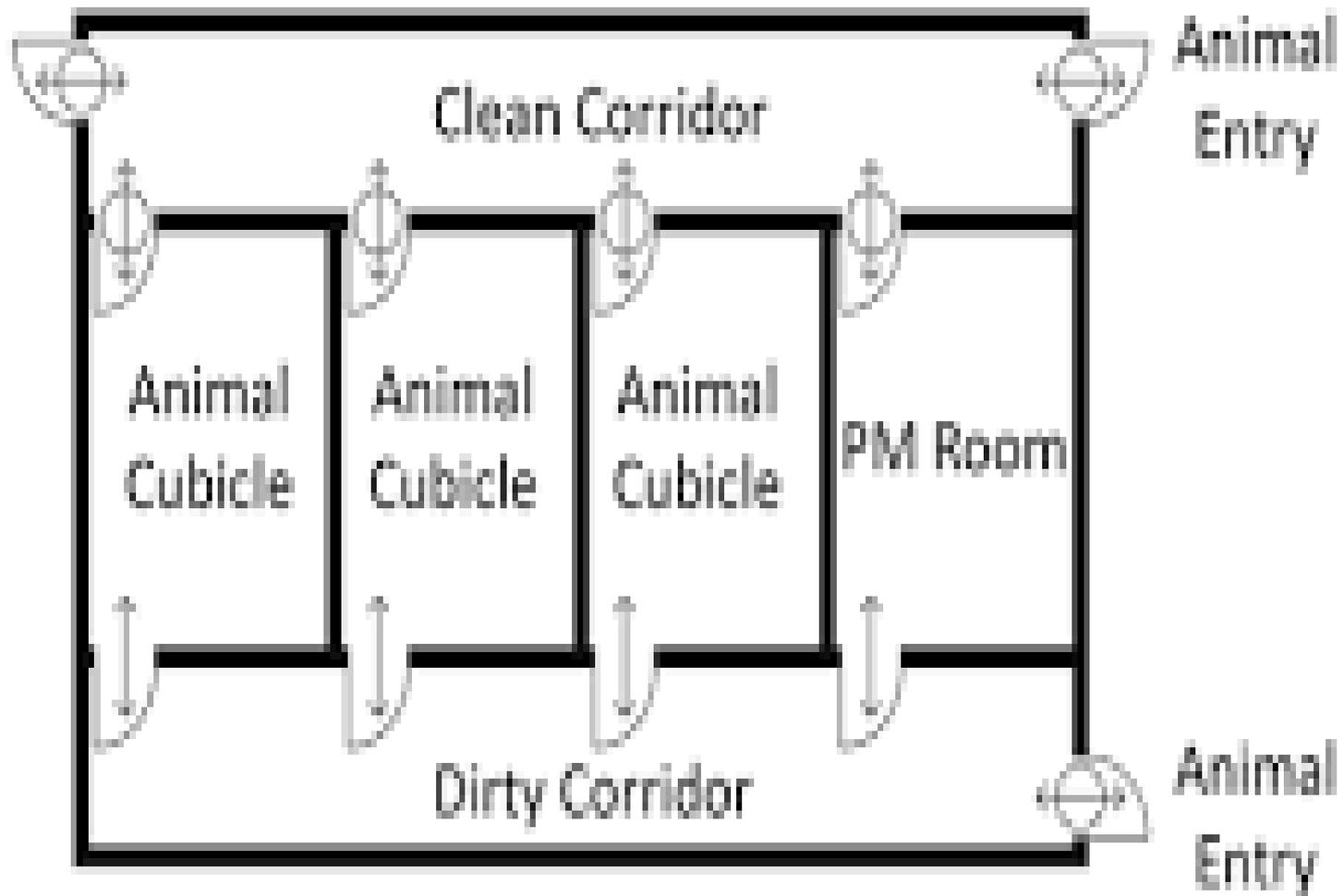
- A foot-dip with antiseptic/disinfectant solution be provided at the entry of clean corridor which facilitates reduction of microbe infiltration in the house.
- The door of entry should open outside so that hot and light air rush outside after opening the door, which will help in checking the infiltration of outside infection in the house.
- The house must be free from rodents as well as insects like mosquitoes. Cockroaches, bugs, flies.

Dirty corridor

This is placed at backside of animal house and used

- I. To remove the garbage by having a washing room.
- II. To check contamination of incoming food/feed by removing garbage by separate outlet.
- III. To prevent direct cold drafts or entry of sunlight in animal rooms.

Personnel
entry/exit



Air-conditional houses

1. **Central air-conditioned** : The rate of air flow currents required/h is 8-10 times.
2. **Window air-conditioned** : The air inside specific room or laboratory is conditioned by regulating temperature of atmosphere in the room.

Animal house plan

- Animal room : In addition to quarantine, office.
- Normal animal rooms (Breeding).
- Experimental animal room.
- Washing and sterilization rooms
- Store room
- Incineration room

Housing standards

- Dimensions of animal rooms.
- Ventilation and other specification

Space requirement of laboratory animals

Mice

- 3.5 X 4.5 m 15.75 m² room can accommodate 200-300 mice in cages on racks
- 200 cm² 1 female with pips/1 breeding pair.
- Cages size: 25x15x22.5 cm capacity 4 adult mice or 10-12 weaners.
- Sterilization of cages at 151b pressure for 30 minutes with changing of bedding material twice a week.

Rat

- Cage size: 40-45 x25x37.5cm (2:1)

Hamster

- Cage size 40-45x25-39 x37.5 cm (2:1)

Mice/Rat

- Room temperature 20-24 C.
- Relative humidity 50-60%.
- Ventilation changes should be 15/h.

Guinea pigs

- Cage size : 45X90X40(cm) 8-10 adult.

Rabbit

- Cage size 61x48x46cm (Single adult rabbit)

Guinea pigs

- Room temperature 20-24 c.
- Relative humidity 50%.
- Ventilation changes/h should be 10-15.
- Very susceptible to temperature fluctuations

Rabbit

- Room temperature 15-21c.
- Relative humidity 50- 60%.
- Ventilation changes/h should be 10-15.
- Above 30 c in combination with high R H leads to a risk of heat stress, which can cause infertility/mortality.

Housing requirement

- Floor
- Ventilation
- Cages
- Bedding material

Types of cages

- Breeding cage
- Stock cage
- Experimental cage
- Travelling cage

Cage can be made from wood, plastic, glass, stainless steel

Plastic cage are becoming **more popular** made up of polypropylene or polycarbonate or any other material which can tolerate autoclaving.

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If your hamster lives in an aquarium, make sure the top is securely fastened after cleaning and replacing the water bottle.





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- Maximum capacity of cage **30 mice/cage**.
- Experimental cage are used for special purpose and should be autoclaved at start and at end of experiment.
- Travelling cages used for transportation of mice for air and train transportation strong boxes should be used.

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- Each compartment should hold **20-25** animals.
 - The boxes should be labeled **“Livestock”**
 - Cardboard travelling can also be used for short journey.

Bedding material

- Ideal bedding material should be **harmless, nontoxic, free from pathogenic organisms, good absorber of excreta** on every solid floor there should be bedding.
- The bedding serve to absorb moisture, provide insulator and should have **nest building material**. The bedding should be **easily disposable** and available.

Types of bedding material

- **Sow dust** : it is very suitable but it contain **phenol compound**.
- Soft wood shaving.
- Stenolite
- Straw

Bedding for transit 2 inches

Oat husk

Wood wool

Paper cutting

Paddy husk

Precaution bedding material

- Should be made up of reliable material.
- Sterilized before use.
- Bedding material should be stored in rodent proof room.
- Bedding material should not be harmful if eaten by lab animals.
- Sterilized cotton and paper cutting should be used for post-operative animals.

Thank you