

## CAPTIVE ELEPHANT MANAGEMENT IN SOUTH INDIAN STATE KERALA

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South Indian state Kerala has about 700 captive elephants which form an integral part of the rich cultural heritage. They occupy an unavoidable role in most of the temple festivals. The elephants are also used in timber mills and safaris. The elephant management practices varies from place to place, hence this study was intended to document the routine management in terms of frequency and duration of bath, wash, rest, watering, type of housing provided, restrain during musth, non-musth, travel etc. The history of diseases and vaccination was also recorded during the study. The results which showed significant differences between various management practices under different ownerships are discussed in the article.

**Key words:** Elephant, management, restraint, feeding, housing

Elephants form an integral part of the rich cultural heritage of Kerala occupying an unavoidable role in most of the temple festivals. Over and above their use in festivals these animals are used for draught purpose like in timber mills, pulling heavy objects, elephant safaris etc (Joseph et al., 2012). From the records of the Elephant Welfare Association and Kerala Forest Department, it is known that Kerala has approximately 700 captive elephants, out of which great majorities are tuskers. These elephants are owned by the Kerala Forest Department, temple trust or by individuals. The number of elephants owned by a single individual varies from one to more than a dozen.

It is known that the management practices vary considerably from place to place. Hence this study was intended to document a) The routine management in

terms of frequency and duration of bath, wash, rest, watering, type of housing provided, restrain during musth, non-musth, travel etc. b) history of diseases and vaccination.

### MATERIALS AND METHODS

Several units consisting of one or more elephants owned by individuals, temple trusts and the state forest department were identified and purposively selected from nine districts of Kerala viz. Kollam, Pathanamthitta, Kottayam, Alappuzha, Ernakulam, Thrissur, Palakkad, Malappuram and Wayanad. Data on more than 75 discrete groups of elephants consisting of more than 250 elephants were collected. The sample was then divided on the basis of type of ownership into five different groups similar to what Krishnamurthy (1998) had done -

- Individual owner with one elephant
- Individual owner with more than one elephant
- Temple trust with one elephant
- Temple trust with more than one elephant
- The elephants belonging to the forest department

The data was collected using survey method, where the information was collected from the owner, the mahout, and also by physical verification of the claims in most of the cases. The credibility of the information so collected was checked using triangulation method. The interview was conducted at various locations like the rest room of mahouts during festival seasons, the site where the animal was tethered in case of some animals which were in musth, in the houses and offices of the owners, etc. The

information so obtained was analyzed statistically.

The following information were collected during the study -

- Type of Ownership- ownership status, number of elephants, details about the animal, age, height
- General Management Steps- frequency of bath, duration of each bath, frequency of washing in summer, frequency of washing in rainy season, frequency of watering, duration of rest/sleep, feeding, restraint
- Type of housing provided
- Vaccination if any
- History of diseases

## RESULTS AND DISCUSSION

Table .1. Age and height of elephants across various ownerships

	Group 1	Group 2	Group 3	Group 4	Group 5
Average age (years)	25.2	32.7	35.4	32.6	29.9
Average height (cm)	262.8	278.7	283.9	271.4	245

The range of height of the surveyed elephants was 167.6 to 312 centimeters respectively. The average height of elephants of different groups varied from 245 centimeters, in the case of elephants of forest department, to 283.9 centimeters in the case of elephants owned by temple trusts with one elephant (Table 1). This agreed with the findings of Anilkumar (2002) who reported that the height of adult Indian elephants ranged between 2.5 meters and 3.5 meters. The statistical analysis of the data on height of the elephants proved that the average height of the animals of forest department was significantly lower than the average height of the animals of private owners with more than one elephant and temple trusts with one elephant ( $p < 0.05$ ). Obviously the comparatively lesser average height of the elephants of forest department is due to the large number of young elephants in this group. The data also reveals that the majority of the elephants in all the groups were between 280-300 cm in height. Studies of Ashraf and Manikar (2003) reported that height of the majority of

### Details about the animal

#### *Age and height of elephants*

It was observed that a large percentage of the surveyed elephants of private owners with more than one elephant and temple trusts with one elephant (91.0% and 88.9% respectively) were between 25-45 years of age. The statistical analysis of the data on age of the elephants in various groups revealed that the average age of elephants of private owners with one elephant was significantly lesser ( $< 0.05$ ) than that of private owners with more than one elephant and temple trusts with one elephant (Table 1). The differences between all the other groups were statistically insignificant. The study revealed that elephant owners with single elephant preferred young animals.

elephants that attended the Sonpur Mela-2003 in Bihar were between 7 to 9 feet (213 to 274 cm). Moreover a plausible explanation for keeping taller elephants may be that the elephants of private owners and temple trusts are due to the aesthetic preference for such elephants occasionally meant to carry the deity during temple festivals.

#### **General management steps**

##### *Frequency and duration of bath*

The elephants of the forest department are given an average of 5.89 baths in a week compared to group-3, which was given only 4.8 baths in a week. The statistical analysis of this data showed that this difference was not statistically significant ( $p > 0.05$ ). It can further be seen that the average time taken for bath in case of the first four groups were almost 3.7 hours; compared to 1.4 hours in case of elephants belonging to the forest department. The statistical analysis of the data showed that the difference between the first four groups had no statistical significance. It also said that the average duration of bath in the case of elephants of

forest department was significantly lower ( $p < 0.05$ ) than the average duration of bath of all the other groups.

#### ***Frequency of wetting***

Again the average frequency of wetting in all the groups was more in summer than in winter. Besides, the statistical analysis of the data revealed that the frequency of wetting in summer was significantly higher ( $p < 0.05$ ) than the frequency of wetting in winter in all the groups except group-5. Nevertheless the elephants belonging to the forest department are restrained in a comparatively shady and cooler environment being a forest ecosystem. This could be a valid justification for the comparatively and significantly lesser ( $p < 0.05$ ) duration of bathing as well as frequency of wetting. It was notable observations that even during summer, as well as in winter, the frequency of wetting was comparatively lower ( $p < 0.05$ ) in the case elephants of forest departments. This was same even among the private elephant owners since the frequency of wetting was significantly lower ( $p < 0.05$ ) in the case of single elephant owners as compared to those with more than one elephants.

#### ***Frequency of watering and feeding***

The frequency of watering varied with season as normally expected and was highest in summer when elephants drank more water, and the least in winter, in all the groups, as it varied between two to four times in hot summer months and one to two times in rainy season. Though there were marked differences between individual animals or owners, there was no much difference between different groups in this regard.

It was observed that the animals drank more water during summer than during rainy season. Mercy (2002) recommended that elephants should be given 250 liters of water per day. The animals were fed two to three palm leaves at a time and were provided with fresh palm leaves when the already offered ones were eaten. In the evening, few additional palm leaves were given to sustain the night. Mercy (2002) also reported that the animals were fed continuously during the daytime. It was also observed that, the owners usually fed their elephants with some

easily digestible concentrates like rice, dates, jaggery, etc. in addition to the green fodder mentioned above.

#### ***Type of housing provided***

The majority of the elephants of Kerala lack proper housing facilities. This is evident from the fact that most of them were tethered under trees on sand floors. Similar observation was made by Sarma (2002). It can be seen that only 6.25 percentages of the surveyed elephants enjoyed the comfort of a permanent roof and that these elephants either belonged to temples with more than one elephant or elephant camps of forest department. Mathew (2002) had also reported that the elephants of West Bengal forest department were kept in specialized shelters called pikhnas. It is however felt that further studies are required to ascertain whether permanent shelters are needed to house domesticated elephants at least during rainy season.

#### ***Restraint***

It was seen that the mahouts usually took enough precaution while approaching their elephants. The animals were usually controlled using restraining equipments and tools like chains, ropes, stick, hook, long pole, knives, etc. The chains used in normal animals were found to have links of  $\frac{1}{2}$  to  $\frac{5}{8}$ -inch diameter. It was seen that the mahouts of Kerala usually carried a knife, a hook and a short stick while they were attending their elephants. The knife was primarily used for collection and preparation of fodder for the elephant. The hook was meant to control the elephant.

#### ***Restraint during riding***

The mahouts were seen using body chain and double rope around the neck when the animal was taken out by walk. It was observed that one end of the body chain was usually tied on the hind limb and the other went around the body of the animal. The mahout sitting on the elephant could easily unhook body chain in case the animal went out of control. The so unlocked body chain with one end still attached to the leg forms a sufficiently long piece of chain trailing from the hind leg of the animal, which could be used to restrain the animal from a reasonably safe distance. Cheeran (1999) recommended the use of body chain and double rope

around the neck when the animal was taken out by walk. This is similar to the recommendation made by Panicker (1999).

#### ***Restraint during musth***

All the owners and mahouts of Kerala irrespective of the ownership status, age, and height of the animal reported that the musth elephants were tethered by both fore & hind limbs using big thick chains. The links of this chain were found to be 7/8-inch in diameter. This is in accordance with the suggestions of Kaimal (1999) and Cheeran (1999). Most of the mahouts also reported swapping of chain between the two hind limbs during musth.

#### ***Restraint at night***

It was observed that the elephants were tethered by one hind limb to a tree or strong pole made of iron or concrete. Cheeran (1999) also made a similar observation. This practice is different from the observation reported by Mathew (2002) who reported that the elephants of West Bengal forest department were kept in specialized shelters called pikhnas.

#### ***Control during festivals***

It was observed that the elephants were hobbled and body chains were worn during festivals with one end of the chain going around a hind leg and the other around the body of the animal. The elephant was hobbled to restrict the movement of the animal during the festival. Similar observations were made by Nayar (1999). The body chain facilitated the restraint if animal goes out of control. Such efficient restraining methods are highly warranted during festivals taking into consideration the large fervent merry making mobs, which usually throngs festival bases of Kerala.

#### ***Changes in management due to variation in utilization pattern***

The mahouts reported that the elephants were given thorough scrubbing at least once in a week during bath during the period when the animals were idle. This practice was reported by Namboothiripad (1999) and Ponnappan (1999). Elephants used for heavy work like those elephants working in timber mills were given a short bath at the end of a day's work. During this bath, the mahouts paid special attention to scrub areas like foot, inner thigh region, forehead, etc.

Ponnappan (1999) also favored such bathing. The owners and the mahouts of working elephants reported that the elephants were given bath only in the evening; after the day's work. Most of the owners and mahouts reported that the frequency of bath was reduced during the festival season due to scarcity of time and lack of availability of sufficient number of water holes at their disposal. They reported that the elephants were given a brief wash before they were taken for festivals.

The mahouts also reported that during festival seasons the elephants were tied under trees at the site of the festival, or in a place in close proximity to this site. It was observed that the working elephants of Kerala were used mainly in the morning and evening hours. Wherever possible the elephants were given rest at noon. This is in accordance with the results of the study of Krishnamurthy (1998) who reported that the working hours of the elephants were adjusted according to the season in order to avoid working in the hot part of the day.

#### ***Criteria for tying for musth in different categories***

It was seen that the criteria for tying for musth varied from region to region, animal to animal and group to group. It can be seen that all the private owners with one elephant and most of the elephants belonging to temple trusts were tied when the temporal enlargement was evident. It can also be seen that the elephants of the forest department were tied when the mahout noticed some changes in the temperament of the animal. The data also reveals 11.1 percentage of animals belonging to private owners with more than one elephant and 22.2 percentage of animals belonging to temple trusts with more than one elephant were tied according to the date of previous year's discharge. Large number of elephants belonging to private owners with more than one elephant and to temple trusts with one elephant was tied on seeing the discharge. Similar observation was made by Rasmussen *et al.* (1984). It was also seen that none of the elephant keepers reported perianal enlargement or masturbation as the main criteria for tying the elephant for musth.

### **Management of musth**

The musth elephants are very dangerous and unmanageable and are usually kept restrained with chains away from contact with people (Eisenberg *et.al.*, 1971) in Kerala. Thakuna and Barthakur (1994) reported the use of chemical sedatives to manage a case of violent musth (Sarma and Dutta, 1996). Similar cases were reported by Valandikar and Raju (1996) and Chandrasekharan and Cheeran (1996).

### **Restorative therapy**

This is the system of feeding the elephants with a diet rich in easily digestible nutrients during the monsoon season. It was reported by Joseph and Ananth (2002) also. Annual restorative therapy was administered to all the elephants belonging to temple trusts with more than one elephant and a great majority (90.9%) of the elephants belonging to private individuals with more than one elephant. It can also be seen that the elephants belonging to forest departments were not given any restorative therapy.

### **Vaccination and history of diseases**

It was seen that none of the surveyed elephants were immunized or vaccinated against any disease. Most of the mahouts and owners reported the use of tetanus toxoid especially just before or after musth. It could be seen that the major ailments observed to be affecting elephants were nail problems, abscesses, impaction, colic, respiratory infection, etc. which was in accordance with the report of Ashraf and Manikar (2003). Out of this, impaction is the single greatest problem. It is usually seen when the animal is over worked, or given feed and water soon after a tortuous journey, especially when the function is about to start. It was seen that most of the cases of impaction reported occurred in the hot summer months when the animals were having a hectic schedule attending festivals (Chandrasekharan, 2002). In general the most common ailments observed were few cases of abscess and cases of impaction. This is similar to the report of Krishnamurthy (1998) who reported that the general condition of the elephants of Kerala and Assam were good as the owners took pride in having the animal in good health.

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