



## A Study on Management Practices Followed by Organized Stud Farms in Karnataka

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### Abstract

A study was conducted on the different management practices followed by organized stud farms in Karnataka. Information was collected by interview method using a structured schedule. The establishments of stud farms ranged from 18 to 19 centuries. The mean stock holding was  $97.2 \pm 21$ , with about  $30 \pm 8.75\%$ ,  $41.6 \pm 10.81\%$  and  $22.4 \pm 7.0\%$  owning stallions, mares and geldings, respectively. Most of the stables were of close type (100%) and located at an adjacent distance from the residence (100%). Concrete flooring was common (80%) and only 50% of the respondents are using straw 40% wood shavings as a bedding material. Mean stable dimensions were  $162 \pm 60$  sq. ft. 50% of respondents were cleaning Stables every day. Stone feed mangers and feed buckets were commonly used. Majority respondents practiced individual feeding (100%), with oats as the primary fodder, and concentrates fed thrice a day (52.6%). Vitamins, minerals, salts and electrolytes were given as feed supplements by all the respondents, and anti-stressors, amino acids and growth promoters were commonly used. Colostrum was fed to foals within 30 minutes of birth and concentrate feeding was introduced at 3 months of age. Natural mating (60%) with a breeding ratio of 1:5 and conception rate of 72.37%, and artificial insemination (40%) with a conception rate of 70.0%, were commonly practiced. The most common indicators of oestrus were valval discharge (50%) and swelling (10%). Most of the respondents preferred sandy surface for training their horses. Regular vaccination was practised for tetanus only. Most respondents regularly practised deworming and dental check-ups. Diarrhoea (100%), colic (100%), laminitis (90%) and endometritis (50%) were commonly recorded conditions. (70%) respondents reported transporting the horses once a month for clinical purposes.

**Keywords:** Stud Farms; Management Practices; Karnataka

### Introduction

In India the population of horses is quite less as compared to other livestock. As per the Livestock Census (2012), equine population of India comprises of 0.625 million horses, 5.6 million ponies and 0.8 million ass.

The term horse is derived from the Anglo-Saxon word *hors* which denotes swiftness. The horse, also referred to as man's second friend, was domesticated by man as early as pre-historic times.

In any stud farms, stallions are the focal point of equine breeding programs. These are selected based on their pedigree, individ-

ual performance, conformation characteristics, or a combination of these. At a breeders level Individual stallions can be extremely popular due to individual or offspring’s performance which can result an over average influence on development of a certain breed characters. The number of mares bred per season and the breeding fee of some stallions may therefore be extraordinarily high. In general, individual stallions can have high monetary value. Further the general changes in the husbandry of young stallions and at their transfer into the future career may help to produce stallions with better social skills and facilitate accommodation under improved welfare conditions [9].

Horses have great utility as man’s source of food, military purposes, re-creation and sports events, agricultural and commercial pursuits, pulling the load and particularly human transport in the cities. Their utility is mainly dependent upon the locomotion. In cities and urban areas they are used for transportation and are source of livelihood of huge number of people. The horses are also used in racing events [5].

In an experiment [4] observed that horse-breeding has been adopted as the major source of livelihood by the tribal communities in certain pockets of cold desert (Lahaul-Spiti and Kinnaur districts) since times immemorial.

In a study, it was reported that horses are used for transportation of goods people, agricultural and forestry works, especially in mountainous areas, where motorized vehicles have limited access.

It was reported that the housing environment will facilitates normal behaviour, avoids stress and lets animals survive to a long age with high stable performance [2].

**Materials and Methods**

**Description of study area**

Study was conducted in and around Bengaluru, Karnataka. Twenty organize stud farms are the study population. More than 115 horse keeper are interweaved in their residence.

**Target Population**

The target population for this study was thoroughbred horses using for race in India it includes horses and their owners.

**Questionnaire design**

The consists of 81 questions 52 were close ened questions which consists of multiple choice, yes or no options, and 9 were

open ended questions (size of farm, number of horses on the farm, frequency of worming and stocking density). The Questionnaire was divided into seven sections that included, General management practices, housing practices, breeding practices, feeding practices, exercise practices and health management practices.

**Statistical analysis**

The data from the 115 horses examined and horse owners surveyed was incorporated into Excel sheets. Means, standard deviation and percentages were calculated using GraphPad Prism 7.1 and Microsoft Office Excel® 2008 for Windows XP descriptive statistics function.

The interactions were examined using Chi-Square and Fisher’s test. For significant differences between unbalanced groups, one way ANOVA and Mann-Whitney test were applied. For correlations Pearson’s correlation was used. The significance level was set to P < 0.05. Analyses were performed with Minitab 14® 2006.



**Figure 1:** Horse Stall.



**Figure 2:** Feeding of horse.

## Results and Discussion

The survey was carried out with 115 horse owners in organized stud farms.

### Socio economic status of owners

All the respondents belonging to the high-class family, not purely depends upon their horses. All the respondent are maintaining horses for racing purpose and for recreation to their family members. The literacy level was more than 95% in majority of the respondents, and 80% of the respondents are having more than 200 acers of land.

All the respondents are economically very sound an they hired labours to taking care for horses.

### Housing system

All the stables are close type (100%) and located at an adjacent distance from owner's house, which is in contrary to [11] where open type of housing system was practiced which was separate (84%), Whereas other experiment it was [11] reported that 68 per cent of the horses were kept where their owners resided and 32 per cent were kept away from the owner's home.90 per cent of the respondents owned more than 270 horses.

They used (100%) for the racing, The frequency of usage was 2.1 hours per day. It was [12] observed that 57 per cent of the horses were kept in individual single storey loose boxes (usually attached to each other in some linear configuration and often sharing air space) and 36 per cent were housed in American-style horse barns.

Survey indicated that common type of housing system followed which provided separate barn for animals which was separated from owner house. 84% of the respondents used separate barn and 16% housed the animals in same place where their family resides. Frequency of cleaning: 50% of owners cleaned every day, 40% cleaned once in a week and 10% were not at all cleaning but removing only dirt from the stable.

### Feeding practices

100% of respondents followed the individual feeding system, no group feeding were followed. 30% primarily fed horses with cereals, 90% with legumes and rest 10% were using other fodder for their horses.

Most of the horses were fed with concentrate feed thrice a day for their good health and production, depending on their age. Young horses, stallions and mares were fed concentrate  $1.8 \pm 0.8$ ,  $4.56 \pm 0.24$  and  $3.89 \pm 0.2$  times per day, respectively. All the respondents were having their own facility to store the feed and forages.

Concentrate feeding, also referred to as *hard feed*, was practiced by all the respondents as reported by previous workers [3].

Feed supplements given included vitamins and minerals (90%), salt and electrolytes (40%), anti-stressors (60%), amino acids and growth promoters (50%) and 10% were giving anti-laminitis drugs to their horses. Foals were fed colostrum  $0.6 \pm 0.6$  hours after the birth with range of 25-60 minutes.

### Water source

Major source of water in the study area ranked pipe water, bore well water, about 70%, 20%, respectively. 90% of the owners watered the animals twice a day, 4% provided once a day and 6% thrice a day.

### Breeding management

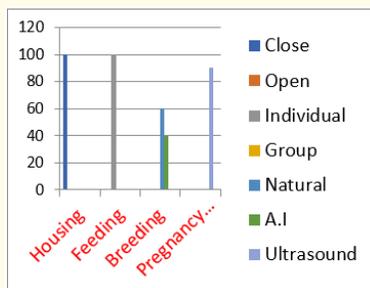
60% of the respondents practiced natural breeding while 40% practiced artificial insemination. Most of the stud farm owners preferred breeding ratio of one stallion to ten mares. Singh., *et al.* (2009) where conception rates were found to be 70 and 30%, respectively.

In most cases covering was carried out in an open area. The common indicator to detect the estrus was visual discharge (50%) followed by swelling of vulva (10%) and using teaser (30%). Selection of breeding stallion or mare was on the basis of both physical appearance (40%) and pedigree record (60%).

50% of the respondents reported the need of two services for conception. Conception rate with natural service and artificial insemination were found to be 70% and 40%, respectively. Majority of the respondents (80%) were using ultrasound for detection of pregnancy and 10% were confirming the pregnancy by observing non-return of oestrus signs. 10% of the stud farms reported the repeat breeding cases in the study groups.

Sl. No.	Parameters	Percent Followed (%)
1	Housing	
	Open	100
2	Location	
	Adjacent	100
3	Feeding system	
	Individual	100
4	Feed used	
	Cereals	30
	Legumes	90
	Others	10
5	Breeding type	
	Natural	60
6	Detection of pregnancy	
	Ultrasound	80
	Other method	20

**Table 1:** Management Practise.



**Figure 3:** Management Practise.

**Exercise practices**

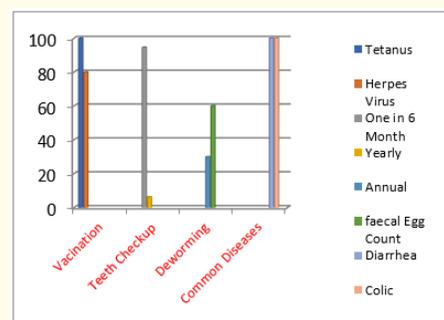
40% of the horses were used for professional sports and 30% were used for schooling and other 30% for competition purpose. Horses were not for riding because non-availability of rider (30%) and 30% they have not entered in riding. 60% of the respondents trained their horses on the grass lawn while 40% of the horse’s owner used sand for training their horses.

Sl. No.	Parameter	Percent Followed (%)
1	Vaccination	
	Tetanus	100
	Equine Herpes Virus	80
2	Teeth Checkup	
	Once in six month	94.7
3	Deworming (As Per)	
	Annual schedule	30
4	Common Diseases	
	Faecal Egg count	60
	Colic	100
	Diarrhea	100
	Laminitis	90

**Table 2:** Health care Practices.

Training of horses was done on the grass lawn (60%) and sand (40%). Grass lawn was preferred as they could be managed well with hoof problems noted in sand training. Sand also causes damage to mucosal surface of upper respiratory tract. These findings are in accordance with those of [7].

Majority of the respondents (70%) were encouraging their horses by making them walk and exercise. 40% of the respondents were using the off road track including grasses for hacking their horses.



**Figure 4:** Health care Practices.

**Health care practices**

Diseases not recognised appropriately. Colic with worm infestation was common. Many owners were not able to distinguish preventive and curative health care.

All the respondents vaccinated their horses against tetanus regularly while 80% of the respondents vaccinated with equine herpes virus. (94.7%) horse owners got their animals' teeth checked every 6 months. Most respondents dewormed their horses as per annual schedule (30%), whereas almost 60% dewormed on faecal egg count results. All the respondents reported that their mares have had reproductive problems with endometritis being more common (50%) than retained placenta (30%).

Almost all respondents reported previous instances of laminitis (100%), which was diagnosed either by veterinarians (90%) or barefoot trimmers (10%). All of them reported complete recovery from the last episode of laminitis. Causes of laminitis included soft tissue injury (10%), arthritis (70%), bruised sole (10%), foot abscess (30%) were observed during the study. All the respondents reported that some of their horses were currently being confined to the stable with no exercise, with the major reasons of box rest being lameness (90%) and suspected laminitis (10%).

The commonly reported disease conditions were diarrhoea, colic in all the farms and no other diseases were encountered in the study population. A review of the horse health records showed that penicillin was commonly used to treat laminitis and soft tissue injury, whereas trimethoprim and OTC were used to treat diarrhoea.

Diarrhea and colic was found to occur in all the farms studied, which are major risk factors in the equine industry, especially as colic is fatal [1].

## Conclusion

Transportation and racing by means of Equines plays a vital role in urban parts of country but developmental programmes and research works have ignored equines.

- Horses are mainly housed individually on concrete floor which showed good health and least parasitic infestation.
- Feeding the combination of green grasses, oats and commercially available concentrate feed has given good performance along with this vitamins, minerals, salt and anti-laminitis are given as a feed supplements.
- The natural mating has shown better conception than artificial insemination.

- Commonly occurring diseases like colic, endometritis and diarrhoea however with good management practices the occurrence can be reduced.
- Good exercise on paddock has reduced hoof problems with sand.
- Animals are transported for professional competition and for veterinary treatment.

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