**Management system of Sheep in CVASU**

**sheep farm unit**



**Submitted By**

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**TABLE OF CONTENTS**

|  |
| --- |
| Contents Page No  |

PLAGIARISM CERTIFICATE…………………………………………………… II

LIST OF TABLES…………………………………………………………………. III

LIST OF FIGURES………………………………………………………………... III

ACKNOWLEDGEMENTS ……………………………………………………….. IV

ABSTRACT……………………………………………………………………….. 1

CHAPTER 1 INTRODUCTION……………………………………………………. 2-3

CHAPTER 2 MATERIALS AND METHODS ……………………………………. 4-6

2.1 Location and duration…………………………………………………………… 4

2.2 Study population ………………………………………………………………… 4

2.3 Data……………………………………………………… …………………….. 4

2.4 Management system……………………………………………………………… 4

2.4.1 Housing management………………………………………………………..… 4-5

2.4.2 Feeding management………………………………………………………….. 5-6.

CHAPTER 3 RESULTS AND DISCUSSION……………………………………….. 7-10

3.1 Herd size structure………………………………………………………………… 7

3.2 Housing……………………………………………………………………………. 8

3.2.1 Floor plan……………………………………………………………………….. 8

3.2.3 Wall………………………………………………………………………….… 9

3.3 Feeding…………………………………………………………………………… 9

3.4 Watering………………………………………………………………….............. 10

3.5 Lighting………………………………………………………………………… 10

CHAPTER 4 CONCLUSION………………………………………………………. 11

REFERENCES………………………………………………………………………… 12

# PLAGIARISM CERTIFICATE

I, Kushal Chakma, would like to strongly assure you that I have performed all works furnished here in this report. The information has been collected from different books, national and international journals, websites and references. All the references have been acknowledged duly.

Therefore, I reserve entire responsibility of this report.

…………………….

**The Author**

**December, 2015**

# LIST OF FIGURES

Figure 1a: Exterior view of sheep house…………………………………………………8

Figure 1b: Interior view of sheep house …………………………………………………8

#  LIST OF TABLES

**Table 1: Space requirement for sheep 5**

**Table 2: Ratio of male and female sheep according to their age7**

#

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 The Author

**ABSTRACT**

A study of management system of sheep was carried out at Chittagong Veterinary and Animal Sciences University (CVASU), Chittagong, from 13th March to 15th May 2015. About 17 sheep were considered for the management system of sheep which were reared for the study purpose. These sheep are reared in semi-intensive system. Feed are supplied at one time daily. Housing is gabble type. Better housing as well as drainage system of sheep with proper health care and improved feeding systems are recommended to authority as ways to improve sheep management.

**Key word:** CVASU, Semi-intensive, Gabble type, Sheep

**CHAPTER 1**

**INTRODUCTION**

Domestic sheep (*Ovis aries*) are small ruminant. So, facility design and husbandry must be consistent with the behaviors, nutrient requirements, use, and physiology of sheep. Sheep used in research and teaching may be produced and managed under a variety of environmental conditions, including completely or partially enclosed buildings, drylots, pastures, and remote rangelands. Regardless of the production environment, the management system should be appropriate for the research or teaching objectives and must ensure that the animals are cared for properly. Because of their adaptability and the insulating value of wool and hair, artificial shelter for sheep may not be necessary. Site-specific needs for artificial shelter should take into account the geography, local environment and climate, and anticipated extremes of temperature. For shelter from wind, cold, or sun, sheep typically seek shelter near terrain and structures, such as trees, shrubs, swales, boulders, ridges, and artificial windbreaks. Wind-chill effects can be predicted for small ruminants **(Ames and Insley, 1975).** Shelter for sheep to provide warmth, shade, and protection from wind and precipitation is important. When barns or sheds are provided, adequate ventilation and clean, dry surroundings are necessary to improve air quality, reduce the incidence of disease, and increase animal comfort. Poor ventilation can reduce the performance of dairy sheep, **(*Sheep Production Handbook* (ASIA, 2002), *Small Ruminant***

***Production Medicine and Management: Sheep and Goats* (Faerber, 2004).** In range, pasture, or outdoor drylot conditions, harvested feed resources, desirable forage, and prevailing weather conditions are key determinants of area requirements. The space required per animal depends on the intent of the research and teaching, type and slope of floor or ground surface, weather conditions and exposure, and group size. Within intensive productionfacilities, ventilation and structural design should prevent moisture condensation during cold weather, provide cooling during hot weather, and ensure that airquality standards are met. Newborn lambs and kids and recently shorn sheepare susceptible to hypothermia, hyperthermia, and sunburn .Frequency of

neonatal observations should be increased, and appropriate shelter should be provided if natural conditions do not offer sufficient protection .

Sheep should be offered a balanced ration that meets the nutrient requirements outlined by the National Research Council's Nutrient Requirements for Sheep (1981). These nutrients include energy, protein, fiber, vitamins, and minerals. Diets should be formulated to meet the metabolic demands such as growth, pregnancy, fiber production, or lactation. Feeding and watering equipment should be constructed and located so it is easily accessible by the animals, provides a safe environment, and the contamination of feed with excreta is minimal. Troughs, racks, and pails should be cleaned thoroughly when dirty. Fresh, clean water should be provided at all times to all classes of sheep. Water is an essential nutrient for metabolic activities such as digestion, nutrient transport, electrolyte balance, joint lubrication, body temperature control, rumen development and function, and waste excretion. Water should be free of particulate matter, pesticide residues and other toxic substances, and should have a low salt and bacterial content. This is especially important in hot summer months and promotes both water and feed intake. Minerals are essential nutrients in all diets. If trace minerals are not a component of the grain mix, low-salt mineral blocks should be provided to prevent deficiencies. **(NRC, 2007).**

**Aim of work:**

The study aimed-

* to know sheep feeding and management practices in sheep farming.
* identification of health status of animals through close observation.

**CHAPTER 2**

**MATERIALS AND METHODS**

**2.1 Location and duration of the study**

The study was conducted in sheep registered at Chittagong Veterinary & Animal Sciences University (CVASU) from13 March, 2015 to 15 May, 2015.

**2.2 Study population**

The study was conducted on management of sheep of various age, sex that were kept to the Chittagong Veterinary & Animal Sciences University (CVASU) sheep farm. During the study period about 17 sheep were considered for the study purpose.

**2.3 Data:**

All data were entered into Microsoft Excel 2007 and Data management was done.

**2.4 Management system-**

**2.4.1 Housing management:**

To maintain good health and comfort of the animal, housing system is most important. Housing should be designed to ensure comfort for the animals, to make food and water readily accessible and to permit easy and effective sanitation. The adult facilities should reflect the purpose of the project. However, such rooms need to be well insulated, well ventilated and free from draughts, and must provide protection from rodents, predators and thief.

The type of housing varies with the production system, the objective of raising sheep tradition.

Despite variation in types, the common purposes of housing are to:

• Protect animals from climatic stress (extreme heat, cold, rain, wind, etc.), thus creating an environment suitable for the animals’ physiological state;

• Provide protection against losses by predators and theft; and

• Make management easier and save labor.

**Floor plan:**

The space requirement of the animals to be housed influences the design of the floor. Table 1 presents the suggested requirements for different classes of sheep. Space requirements vary depending on whether animals are kept in individual or group pens. The space requirement also varies with the size of animals, i.e., bigger animals require larger space than smaller ones.

**Table 1:** Space requirement for sheep

|  |  |
| --- | --- |
| Types of housing | Space(m2/animal) |
| Matured male  | Matured female | Young stock |
| Permanent confinement  | 1.2 | 2 | 0.8 |
| Night housing | 0.8 | 1.5 | 0.5 |

Floor design is particularly important in wet climates, where dung and urine on a damp floor make ideal conditions for the multiplication of disease-causing organisms. In particular, kids and lambs are very susceptible to pneumonia and it is wise to avoid damp and poorly ventilated houses.

**2.4.2 Feeding management:**

Sheep should be fed according to established nutrient requirements to provide for proper growth of young animals and long-term maintenance of body weight (**BW**), body condition, which can be assessed as body condition score **(BCS; Thompson and Meyer, 1994), and reproduction of adults (NRC, 2007).** Body weight and condition of sheep and goats may vary considerably during different parts of the grazing and reproductive cycles **(Engle, 1994; Taylor et al., 2009).** Feeding programs should make it possible for animals to regain BW after the normal periods of BW loss. However, excessive feeding beyond what is needed to achieve defined production goals can result in nutrient wasting and metabolic disorders. Nutrient (i.e., protein, energy, fatty acid, mineral, vitamin, and water) requirements for sheep and goats and factors (e.g., feedstuffs, environmental, physiological, behavioral, and diseases) affecting nutrient availability and intake are addressed in ***Nutrient Requirements of Small Ruminants: Sheep,* *goats, cervids, and New World camelids* (NRC, 2007)**.Furthermore, comprehensive descriptions and solutions for assessing and managing feed and metabolic-related diseases in sheep are discussed in the ***Sheep Production* *Handbook* (ASIA, 2002).**

A variety of feedstuffs may be fed to sheep, but changes in relative amounts of forage and concentrates in diets should be made gradually.

Feed can be supplied to sheep in suitable mixture according to Balwant Rajput college

1. Barely, Dal or Maize – 46 parts
2. Sorghum grain -34 parts
3. Oilcake – 20 parts

Any good concentrate mixture containing 16-18 percent crude protein can also be supplied.

Feeding equipment should be constructed and located to be available for ready access, provide sufficient feeder space, prevent injury to animals, and minimize contamination of feed with excreta. Providing sufficient feeder space is important for sheep and goats when feeding limited amounts of feedstuffs

that are ingested quickly (e.g., supplements and concentrates) so that all animals have access to feed. If feeder space is limited so that all animals cannot eat at the same time, sufficient potentially fermentable neutral detergent fiber should be included in concentrate diets to provide substrate for rumen fermentation and to prevent metabolic disturbances **(Thonney and Hogue, 2007).**

In research and teaching settings, sheep are sometimes used as biological control agents for managing invasive plant species. In such cases, animals may graze plant communities with limited plant diversity, be required to remove the majority of standing biomass, or graze plants that are potentially toxic or have large amounts of antiproductive secondary metabolites. Because sheep have susceptibility to plant secondary metabolites, grazing animals should be monitored regularly once grazing commences to ensure adequate forage availability and to identify potential or manifested nutrient deficiencies and plant-related toxicities. Any animals showing signs of nutrient deficiencies or toxicosis should be removed and treated accordingly.

**CHAPTER 3**

**RESULTS AND DISCUSSION**

**3.1 Herd Size Structure:**

There were about 17 sheep which were considered for the management system of sheep. Most of the sheep were younger. Male and female were almost equal in number.

**Table 2:**

Ratio of male and female sheep according to their age:

|  |  |  |  |
| --- | --- | --- | --- |
| **Age** | **Male** | **Female** | **Total** |
| 0-8 months | 04 | 02 | 06 |
| 8-14 months | 03 | 06 | 09 |
| >14 months | 01 | 01 | 02 |
| Total | **08** | **09** | **17** |

Table 2 shows that, younger male is larger number than in younger female (0-8 months). In mature case the number of female is greater than mature male (8-14 months).The older male and female are almost equal in number.

**Fig**: Ratio of male and female sheep according to their age

**3.2 Housing:**

The house was made of a roof and partial walls to complex structures fitted with feeders and waterers. Roof was made of color plastic tin. Animals kept in an area within the family home. There were four compartment within the house to keep animal separately (Fig:1b). House for sheep with a raised wooden floor 30 cm above the ground is observed in CVASU sheep farm. The animal shed should be located outside the homestead but it was within buildings. So, proper ventilation was not provided well.

 

Fig 1b: Interior view of sheep house

Fig 1a: Exterior view of sheep house

**3.2.1 Floor plan:**

The floor of CVASU sheep house was made of wood. The spaces between slats needed to be big enough to allow manure to drop easily, but small enough to prevent feet from passing through. A spacing of 1.5 cm is optimal for adult sheep (slightly narrower for goats). For young lambs, 1.3 cm is enough. In some cases, mobile wooden slats are placed on floors providing the advantage of easy cleaning. It is important to control temperature of the floor and avoid muddiness. In such cases, bedding materials may be used. Straw or wood shavings or any material that can absorb moisture can be used for this purpose. With all floors, ease of manure removal and disposal should be given attention.

**3.2.2 Roof:**

The roof is important as it protects animals against the sun and rain. The under-surface of the roof should remain cool and watertight. To ensure adequate ventilation, the height of the roof and the design should be considered. A high roof encourages air movement but is more likely to be damaged by strong winds. Roof of CVASU sheep farm was made with color tin. It protects animals from the sun and rain as well as it gives light too.

**3.2.3 Wall:**

Wall was partially open to allow movement of air through the wall. It was made of metallic wire. Ventilation is important to remove heat, moisture and pollutants so that animals stay cool, dry and clean. Outer walls protect the animals from external influences while separation walls within the house prevent mixing among the animals. Attention needs to be given to construction of pens within the house. Pens serve as a means of controlling animals and for management purposes, such as controlling breeding. Areas for lambing/kidding and isolation of sick animals should be included. It is always wise to keep in mind the possibility of expansion when building houses for sheep. An appropriate flock development plan has to be made to anticipate future construction needs.

**3.3 Feeding:**

Since sheep are raised in semi-intensive system so animal are freely grazed at day time. They can eat freely by this time. Mainly they are grazed at open field where they can eat grass, kitchen waste product, road side waste and so on.

At night they stayed at house. At that time they are supplied germane grass, Para grass, maize, rice polish, DCP, salt, protein concentrate and so on.

Nutrient value of supplied feed :

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Amount(Kg)** | **ME (Kcal/kg)** | **CP%** | **CF%** | **Ca (%)** | **P (%)** |
| Maize | 22 | 1737.1 | 4.7748 | 1.2456 | 0.03633 | 0.2076 |
| Rice polish | 12 | 14685 | 0.595 | 0.62 | 0.0175 | 0.06 |
| Khesari | 31 | 3450 | 0.28 | 0.09 | 0.0095 | 0 |
| Lentils | 30 | 6760 | 4.7 | 0.21 | 0.007 | 1.3 |
| Protein Concentrate | 4 | 3000 | 3 | 3 | 0.325 | 0.125 |
| DCP | 0.5 |  |  |  | 0.1215 | 0.091 |
| Salt | 0.5 |  |  |  |  |  |
| **Total** | **100** | **29632.1** | **13.34** | **5.1656** | **0.51683** | **1.7836** |

**3.4 Watering:**

Water requirements of sheep are based on, but not limited to, physiological state, dry matter intake, climatic conditions, and environment.. Careful consideration of water source, location, and quality will enable caretakers to effectively assess and meet the water needs of sheep and goats in research and teaching settings.

In CVASU sheep farm water is supplied sufficiently and it is safe for drink. Water is supplied from deep tube-well.

**3.5 Lighting:**

Sheep confined in a barn should experience diurnal cycles of light and dark, unless research protocols require alternative lighting regimens. Photoperiod and light intensity should be adequate for inspection, maintenance of activity patterns, and physiological control of reproductive functions in breeding animals **(Ortavant, 1977).**

Two light of 60W is attached to CVASU sheep barn and it is enough to fulfill the purpose of light.

**Limitation:**

* Drainage system was not good due to the construction work.
* The farm was not so clean as it required.
* BCS condition of animals was so poor.
* Ventilation system was so poor.

**CHAPTER 4**

**CONCLUSION**

Management system of sheep in CVASU sheep farm unit was moderate. It can be improved for getting better health of sheep. Drainage condition of the farm should be improved to reduce the causes for many diseases of sheep. Though the farm is used for teaching purpose, the farm should keep in neat and clean. However, it can be a model of sheep farming if good management is practiced. Proper steps should be taken to improve management system of sheep as well as to improve health condition of sheep.

**REFERENCES**

A textbook of animal husbandry by G.C. Banerjee. Page 980-1014

Ames, D. R., and L. W. Insley. 1975. Wind-chill effect for cattle and sheep. J. Anim. Sci. 40:161–165.

ASIA (American Sheep Industry Association). 2002. Sheep Production Handbook. ASIA, Centennial, CO.

AVMA (American Veterinary Medical Association). 2007. AVMA Guidelines on Euthanasia. <http://www.avma.org/issues/animal_> welfare/euthanasia.pdf. Accessed Jan. 13, 2008.

Engle, C. 1994. Body Condition Scoring of Sheep. DAS94–09/ PENpages 2890176. The Pennsylvania State Univ., University Park.

NRC. 1981. Effect of Environment on Nutrient Requirements of Domestic Animals. Natl. Acad. Press, Washington, DC.

NRC. 2007. Nutrient Requirements of Small Ruminants: Sheep, goats, cervids, and New World camelids. Natl. Acad. Press, Washington, DC.

Thompson, J., and H. Meyer. 1994. Body condition scoring of sheep. Oregon State University Extension Service Publication EC 1433 <http://extension.oregonstate.edu/> catalog/html/ ec/ec1433/ Accessed Nov. 13, 2008.

Thonney, M. L., and D. E. Hogue. 2007. Formulation of ruminant diets using potentially-fermentable NDF and nonstructural carbohydrates. Pages 113–123 in Proceedings of the Cornell Nutrition Conference, Ithaca, NY.

Ortavant, R. 1977. Photoperiodic regulation of reproduction in the sheep. Pages 58–71 in Proc. Symp. Management of Reproduction in Sheep and Goats. Univ. Wisconsin, Madison.