

**Do you know ?**

1. Can you differentiate domestic and wild animals?
2. Which wild animals are harmful for agriculture crops?

In India, wildlife protection act 1972 is in enforcement. Now a days abundant population of wild animal is found on farms and near forests. Wild animals are special challenge for farmers throughout India. Many wild animals make heavy losses to farm and farm crops. They can damage the plant parts or crop simply by running in the field or trampling the crops. Farmers suffer heavy financial losses due to wild animals. These wild animals such as wild boars, monkeys, elephants, dears, nilgai, rabbits, moles, squirrels, parrots, peacock, etc. damage the crops.

Maharashtra is a home to a large number of animals including tiger, leopard, wild boars, monkey, rabbit, crocodile, bison, gawa, nilgai etc.

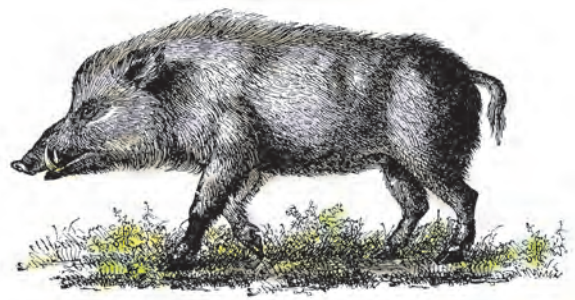
**Use your brain power**

- What type of damage to crops and crop fields done by wild animals?
- Up to which extent damage done by wild animals?
- Collect information about wild life protection act.

For security of agricultural crops and crop fields every farmer should be aware and take into consideration the fact that animals are living beings and need to be protected from any potential suffering.

12.1 Protection from wild animals**12.1.1 Wild boars**

Wild boars are unpredictable and have violent nature. Most noticeable feature of wild boar is long curved tusks. Fully grown wild boar weighs about 50 to 90 kgs. The razor sharp tusks itself is a primary weapon of wild boar. When agitated, they charge with these tusks. Sharpness of tusks and heaviness of his body could result in injuries to crop and farmer.

**Fig. 12.1 : Wild boar****Always remember**

1. Wild boars are highly adaptable to wide range of climate.
2. They are opportunistic, omnivorous. They eat mostly plant material and invertebrate animals such as worms, insects, insect larvae, etc.
3. They have high reproductive potential. They reach sexual maturity as early as six month of age and produce average about six piglets at each calving.
4. Female boar may undergo farrowing twice per year.
5. They have low natural mortality.

Nature of damage

Wild boars consume and trample crops. Uprooting of crops and wallowing in the field may create holes (pits) that can damage farm equipments and disturb farm operation.

Control Measure

1. Trapping wild boars by box traps, cage traps, corral traps, using prebait and baits.
2. More than 40 transferable diseases (Zoonotic diseases) affect wild boar and some extent population may suppress.
3. Use of fences like wire fences, plastic fences, electric fences (Zatka Machine), etc.
4. Natural repellent, electronic repellent, etc are used to keep wild boars away from crops.
5. Fire crackers are also effective for keeping away these animals.



Fig. 12.2 : Damage by boar

12.1.2 Monkeys

Near about 13 species of monkeys are found in India. They are often seen living in group of 20-30 feeding on the ground or sitting on trees.

Nature of Damage

Monkeys are the notorious wild animals causing serious damages to agricultural crops. The monkeys consume plants as food and also change their food habits with change in season. Attack of monkeys could result in severe crop damage.



Always remember

1. Most monkeys live on trees, but some live in mountain areas.
2. Monkey tribes always move to find food. They do not have stable home.
3. Monkeys are very social animals.
4. Group of monkey is called tribe or troop. A troop will work together to take care of young monkeys in the group.
5. They also like to play, cuddle and protect each other.
6. The strongest and largest male monkey is the leader of the troop.



Fig. 12.3 Damage by monkey

Control

1. Mix 1/3 cup of flour, 2 table spoon chilli powder and 2 table spoon mustard powder and sprinkle the mixture in the garden to keep away monkeys. The mixture of 4 cups of water and some vinegar can be sprinkled with pepper on vegetables will deter monkeys from eating them.
2. Small pockets of boneless dry fish pieces are made and kept around the field. After opening the pockets monkeys rub the fish with both hands. After smelling they get irritated and rub their hands on rocks and continue the operation till the blood come out from the hand. Leader of gang face the bad experience. Thus they never enter the same field.

3. The practice of driving them away by beating drums and using well trained dogs has been used since long time.
4. Catch one monkey and paint its whole body except eyes with red paint and leave that monkey in the field. Due to fear other monkeys will not enter in the field. Repeat the process when a new group enters in the field.
5. Use fire crackers (which make large sound) like rassi bomb / sutali bomb.

12.1.3 Elephant



Recall a memory

1. Which is the largest land animal on the earth?
2. Discuss type of food of an elephant.

Two types of elephants are found on earth / world i.e. African elephant and Asian elephant. Group of elephant is called a herd.

Nature of damage

Wild elephants feed on agriculture crops, seeds, barks, leaves, grasses and trees. They use their tusks to pull out the bark from trees and dig roots out of the ground. They trample crops and damage crop fields. Also elephant cause damage to crops both in pre harvest and post harvest condition.



Fig. 12.4 : Elephant



Always remember

1. They have characteristic long nose or trunk, large, floppy ears, and wide thick legs.
2. Asian elephant and African elephant live at separate continents and have many unique features.
3. The herd is led by a matriarch, which is the oldest female. The matriarch will often teach young elephants in her herd.
4. Male elephants are called bulls and females are called cows. A baby elephant is called as a calf.



Fig. 12.5: Damage by elephant

Control

1. Buzzing of the bees - Studies showed that elephants are repelled by the sound of honey bees. Therefore start bee keeping around the field, there by generate some source of extra income.
2. Noise – it is a common practice to use loud noise to scare away instructive elephants. Noise makers include fire crackers, pipe cannons, vehicle horns, and rifle shots.
3. Light – bright lights, oil lamps and fire are sometimes used along the perimeter of a farm area to scare elephant population nearby farm.
4. Smoke fire – in some areas people burn elephant dung that will smoulder and create heavy acrid smoke.
5. Hot chilli – Capsaicin spray can repel elephants. Simplest method consist of planting a row of chili around cultivated fields and gardens.

6. Elephant geo fencing – It is a means of detecting radio collared elephants that cross a virtual fence line. When an elephant with a collar passes through a virtual barrier, a message is sent to the wildlife management center along with GPS coordination. This will help them to take action against attack of elephant.

12.1.4 Deer



Recall a memory

1. What are different types of deer in Maharashtra?
2. What is the destructive role of deer in agriculture?

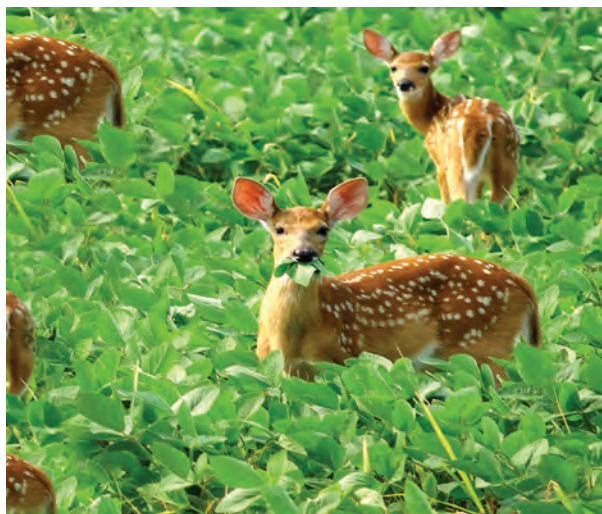


Fig. 12.6 : Deer



Always remember

1. Deers are included in antelope family.
2. Antlers are fast growing living tissue in the world.
3. There are over 60 different species of deer worldwide.
4. During the mating season, male deer will often use their antlers to fight and try to attract the attention of female deer.
5. Deers are present on all continents except Antarctica.

6. Length of pregnancy in deer varies according to size. Generally in large species the longer gestation period is observed.
7. Deer in tropical climate can breed all year round.
8. All species of deer have a four chamber stomach which allow them to chew the cud. This process of partial chewing food, regurgitating it, chewing it again to make easier to digest.
9. A male deer is called a buck but the some larger males are called as stags. A female deer is called a doe or hind. A young deer is called a fawn.

Nature of damage

Deer frequently prefer agricultural crops rather than wild foods.

There has been surge of damage among farms and gardens. Just two deer can produce a herd of up to 35 deer in just seven years.

In addition to flower beds and vegetable gardens, corn, peas, cotton, watermelon, peanuts and gram crops experienced the most damage from deer.

Control

Wild deer can have impact on agricultural production and environment.

Main methods of wild deer control include.

1. Trapping
2. Ground and aerial shooting (it's ban now)
3. Fencing - (a) Wire fencing
(b) Plastic fencing
(c) Electric fencing (Zatka Machine)
4. Fire Crackers
5. Dogs

12.1.5 Blue bull / Nilgai

Blue bull is the largest Asian antelope and most commonly seen as wild animal in India.



Always remember

1. Nilgai / blue bull is indigenous deer and is currently protected under wildlife protection act 1972.
2. Nilgai is the largest Asian antelope.
3. Mature male appears ox like and also are known as blue bull.



Fig. 12.7: Blue bull

Nature of damage

Nilgai is highly adaptive antelope naturally diurnal. It goes for field crop grazing in the evening and night. It is also found to damage most agricultural crops. Whereas in high density nilgai areas, damage to wheat, gram, mung, mustard crop is caused not only by grazing but also through trampling, resting in the field and daily movements of the animals.

A major constraint on control is that the nilgai is an animal of considerable religious reverence as most people in affected area are religious.

Control

1. Fencing - (a) Wire fencing
(b) Plastic fencing
(c) Electric fencing (Zatka Machine)
2. Fire Crackers

3. Pet Dogs can control blue bull.

4. Beating drums

12.1.6 Wild rabbits

Wild rabbits cause severe damage to crops. The main predator of rabbits is fox, while young rabbits also fall to bird attack as prey.



Fig. 12.8 : Rabbit

Nature of Damage

Rabbit are herbivores who feed by eating weeds, grasses, clover, wild flower and vegetable plants and other crops in warmer season.



Always remember

The male is called a buck and the female a doe.

1. Rabbits are generally 40 to 45 cm in length and have ears that measures 8.5 cms long. They have compact body with long powerful hind legs.
2. The smallest pygmy rabbit have only 20 cms of body length and 0.4 kg in weight while the largest rabbits grow to 50 cms and more than 2 kgs.
3. Rabbits are abundant in grassland areas where the soil allows them to make extensive well drained burrows, where there are hedges or patches of woodland to give shelter and cover.

4. Rabbits are herbivorous who feed by grazing on grass crops, leafy weeds, however they also eat all vegetables.
5. Rabbits generally are able to breed at young age and many regularly produce up to 7 young ones, at about so 4 or 5 times in a year 28 to 31 days.
6. New born rabbits are naked blind and helpless at birth.
7. Mothers are remarkably inattentive to their young and are almost absentee parents commonly nursing their young only once per day and for just few minutes.
8. The milk of rabbit is highly nutritious and among the richest of all mammals. The young grow rapidly and most are grown up in about a month.

Rabbits damage is almost always the result of their appetite for plants. They eat flower and vegetable plant during spring and summer and the bark of fruit and ornamental trees and shrubs in fall of winter.

Control of wild rabbits

1. Traps and snares – use of cage traps, drop box traps or spring traps. Place them where they will be exposed to severe weather. Place them near a fox earth or badger sett. Use self locking snares. Use only approved traps.
2. Fencing – use of cotton wire nets, strained wire (similar to the kind used to manage cattle and sheep) permanent wire mesh netting.
3. Ferreting - a domesticated polecat used for catching rabbits.
4. There are three types of fencing for controlling.
 - (a) Electric netting
 - (b) Electric strained wire (similar to the kind used to manage cattle and sheep)
 - (c) Permanent wire mesh netting
5. Baiting is the most cost effective way to reduce rabbit populations. e.g. 1080 (sodium fluoroacetate) rabbit bait is available.



Electric Fencing

Exercise

Q. 1 A) Fill in the blanks.

1. Wildlife protection Act is in force since _____.
2. _____ are unpredictable and has violent nature.
3. Feeding habit of rabbit is _____.
4. Group of monkey is called _____.
5. The herd is led by a _____ which is the oldest female

(B) Make the pairs.

A	B
a. Razor sharp tusks	1. Monkey
b. Antlers	2. Elephant
c. Big ears	3. Deers
	4. Boars
	5. Rabbits

(C) State true or false.

1. Male rabbit is called a buck and the female a doe
2. Boar has a long straight tusks.
3. Fire crackers are also effective for keeping away the wild animals.
4. Monkeys are not very social animals.
5. Monkeys consumed plants for food and change their food habits with change in season.

Q. 2 Answer in brief.

1. Write note on deer.
2. Why monkeys are lived in troops?
3. Give difference between deer and nilgai.
4. Write short note on elephant herd.
5. Write the nature of damage of nilgai?

Q. 3 Answer the following questions.

1. Which are the wild animals who causes serious problem to agri. crops?
2. Give control measures for wild boar.
3. What are the characteristics of the monkey ?
4. Explain nature of damage by elephant.
5. How will you control farm and crops from blue bulls ?

Q. 4. Answer in details.

1. Explain wild animals control strategies in detail.
2. Give nature of damage and control of elephants.
3. Give information about wild deer and their control.
4. Give information about rabbits in detail.
5. Give information about nilgai in detail.

Activity :

Collect the information about different wild animals causing damage to field crops.