

## Recent Advances in The Raised Slatted Floor Goat Rearing

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### Introduction

Livestock production is steadily gaining importance in India and it is considered to be an integral part of rural economy. Livestock farming provides regular income to the landless poor farmers such who cannot keep one or two dairy animals, can maintain small ruminants like sheep and goat form their livelihood.

Goat is known as the 'poor man's cow' in India. According to the 20th Livestock Census conducted by the Government of India in 2019, the goat population in India was 148.88 million. This represents an increase of 10.1% compared to the previous census conducted in 2012, when the goat population was 135.17 million. The demand for meat and meat products increasing each year. Among the meat products goat meat is popular, costlier and fetches good return for the farmer. India ranks first in the world in goat population. The economic value of goats can also be realized from the continuously increasing trend in their population during last 40 years, in spite of more than 1/3'd population being slaughtered for meat and skin every year. Consumption of goat meat is increasing rapidly due to its social acceptability. This sector has tremendous potential in employment generation & poverty reduction.

Raised slatted floor system is a type of goat housing system that has been gaining popularity in recent years. This system involves keeping the goats in a raised platform with slats or gaps between

them to allow the urine and feces to fall through. The floor is typically made of concrete, plastic, or other materials.

### **Production Systems**

Goats can be kept in extensive, semi-intensive or intensive production systems depending on the availability of land.

#### **Extensive Production System**

Under this system goats are allowed to browse (free range) freely. The goats should be provided with housing (night sheds).

#### **Semi-Intensive System**

This system combines the intensive and extensive systems. Goats are allowed to browse but are also stall fed to complement browsing. In addition, the goats should be supplemented with concentrates and mineral salts. Considering the constraints on free range system, semi-intensive rearing with partial feeding may be practiced to sustain goat rearing as a viable subsidiary occupation. The weight gain was marginally higher in free range system as compared to stall feeding

#### **Intensive System**

This system is suited for areas where browsing fields are limited. It's suited for a small size of flock and where land is limited. It involves confinement of the goats. The goats are stall-fed (zero-grazed) exclusively and mating is controlled. Goats shed should be constructed on the leeward side of the residential house to avoid smell.

#### **Slatted raised floor.**

Goat houses should be able to protect goats from adverse weather like hot sun, heavy rains and chilling cold. In heavy rain areas and also in tropical areas nowadays goats are always preferred to be housed at raised platform. This helps for proper drainage and to maintain dry flooring. Goat houses with raised slatted floor are best and suitable in hot, semi-arid and humid climatic areas and perforated floors for small goat units.

Floor set with wood and reinforced concrete bars provide a required gap between them and are used in house for intensive animal production. It has the great advantage of controlling disease by breaking the contact between animals and excreta. The excreta, both liquid and solid passes downward from the wooden floor immediately after it is voided through the gap provided. The excreta collected underneath the floor are suitably disposed by mechanical means. The slatted, floor



is ideal for raising animals in germ free condition. The distance between two planks (slat) is known as slot and it should be 1 to 1.5 cm. The plank width 7.5 to 10cm and thickness 2.5 to 4cm. Slatted floors should be raised about 1-1.5 meters above ground level to facilitate easy cleaning and collecting of dung and urine. The gap between the slats should be 1.4 to 1.6 cm to allow easy passage of fecal material and guarantee safe footing for the animals. Newborn and young lambs should not be put on slatted floors. A piece of wood temporarily placed on the slats will prevent leg injury to very young lambs and kids. A raised, slatted floor in tropical and subtropical areas has the following advantages:

- Allows manure, urine and debris to drop through the slatted floor, thus removing a major source of disease and parasite infestation

- No need of bedding
- Requires less labor to clean and maintain
- Remains relatively dry and clean
- Reduced space requirements
- Manure is easily collected for fertilizer use or for sale
- Allows air to pass through the slats increasing ventilation and comfort in hot weather.

The main disadvantage of raised, slatted floors is the high expense of construction. Some materials, such as bamboo, may be cheaper than wood but may provide less secure footing. For all but the smallest barns, commercial wood is preferred to bamboo as it stronger and more long-lasting. Cost, ease of installation and safety must all be considered when selecting flooring material for a slatted floor.

### **Recent advances in the raised slatted floor system of goat rearing include**

1. Improved slat design: Manufacturers are continuously designing slats that provide better traction, comfort, and support for goats. Some slats are designed to reduce stress on the legs and joints of the goats.
2. Use of non-slippery materials: Non-slippery materials like rubber or textured plastic are being used to make the slats, reducing the risk of slipping and falling for the goats.
3. Better drainage: Raised slatted floors now come with better drainage systems that facilitate the easy flow of urine and feces out of the housing area.



4. Easier cleaning: Raised slatted floors are designed to be easily cleaned, making it easier to maintain good hygiene and reduce the risk of disease outbreaks.
5. One recent advancement is the use of automated manure removal systems in raised slatted floor systems. These systems use conveyors or scraper systems to remove manure from the goat house automatically, reducing the amount of manual labor required for cleaning. This not only saves time and effort for the goat owner but also helps to maintain a cleaner and healthier environment for the goats. Bhattarai et al. (2020) evaluated the effectiveness of an automated manure removal system in a raised slatted floor goat house and found that the system was highly effective in removing manure and reducing ammonia levels in the air, resulting in improved air quality for the goats.
6. One significant advancement in raised slatted floor systems for goat rearing is the use of plastic slats instead of traditional concrete or wooden slats. Plastic slats are lightweight, easy to clean, and resistant to corrosion and decay, making them ideal for use in goat houses. They are also non-slip, which helps to reduce the risk of injury to the goats.



**A raised slatted floor system of goat rearing- wood flooring**



**A raised slatted floor system of goat rearing- plastic flooring**

#### **Use of plastic slatted floors:**

Ayoade et al. (2020) reported that the performance of goats housed on plastic slatted floors and found that the use of these floors improved growth rates and feed conversion efficiency compared to goats housed on concrete floors and noted that plastic slatted floors were easier to clean and maintain than concrete floors Yildiz et al. (2021) evaluated the effect of different slatted floor types



on ammonia concentrations and microbial counts in a goat house and found that plastic slatted floors were more effective than concrete floors in reducing ammonia levels and microbial counts

In addition to these advancements, there has also been a growing interest in using raised slatted floor systems for outdoor goat rearing. These systems allow goats to graze and roam freely while still providing them with a clean and safe environment. Some raised slatted floor systems for outdoor use are also designed to be portable, making them ideal for small-scale goat farmers or those with limited land. . Ogunjimi et al. (2020) presents a design for a portable raised slatted floor system for outdoor goat rearing and found that this design was effective in providing a clean and safe environment for goats, while also allowing them to graze and roam freely.

### **Conclusion**

Overall, the use of raised slatted floor systems in goat rearing continues to evolve and improve, offering numerous benefits to both goats and their owners. As technology continues to advance, we can expect to see even more innovations in this area in the years to come.

