4. GOAT MANAGEMENT

Do you know ?

- Scientific name of the goat is *Capra hircus*.
- Goat satisfies her 70 to 80 percent hunger through browsing

Goat is a versatile animal. It was the earliest domesticated (around 7000 B.C.) ruminant by man. The father of the Nation Mahatma Gandhi had candidly described it as "Poor man's Cow" considering its virtues and importance in rural economy. The goat is also termed as 'Wet Nurse of infants' in Europe, 'Mobile bank of the nomads on hoof ', 'mini cow' etc. Goat rearing requires low cost and hence suited for weaker section of the society. i.e. small, marginal farmers and landless labourers.

Remember terms pertaining to goat keeping

Flock / band	: Group of goat
Buck	: Adult male
Doe	: Adult female
Buckling	: Young male
Goatling	: Young female
Kid	: Young male and female up to 12 months
Wether	: Castrated male
Spayed	: Castrated female
Serving	: Act of mating
Kidding	: Act of parturition
Bleating	: Sound produced by goats
Chevon	: Goat meat

4.1 Importance of goat farming

1. Goat is versatile animal and provides meat, milk, skin, hide, hair (fur), mohair (soft white wool from Angora goats) and manure.
2. Goat is small animal, easy to handle and needs less capital investment. They have no specific demand for housing, feeding and management.
3. Goat is tolerant to harsh climatic conditions e.g. extreme cold and hot.

Remember...

Goat is considered as ATM for weaker section of the society as it provides any time milk and any time money to the owner

4. Goat farming generates employment opportunities for rural women and educated unemployed youth.
5. The market for goat is well established and it has increasing demand.
6. Goat meat has no religious taboos.
7. Goat is efficient converter of organic matter than other animals; it produces 185 kg milk / 100 kg digestible organic matter (DOM) as against cow (162 kg milk) and sheep (35kg milk).
8. Goat milk is easy for digestion to children and invalids due to its smaller sized fat globules (1.5 to 4.5 μ) and absence of clustering in milk.
9. Goat milk is alkaline and has medicinal value. It is recommended for patients suffering from dyspepsia, peptic ulcers, allergic eczema and infantile diarrhoea. It is also preferred in liver dysfunction, jaundice, acidosis and insomnia. Goat butter is used to cover rheumatic arthritis and neuritis.
10. Goat milk is rich in vitamin B_1 and contains three times more nitrogen, calcium, phosphorus and chloride than either human or cow milk.

11. Goat milk is suitable for preparation of various milk products viz. cheese, paneer and candy.
12. Goat hairs (fur) and mohair are used for preparation of blankets and garments
13. Goat hide is used for preparing different leather products.
14. Goat acts as an excellent experimental animal for physiological and biomedical research.
15. Goat meat contains less cholesterol which is desirable for health conscious people.
16. Goat manure contains 3 times more nitrogen, phosphorus and potash as compared to cow or buffalo manure.
17. Goat is eco-friendly animal under present scenario of global warming as it produces less methane than other ruminants.
18. Goat is tolerant to tannin and other toxic elements present in feeds of plant origin.
19. In high altitudes of Himalayas, goat provides draft power. Guddi goat can carry 10 kg of load on much steep slopes.
20. Goat is multi functional animal, all the body parts of goats have some utility e.g. intestine is used for preparation of catgut (a thread, used for suturing wounds in surgery), the hooves are used in paint industry and bones for bone meal production.
21. Goat is prolific breeder (giving twins/ triplets/quadruplets), matures at about 10-12 months of age and has short gestation period (150 days) and kidding interval (7 to 8 months).
22. Goat is efficient garbage converter as it utilizes the kitchen waste, waste of vegetable markets etc. very efficiently.
23. Goat is live seed drill as it spreads seeds of grasses and trees through pellets.
24. Goat is a fertigation machine as it drops the pellets and urine in grazing range.

4.2 Systems of goat rearing

The goats are reared under different feeding and management systems according to size of flock and resources available.

1. Tethering
2. Extensive system / Range system
3. Semi intensive system
4. Intensive system

1. Tethering : It is the method of grazing. It is followed only when 2-3 goats are maintained. In this method goat is tied to wooden peg with 3 to 5 m long rope for restricted grazing.

Advantages

1. Helps to keep the goats under controlled feeding
2. Utilization of grass is efficient
3. Other plants can be protected from notorious behavior of goat.
4. Goat keeper can carry out any other work while goat is grazing.

2. Extensive / Range systems : This system is commonly adopted in India .Goats are allowed to graze on pasture or free range, road sides. Small, marginal farmers and land less labourers take their goats and walk for long distance for feed and water.

Advantages

1. Feeding cost is almost zero
2. Useful in low resources, capital and management
3. Most economical
4. Goat fertilizes the grazing land by dropping manure and urine.
5. Tree lopping can be used as fodder.

Disadvantages

1. Shrinkage of grazing land may not provide optimum nutrients to goats
2. The seasonal variations affect the quality and quantity of fodder which may lead to malnutrition.
3. The genetic potential remains unexploited due to poor nutrition.

Observe and Discuss

How the goat plucks leaves through thorny twig

3. Semi- intensive / Semi stall fed system : It is combination of extensive and intensive system. This system is most appropriate system of goat feeding under which the goats are allowed to graze for 5 to 6 hours during day time and stall fed during evening hours by providing tree lopping, concentrate mixture, kitchen wastes, crop residues etc.

Advantages

1. The shortage of nutrients under grazing can overcome by stall feeding
2. Helps to exploit the genetic potential of animal.

4. Intensive system / Stall feeding : The goats are reared by taking proper care of feeding and housing. The goats are fed in the stall by cultivated fodder. The goats can be grazed on cultivated pastures having good fodder availability.

Advantages

1. The energy diverted for grazing and walking can be used for growth and production.
2. The genetic potential of animal is properly exploited

4.3 Housing of goats

Goat is the most tolerant animal for all harsh climates. However, the shelter is needed to protect them from extreme sunlight, heavy rains, cold temperature and snowfalls. The housing requirement varies according to the varying climatic conditions.

- In hot arid environments, goat needs well ventilated house for protection from excess heat.
- In hot and humid, high rainfall tropics, goat needs raised bed house for protection from rains as excessive wetting by rains can cause the pneumonia and parasitic load.
- In snow clad areas of temperate region, goat needs raised-bed house with hopper windows for protection against direct snowfall and cold waves.

The housing helps to control the body temperature of goat which has direct relation with endocrine function and excretion of sodium, potassium and water loss.

The goat house does not need elaborate design and building material. Good houses can be constructed with available resources at cheaper cost. The bamboo stem, sugarcane trash, coconut fronds, babul, neem, subabul timber can suitably be used as building material.

Goat house should be well ventilated, well lighted, dry and protect the animal from adverse climatic condition.

Do you know !

The comfortable house is one where the inside temperature between 20 to 25 ^{0}C is maintained.

Methods of goat housing

1. **Individual housing :** Each goat is housed in individual pen. It is good for dairy goats.
2. **Loose housing :** A flock of 20-50 goats kept loose in a compartment.

Points to be considered for goat housing

1. The goat house should be located at high upland and dry areas to facilitate proper drainage and avoid water lodging during rainy days.
2. Under Maharashtra condition, the orientation of building should be East-West to facilitate optimum sun light and ventilation.
3. The site should be easily accessible for marketing and procurement of raw material.
4. The goat house should not be in the vicinity of residential area to avoid undesirable, unhygienic, offensive and ammonical smell of urine.

5. There should be optimum water availability.
6. The surrounding should be clean and safe.
7. The house should be so designed as to make the daily routine operations like cleaning, feeding, watering easy.
8. The house should be economical and durable too.
9. Provision of electricity supply be assured.
10. Fire control system with trained manpower should be established.
11. Width of house should be 5 to 6 m to facilitate proper ventilation to reduce heat load.
12. Height at centre in A shaped roof should be 3 to 3. 5 m for maintaining proper ventilation.
13. Construct 'A' shaped roof to save other half side from solar radiation to control the heat.
14. Roofing material commonly used in our country is thatched, asbestos, painted and non painted tins.

Remember...

Roofing material in the goat shed determines the cost of construction and microenvironment within the shed.

15. Floor

- Afford more space in hot weather to control heat.
- Slatted or perforated, raised floor is best for hot and humid climate for good ventilation and easy cleaning.
- Cork brick floor for hot climate provides thermal resistance to maintain the temperature low.
- Concrete floor helps to keep the animal cool.
- Proper slope to the floor should be given for easy flow of urine and cleaning the floor with water.

Fig. 4.1 : Different Types of houses for goat

Table 4.1 : Optimum floor space requirement for goat

	Age group	Covered space (sq.m/goat)
1	Up to 3 months	0.5 to 0.6
2	3 to 6 months	0.7 to 0.9
3	6 to 12 months	1.0
4	Yearling goats	1.0
5	Adult goats	1.25 to1.5
6	Lactating does, Pregnant does and buck	2.0

Note- The open space should be double than covered space.

1. The height of side wall should be more than 3' to avoid the escape of goat outside.
2. Separate structures to house the goats according to age and stage of life are preferred.
3. The economical and convenient size of flock in one house is 50 to 60.
4. Kids with the stocking density exceeding the optimum level will adversely affect the health, growth productivity; hence they should be kept in group of 15 to 25 to avoid overcrowding.
5. The advance pregnant does (3 to 4 weeks before kidding) and the breeding bucks should be housed separately.
6. The size of manger should be 15 inches wide with height 2.5 to 3.0 feet.
7. Service passage/ feed passage should be 5 feet wide.
8. Gates for adult pens should be 9 feet wide.
9. Make provision for continuous supply of clean drinking water.
10. Watering space requirement per animal is as follows-
    a. Adult goat 40-45 cm
    b. Kids 30-35 cm

Internet my friend

Collect the information and photographs of different Goat byres under various climatic conditions

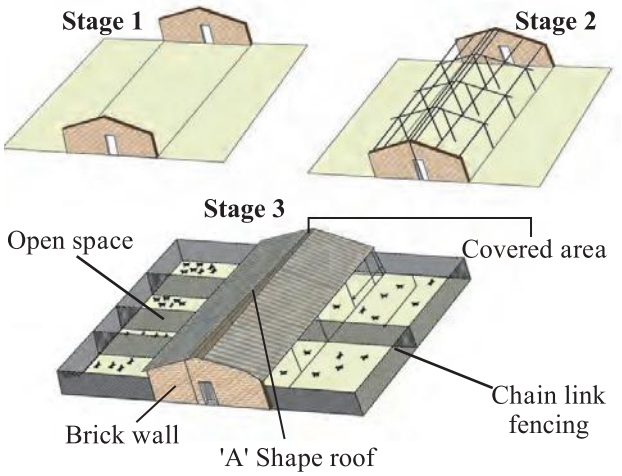


Fig. 4.2 : Ideal goat shed

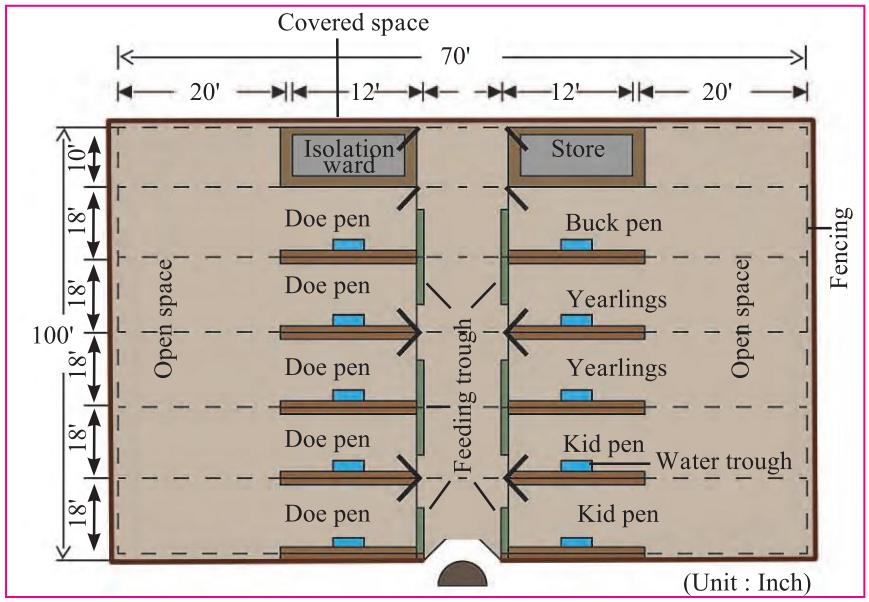


Fig. 4.3 : Plan of goat house for 50 goats

Structural components in goat house

An ideal goat house should comprise of following compartments -

1. Kid pen 2. Buck pen 3. Doe pen

4. Kidding pen 5. Yearling/ goatling shed

6. Store (grain, bran, hay etc.) 7. Weighing balance room 8. Record room 9. Office

10. Isolation room

1. Kid pen

- Weaned kids are kept in kid pen for proper feeding and management.
- Maximum 25-30 kids should be kept in one pen.
- The kids nearing maturity should be housed in separate groups.
- Protection against cold temperature should be provided by putting curtains or light during winter.
- Overcrowding in kid pen should be avoided.
- Dampness should be avoided to protect kids from pneumonia.

2. Doe pen

- The adult does are kept in doe pen
- The advanced pregnant does should be housed separately.
- Maximum 50-60 does should be housed in one shed.

3. Buck pen

- Buck should be housed in individual pen.
- The height of sidewall should be 4-5 feet.

4. Kidding pen

- The does due for kidding are housed in kidding pen.
- Kidding pen should have bedding material of dry grasses and straws.
- Bedding material should be changed every day.
- Feeding and watering arrangement should be done in kidding pen.

4.4 Care and management of kid

The care and management of kids starts from the womb of the mother. About 70 % growth of kids takes place during last two months of pregnancy. Hence, pregnant doe should be provided leguminous fodder along with 450 g concentrate daily.

Remember...

The kid is the product to be harvested for sale. To have healthy kids with less mortality (less than ten per cent) is the key of success of goat enterprise.

1. Feeding

Feeding of colostrum : Feed the colostrum within 30 min to 1 hr of birth as after that absorption rate of immunoglobulin slows down.

Do you know ?

Colostrum is the first milk, thick and yellowish in color, rich in Vitamin A and D. It provides antibodies to kid to develop immunity against infection.

2. Feeding of milk

1. Feed milk @ 10% of body weight of kid 3 to 4 times at an interval of 6-7 hrs for first week.
2. The temperature of milk should be 95 to 100^0 F.

Can you think ?

- The orphan kids (whose mother is died or lost after parturition) and the kids of the mother having less or no milk may be fed with cow milk or milk replacer.
- After 8 to 10 days of age allow the kid to nibble soft and tender grasses, hay and start the starter ration after 15 days of age.

3. Methods of kid rearing

The following are the two methods of kid rearing-

A. Suckling : Kids are allowed to suckle the milk from their mother directly.

Fig. 4.4 : Suckling kid

B. Weaning : Kids are separated from mother and milk fed with the nipple bottle.

5. Milk replacer : The artificially prepared substitutes of milk prepared from milk powder, cereals and flour having 24 per cent crude protein help to fulfill the nutrient requirements of kids to reduce the cost of feeding.

6. Starter ration :The ration given first time to the kids is called starter ration. It should have 18 to 20 per cent DCP, 72 per cent TDN. It should be palatable and easily digestible. The composition of an ideal kid starter ration is as follows

Table 4.3 : Composition of an ideal kid starter ration

Sr. No.	Ingredients	Parts
1.	Maize	22
2.	Gram	20
3.	Ground nut cake	35
4.	Wheat bran	20
5.	Mineral mix	2
6.	Common salt	1

7. Feeding of growing kids

From 3 months onwards, kids are fed leguminous roughages to supply enough nutrients for their normal growth. Low quality roughages if available should be supplemented with concentrate mixture (@ 300 to 400 g daily) having 12 to 14 % DCP and 62 to 65 % TDN fed. Over feeding should be avoided. Growing kids should be given following concentrate mixture.

Maize	:	20 parts
Gram	:	32 parts
Wheat bran	:	30 parts
Groundnut Cake	:	15 parts
Mineral mix	:	2.5 parts
Common salt	:	0.5 parts

Table 4.2 : Feeding schedule for kids

Body weight (Kg)	Goat milk (g)		Starter ration (g)	Green fodder (kg)
	AM	PM		
2	200	200	-	-
3	250	250	-	-
4	300	300	50	*Ad-libitum*
5	300	300	100	*Ad-libitum*
6	350	350	150	*Ad-libitum*
7	350	350	200	*Ad-libitum*
8	300	300	250	*Ad-libitum*
9	250	250	350	*Ad-libitum*
10	150	150	350	*Ad-libitum*
15	100	100	350	*Ad-libitum*

8. Finisher ration : Finisher ration is given to the kids which are to be slaughtered. Since goat are slaughtered mostly for lean meat, the roughages containing 25 to 30 % dry matter and concentrate mixture containing 6 to 8 % DCP and 60 to 65 % TDN needs to be provided.

2. Management practices

1. Cleaning mucus: Allow the mother to lick the kid. Remove the mucus from nostrils and body of kids by clean gunny bag. Tickle the tongue of the kid to stimulate respiration.
2. Cutting navel cord: for cutting the navel cord use sterilized blade or scissor, apply tincture iodine on cut end.
3. Remove meconium with soft and moistened cloth daily to clear the passage of excreta during first week of birth.
4. Allow the kids to remain with mother for 4-5 days so that close association with each other will develop.
5. Disbudding: Disbudding means removal of horn buds. It is being done to avoid horn growth to prevent the nuisance of fighting. It is usually done by applying Potassium hydroxide (KOH) stick. Disbudding is done at one week age in kids
6. Identification marks: In large flocks to maintain the record, identification marks are essential. The identification marks are given at the age of 7-10 days by tattooing or ear tags

Internet my friend

Collect the information on ear micro chip (RFID)

7. **Castration of male kids :** The male kids not useful for breeding are castrated with Burdizzo's Castrator. The appropriate age for castration is 2 to 4 weeks. The advantages of castration are as follows -

a. Male becomes docile.

b. Avoids indiscriminate breeding

c. Obtains faster weight gain

d. Skin becomes superior in quality

e. Improves the chevon quality

f. Increases profitability

g. Facilitates to keep male and female together

Can you think ?

- How to protect kids from cold weather during winter season viz.

1. Use of electrical bulb, heater,
2. Covering of byres by gunny bags/ tarpaulin/
3. Smoking in byres

3 Health care

1. Deworming of kids : To protect the kids from endoparasites (worms), deworming should be done as per schedule. Deworming should be carried out before and after the rainy season. (Table 4.4)

Table 4.4 : Deworming schedule for goat

Sr. No.	Type of worm	Schedule
1	Round worms	Once in a month from 1 to 6 months of age
		From 6 – 12 months of age, once in 2 months
		From 1 year onwards, once in 4 months i.e. June, October and March
2	Tapeworms	Twice a year i.e. January and June in lambs in problem flocks
3	Liver flukes	Twice a year i.e. May and October in disease prone area

2. Dipping : For controlling ectoparasites like ticks, lice, flea etc. dipping is carried out by dipping kids in suitable insecticide solution.

3. Vaccination : Follow the vaccination schedule given in Table 4.5.

4.5 Management of pregnant does

Care and management of pregnant does is very important to have the healthy kids and increased milk. After confirmation of pregnancy, the pregnant goats should be separated from flock and kept under special feeding and management regime. Gestation period in goat is 150 days.

1. Feeding

1. Feed laxative and leguminous and nutritious roughages along with 450 g concentrate daily.
2. Graze them on separate legume rich pasture, if the pregnant animals are allowed for grazing.

Fig. 4.5 : Grazing goats

Fig. 4.6 : Browsing goats

Remember...

The daily feed and fodder requirement of one adult goat is

- 3-4 Kg green fodder
- 1-2 Kg dry fodder
- 250-350 gm concentrate mixture

3. Clean and hygienic drinking water be made available at all the times.
4. Avoid over feeding or under feeding to prevent metabolic disorders. Weak goats give birth to weak kids while the fatty goats give birth to heavy kids leading to difficult kidding.
5. Provide extra ration to the pregnant goats during last 4 to 6 weeks to have proper growth of kid.
6. Reduce the concentrate mixture for goat to 100 g/day during last week of gestation.

Table 4.5 : Vaccination schedule for goat

Sr.No.	Disease	Primary vaccination	Regular vaccination
1.	Foot and mouth disease	3 months onwards	Twice in a year i.e. in March and September
2.	Peste des petits ruminants(PPR)	3 months onwards	Every 3 years
3.	Anthrax	3 months onwards	Every year before monsoon in endemic area
4	Enterotoxoemia	3 months onwards	Every year before monsoon-two doses at an interval of 15 days
4.	Haemorrhagic septicaemia	3 months onwards	Every year before monsoon
5.	Black quarter	3 months onwards	Every year before monsoon
6	Contagious caprine pleuro-pneumonia	3 months onwards	Every year in January.

Can you think ?

Goats prefer leguminous fodder and meet out its appetite through browsing hence it is called as **browser**

2. General management

1. House the pregnant goats in separate pen to avoid hazards of crowd and facilitate better care.
2. Dry off the lactating doe before 4 to 8 weeks of kidding; it helps proper development of kid and increased milk production during next lactation.
3. The advance pregnant goats should not be permitted for grazing.
4. Make provision of soft bedding material i.e. dried grass or straw for pregnant goats during last two weeks of pregnancy.

3. Health care

1. Deworming thrice a year/ change in season. Advance pregnant animals should not be dewormed.

Remember...

- Clean the kidding place with hot water added with disinfectant.
- Dispose off the placenta. If placenta is not dropped naturally don't pull it or tie any weight like chappals, wait for 24 hrs. and then consult veterinary doctor.
- Wash the hind quarters with warm water and antiseptic solution.
- Protect the animal from harsh climate (extreme cold or hot).
- Provide cooked bajara grains + jaggery + oil containing small amount of ginger, salt and mineral mixture.
- Provide 500 g concentrate and fodder as per the choice.

2. Follow vaccination schedule (Table 4.5). Do not vaccinate the does during first 2-3 months of pregnancy.
3. Carry out the screening of animals for tuberculosis, Johne's disease and brucellosis.
4. Frequent washing, brushing and grooming should be done to keep the animal free from ectoparasites.

4.6 Care of lactating does

The lactation starts immediately after kidding. For first 3-4 days colostrum is produced and then it is converted into milk .

1. Feeding

1. Provide adlib green fodder to lactating does or allow free grazing for 6-7 hrs.
2. Provide milk allowance to lactating does @ 400 g/lit. of milk produced.
3. The milk allowance should contain-

Maize - 37 %, Gram - 15 % , Groundnut cake - 25 %, Wheat bran - 20% , Mineral mixture 2 % and salt 1 %.

2. General management

1. Wash the udder with disinfectant solution (KMNO4).
2. Clip the hairs from the hind quarters.

Fig. 4.7 : Modern stall feeding

3. Milk the doe completely till the udder is fully collapsed.
4. Clean the body and groom the animal which enhances blood circulation and helps in eradication of ectoparasites.

5. Keep the lactating does away from buck to avoid goaty smell to the milk.
6. The does may show signs of heat after 30 days but do not breed the goat before 45 days after kidding.
7. House the goats in clean vicinity, free from flies, ticks, fleas etc.

3. Health care

1. Take care of mastitis.
2. Follow deworming and vaccination schedule (Table 4.4 and 4.5 respectively).
3. Screening of goats for brucellosis, tuberculosis and Johnes disease at least once in a year should be carried out.
4. Dipping of goats in ectoparasiticidal solution before and after monsoon for control of ectoparasites.

4.7 Management of breeding buck

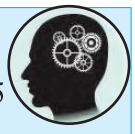
"The breeding buck is half of the flock" and decides the future of the goat farm. Management of breeding buck starts from its selection.

1. Selection of buck

The buck is selected on the basis of following criteria - **ABCDE**

1. **A -Age :** The breeding buck should be above 12 months. Up to 2.5 years, the buck should be allowed to breed to 25 to 30 females and from 3 to 5 years to 40 to 50 females.

Remember...



1. The breeding age of buck is 5 to 7 years.
2. Replace the buck by every two years to avoid inbreeding

2. **B -Body conformation :** Buck should be heaviest animal in flock, having wide chest, strong and straight legs, masculine look and rugged mane i.e. with profuse growth of hairs on neck.
3. **C - Characteristics of true to type breed:** The buck should fulfill all the breed characteristics and there should not be any abnormalities.
4. **D - Defects:** The buck should not have any deformities or defects. e.g. twisted leg, narrow chest and back, over shot or under shot jaws, pendulous scrotum and sheath, cryptorchidism or having poor quality semen etc.

Fig. 4.8 : Breeding buck

5. **E -Efficiency for economic traits :** The buck should be twin born, progeny of the prolific female having good milk yield and mothering ability. The growth rate should be higher than its contemporaries.

Can you think ?

One buck is sufficient to bred 25-30 does

2. Feeding of breeding bucks

The feeding of breeding buck is very important as the energy level needs to be managed in such a way that the buck should not get too fatty and the vigor and vitality must be maintained.

1. Buck requires 7 to 8 kg. green, 1 kg. dry roughages daily.
2. No extra ration than 250 to 300 gm should be provided to buck during non breeding season where good quality pasture is available to avoid fattening.
3. During breeding season grains, oil cakes should be provided @ 450 to 900 g/ head depending on body weights.

4. Bucks should not be over or under fed which affects the health and vigor.
5. Provide enough salt and vitamins (A and E) especially in breeding season
6. Mineral mixture @ 15-30 g be provided du ring breeding season.
7. Sprouted kidney bean @ 50 to 100 g helps to enhance vigor and vitality.
8. *Adlib* clean drinking water should be provided throughout the year.

Remember...

- Well ventilated house with 'A' shape roof with well drained floor is comfortable for goat. The floor space required for goat is 1.5 to 2.0 m^2
- Proper feeding, vaccination and deworming enhance the profitability in goat farming.

3. General management

1. Keep the bucks in separate pens to avoid fighting injuries particularly during breeding season.
2. Breeding buck should not be tethered.
3. Bucks should not be housed with females. Take them to females only during breeding period.
4. Sufficient exercise must be given to avoid fattening and subsequent sluggishness.
5. Regular grooming / brushing help to keep the bucks clean and free from ectoparasites. It also helps to make the buck docile.
6. Hoof trimming helps to avoid lameness.
7. Cleanliness and feeding of plenty greens helps to minimize goat's smell.

4. Health care

1. Follow deworming and vaccination schedule.
2. Screening for brucellosis, tuberculosis and Johne's disease at least once in a year should be carried out
3. Check semen quality regularly
4. Clean the buck regularly.
5. Dipping of bucks in ectoparasiticidal solution before and after monsoon for control of ectoparasites.

Try this...

Visit the nearby goat farm and collect the information on income and expenditure/economics

Exercises

Q.1. Fill in the blanks

1. Goat milk is easy for digestion because .....
2. The very famous goat milk product in France is .....
3. Young male of goat is termed as .....
4. Comfortable goat house is one where internal temperature is .....
5. The feeding system in which goat tied to peg by rope is called as .....
6. The floor space required for adult goat is ..... m^2
7. The DCP content of concentrate mixture for goat .....
8. The lactating goat should be fed with milk allowance @..... g / lit of milk.
9. The meaning of rugged mane is .....
10. The gestation period in goat is _____ days.

Q.2. Match the pairs

Group A	Group B
1. Chevon	a. Female goat
2. Doe	b. Male sheep
3. Spayed	c. Male goat
4. Buck	d. Removal of horn bud
5. Disbudding	e. Meat of goat
	f. Castrated female of goat
	g. Male of goat

Q.3. State True or False

1. Goat milk is acidic in nature
2. Browsing is feeding habit of goat
3. One buck of age 2.5 years is used for mating of 30 does
4. Dipping is used for controlling of endoparasites
5. Breeding buck is half of the flock

Q.4. Answer in brief

1. Give the scientific name of goats
2. Name the most economical goat management system
3. Which term is used for male of goat?
4. What is the term used for goat meat?
5. Why the goat meat is suitable for calorie conscious peoples?
6. What is colostrum?
7. How much covered and open area is required for breeding buck?
8. Name the important diseases in goat
9. What do you mean by deworming?
10. Define milk replacer

Q.5. Answer the following questions

1. Why the goat is called as versatile animal?
2. Enlist different feeding and management systems of goat and elaborate any one.
3. Elaborate the floor space requirement for goats at different stages.
4. Describe different systems of kid rearing
5. Give the importance of goat farming.
6. Write in short care and management of lactating doe.
7. Write a brief note on feeding of pregnant goat.
8. Give the desirable characteristics of buck.
9. Give vaccination schedule for goat
10. Why deworming is essential for goat?