

Mice (*Mus musculus*)

DANVEER SINGH YADAV

Assistant Professor

Livestock Production Management

College of Veterinary Science A.H. (NDVSVU), MHOW

Mice



Mice

- Most commonly used due to small size and similarity with human being.
- Order – Rodentia
- Sub-orders – myomorpha
- Family – Muridae
- *Mus musculus*

General description

- It cheapest and most readily available.
- Albino in colour with lighter colour on ventral
- Adult weight 18-20 gms
- Eye black and pigmented.

- They are omnivorous and are “experimental feeders” they have tendency to eat edible and leave the inedible food.
- Lab. Mice are selective breeders.
- Mice are active from time they are born. If they are not active they are likely to be rejected by dam but this does not occur in rat

Behavioral character

- Gentle easily handled.
- Mice active in night(**Nocturnal**) and are photophobic.
- Mice are “**Determined escapers**” if mice got opportunity to escape from cage, it does not return to captivity.

- Presence of man, **ceases the activity** of mice.
- Do not tolerate well when **singly** caged.
- Mice in cage finding escaper mice over top, attack from below and seriously wound that mice.

Species of Mice

- White mice
- Black mice
- Chocolate
- Fawn
- Blue
- Dove
- Champagne
- Silver agouti
- Cinnamon
- Siamese
- Argente

Strains

- Indian strains larger in number than any other species of mammal.
- The present no of Indian strains are **100-200**.
- **Swiss Albino**(IB), Kausali, NIN,CBA, Balb-S, Ch-3, C-57.

Day old mice



- **Altricial** young are born/hatched helpless

Mice, Rat, Hamster, Rabbit

- **Precocial** species are those in which the young are relatively mature and mobile from the moment of birth/hatching.

Guinea Pig, Hare

Breeding cycle

- Mature at age of about 1 month female is reactive for 12 hours, if successfully mated pregnancy occurs. If fertilized by non-fertile male, she will go into **pseudo pregnancy** and last for 21 days.

- When female is housed singly away from male, it becomes irregular in exhibiting estrous and also interval between cycles tend to be longer. Further, when large groups of females are housed together they go into anestrus by due to pseudo pregnancy, which is known as “**Lee boot effect**”.
- **Bruce effect**: if a female mouse successfully mated by male may be failed to become pregnant if she is exposed to other male within 24 hours.

- When such females are housed again with male, within 72 hours they will exhibit regular estrus, which is called as “Whiten effect”.
- Synchronization of estrus by keeping number of female together in a cage “Whiten effect”.
- Estrus can be detected by preparing vaginal smear.
- Breeding life up to 9 months but should be retired after 6 months.

Breeding of Mice

- **Harem method** (4 does with 1 buck)
- **Vaginal plug** : Estrous cycle is about 4 days and estrous lasts for matter of hours only for about 24 hrs after mating, the vagina of female is filled with a very obvious plug of coagulated ejaculate. This coagulant is **3mm** in diameter at open end of vagina and this **can easily be seen by naked eye**. It stages for about 48 h but is liable to shrink and comes out. Its colour also turns during second 24 period becoming grey.
- The **presence of vaginal plug** indicates whether female has conceived or not.

Watering

- Given by automatic drinkers water should always be available. Mice require same amount of water as food.
- To prevent massive bacterial proliferation in water bottle the bottle may be acidified with HCL to given PH of 2-2.5.
- This is achieved by adding 2 ml of HCL to 3 liters of water.

Acidification of water has 2 advantages

1. Acid suppress bacterial, fungal, algal growth in bottle
2. It also prevent deposition of calcareous material from tap water.

Thank you