

Feeding Pattern of Captive Elephants in Kerala

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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 majority are tuskers. These elephants are owned by the Kerala Forest Department, temple trust or by individuals. The feeding pattern of these elephants varies from place to place and the type of ownership. This study was taken up to understand the feeding protocols being followed by different ownership categories.

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 were collected on more than 75 discrete groups of elephants consisting of more than 250 elephants. The sample was then divided on the basis of type of ownership into five different groups similar to Krishnamurthy (1998).

1. Individual owner with one elephant
2. Individual owner with more than one elephant
3. Temple trust with one elephant
4. Temple trust with more than one elephant
5. 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 feed samples were collected from all possible sources and proximate analysis was conducted to ascertain the percentage of various proximate principles in each of the feed constituent.

Results and Conclusions

The data on the group wise average consumption of each proximate principle, presented in Table. 1 reveals that the average dry matter fed to group-3 (192.2 kg/day) is the highest, and that of group-1 was the lowest (142.0 kg/day). It can also be seen that the average crude protein fed was the highest in group-3. The statistical analysis of the data showed Group-1 was significantly different from the other three groups in this regard. The study of Ananthasubramaniam (1979) establishes that a DCP and dry matter of around 2.36 kg and 142.7 kg respectively satisfied the maintenance requirement of an elephants approaching the adult age and weight but were not adequate for promoting growth in young animals. The average dry matter fed to elephants of groups 1, 2, 3 and 4 according to this study were 142.0, 165.7, 192.1 and 187.4 kilograms respectively. The average CP fed ranged between 8.1 and 9.9 Kilogram per animal per day. Comparing these values with the recommendations made by the previous studies reveal that the DCP and TDN values of the feed fed

to the elephants in all the groups were more than the recommendations made by Ananthasubramaniam (1979). This may partly be due to the fact that the elephants of all the groups in this study were older and heavier than those in the above study. The dry matter fed to the elephants of the forest department could not be ascertained correctly because a significant number of these elephants were also taken to the forest for grazing. Similar observations were made by Sarma (2002) on the elephants in Assam. Krishnamurthy (1998) reported that apart from natural grazing for 14 to 15 hours a day, the elephants in the southern states were provided with additional grain ration in cooked form twice a day.

Table 1. Group wise average consumption of each proximate principle

Composition	Group 1	Group 2	Group 3	Group 4
Dry matter	142.01	165.69	192.13	187.44
Crude fiber	33.27	38.89	44.25	43.41
Crude protein	8.06	8.66	9.94	9.56
Ether extract	3.99	4.69	5.54	5.43
NFE	87.60	101.26	115.31	112.25
Total ash	9.65	12.19	17.19	16.79
Calcium	0.99	1.27	1.78	1.76
Phosphorus	0.66	0.84	1.19	1.17

The average dry matter fed to the elephants of each group was calculated by assuming that an average elephant weighed around 4000kg. It was found that the value thus obtained ranged between 3.55 and 4.80 percent. This value was slightly lower than the values reported by Cheeran (1999) and significantly higher than the values reported by Sukumar (1989). Moreover, annual restorative therapy, the system of feeding the elephants with a diet rich in easily digestible nutrients during the monsoon season was also practiced. This was also reported by Joseph and Ananth (2002). 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.

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