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Short Communication
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Identification of Veterinary Plants for the Treatment of Common Diseases in Asian Elephants

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Introduction

India has a rich and diverse flora that has been used for medicinal purposes for generations. Herbal medicines have been commonly used for health care in people but also in animals, and in many cases are relatively nontoxic, cheaper and eco-friendly.

Palakapya was an authority on elephant medicine in the Rigvedic period of 2000–4000 BC. The Gautham Samhita, the Ashva Ayurveda and Hasthya Ayurveda are ancient treaties on animal science. Palakapya wrote Hasthya Ayurveda dealing with elephant medicine and dedicated it to Lord Ganesha. In it, elephant medicine and surgery were divided into two parts. Maha Rogsthan or major diseases, Sudhra Rogsthan or minor diseases. He also classified various ailments of elephants into:

- Adhyatmika (physical)
- Agantuka (accidental or incidental)
- Manasa (mental diseases)
- Kapha (phlegm)

Hasthya Ayurveda also mentions about the anatomy of elephants, treatment of elephants using herbal plants and classification of elephants on the basis of a number of characteristics.

Materials and methods

Information regarding treatment of Asian elephants (*Elephas maximus*) with herbal medicine was collected by interviewing a famous traditional elephant veterinarian, the late Shri. Avanaparambu Maheshwaran Namboothiripad. A visit was also conducted to Punnathur Kotta Aanathavalam, Guruvayur (a famous elephant care centre) for interviewing mahouts.

Species of plants used in traditional medicine were collected and botanically identified by reference to the "Flora of Presidency of Madras" (Gamble & Fischer 1915–1936) and "Flowering Plants of Thrissur District" (Sasidharan & Sivarajan 1996).

Results and discussion

A total of 57 plants were identified as being used in treating elephants. They consisted of 19 herbs, 10 shrubs, 19 trees, 7 climbers and 2 aquatic species. All the plants used were angiosperms except one gymnosperm.

The 57 species belonged to a total of 32 plant families and the family with the highest representation was Poaceae with 7 species (Table 1).

Different parts of plants were used in treatment (Fig. 1, Table 1). Leaves were the most common part, being used in 27 % of treatments. Flowers were the next most commonly used, being in 18 % of treatments.

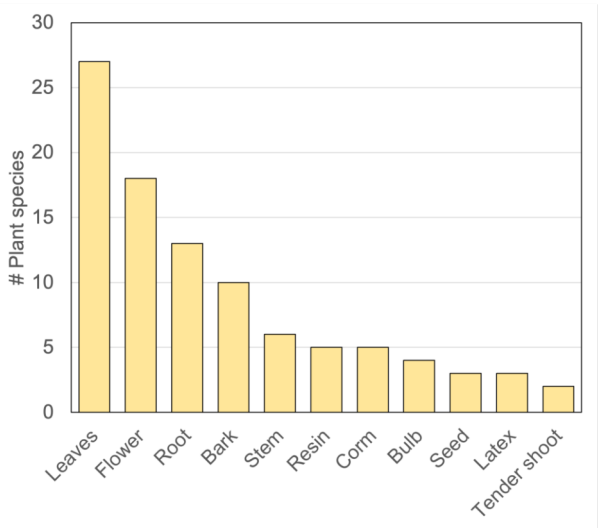

Figure 1. Different parts of plants used in treatment.

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Table 1. List of plants used to treat elephants.

Family	Scientific name	Type	Parts used	Musth	Consti-pation	Paralysis	Wound	Nail crack	Foot disease	Heel crack	Ulcer	Diarrhoea
Acanthaceae	*Hygrophila auriculata*	Herb	Whole plant	X								
Acanthaceae	*Justicia adhatoda*	Shrub	Whole plant			X						
Amaryllidaceae	*Allium sativum*	Herb	Bulb			X						
Apiaceae	*Cuminum cymium*	Herb	Fruit, Seed				X					
Apocynaceae	*Alstonia schloaris*	Tree	Root, Bark	X								
Apocynaceae	*Calotropis gigantea*	Shrub	Flower, Leaves, Bark, Latex						X			
Araceae	*Acrous calamus*	Herb	Leaves, Stem, Root					X				
Araceae	*Amorphophallus paeniifolus*	Shrub	Corm	X								
Araceae	*Borassus flabellifer*	Tree	Fruit, Leaves, Stem					X				
Arecaceae	*Cocos nucifera*	Tree	Fruit, Leaves, Flower		X							
Asteraceae	*Cyanthilium cinnereum*	Herb	Root	X								
Asteraceae	*Saussurea costus*	Herb	Root			X						
Brassicaceae	*Sinapis alba*	Herb	Fruit						X			
Callophyllaceae	*Mesua ferrea*	Tree	Fruit, Stamen, Flower				X					
Cycadaceae	*Cycas circinnalis*	Tree	Leaves		X							
Euphorbiaceae	*Jatropha gossipifolia*	Shrub	Seed							X		
Fabaceae	*Abrus precatorius*	Climber	Leaves	X								
Fabaceae	*Milletia pinnata*	Tree	Leaves, Bark, Root, Seed				X					
Lamiaceae	*Ocimum sanctum*	Herb	Leaves					X				
Malvaceae	*Sida acuta*	Herb	Leaves	X								
Meliaceae	*Azadirachta indica*	Tree	Stem, Bark, Leaves	X								
Menispermaceae	*Coscinium fenestratum*	Woody climber	Stem, Bark				X					
Menispermaceae	*Cyclea peltata*	Climbing shrub	Stem, Root						X			
Menispermaceae	*Tinospora cordifolia*	Climbing shrub	Whole plant	X								
Moraceae	*Ficus arnottiana*	Tree	Fruit				X					
Moraceae	*Ficus benghalensis*	Tree	Leaves, Bark				X					
Moraceae	*Ficus microcarpa*	Tree	Leaves, Bark, Fruit		X						X	
Moraceae	*Ficus racemosa*	Tree	Leaves, Bark, Fruit								X	
Moraceae	*Ficus religiosa*	Tree	Leaves, Root, Tender shoot			X						

Table 1. List of plants used to treat elephants (continued).

Family	Scientific name	Type	Parts used	Musth	Consti-pation	Paralysis	Wound	Nail crack	Foot disease	Heel crack	Ulcer	Diarrhoea
Moringaceae	*Moringa oleifera*	Tree	Leaves, Root, Bark, Flower	X								
Musaceae	*Musa acuminata*	Evergreen perennial	Fruit		X							
Myristicaceae	*Myristica fragrans*	Evergreen perennial	Fruit, Seed			X						
Nelumbonaceae	*Nelumbo nucifera*	Aquatic perennial	Petiole, Flower, Seed, Root							X		
Nyctaginaceae	*Boerhaavia diffusa*	Herb	Leaves, Stem, Root	X								
Nymphaeaceae	*Nymphaea stellata*	Aquatic perennial	Leaves, Flower, Rhizome									X
Oleaceae	*Jasminum grandiflorum*	Shrub	Leaves, Flower, Root	X								
Pedaliaceae	*Sesamum indicum*	Shrub	Fruit		X							
Piperaceae	*Piper betle*	Climber	Leaves					X				
Piperaceae	*Piper longum*	Climber	Fruit, Root			X						
Piperaceae	*Piper nigrum*	Climber	Fruit		X							
Plumbaginaceae	*Plumbago zeylanica*	Shrub	Root, Root bark, Seed						X			
Poaceae	*Cyperus rotundus*	Herb	Rhizome									X
Poaceae	*Bambusa bambos*	Herb	Bark, Resin, Tender shoot				X					
Poaceae	*Calamograstis rubescens*	Herb	Leaves		X			X				
Poaceae	*Cynodon dactylon*	Herb	Whole plant		X							
Poaceae	*Oryza sativa*	Herb	Seed		X							
Poaceae	*Saccharum officinarum*	Shrub	Root			X						
Poaceae	*Triticum aestivum*	Herb	Whole plant, Seed			X						
Rubiaceae	*Neolamarckia cadamba*	Tree	Leaves	X								
Rutaceae	*Aegle marmelos*	Tree	Leaves, Flower, Fruit, Bark, Seed	X								
Rutaceae	*Citrus aurantifolia*	Tree	Leaves, Fruit					X				
Rutaceae	*Murrayya koenigii*	Tree	Leaves	X	X							
Santalaceae	*Santalum album*	Tree	Wood, Oil	X								
Solanaceae	*Capsicum annum*	Shrub	Fruit		X							
Solanaceae	*Withania somnifera*	Shrub	Root, Leaves	X								
Zingiberaceae	*Elattaria cardamomum*	Herb	Fruit						X			
Zingiberaceae	*Zingiber officinale*	Herb	Rhizome		X							

For most treatments, multiple species of plants were used and the number of plant species utilised to treat an ailment varied (Table 1, Fig. 2).

Musth

To reduce the aggressiveness during musth, 16 plant species were used (Table 1, Fig. 2). The combination of plant species applied changed over the time period of treatment as below.

First month: *Cyathilium cinereum*, *Tinospora cordifolia*, *Moringa oleifera*, *Sida acuta*, *Alstonia scholaris*, *Santalum album*, *Withania somnifera* and *Hygrophila auriculata*.

Second month: *Neolamarckiana cadamba*, *Abrus precatorius*, *Amorphophallus paeniifolus* and *Santalum album*.

Third month: *Boerhaavia diffusa*, *Hygrophila auriculata*, *Abrus precatorius*, *Santalum album* and *Murrayya koenigii*.

After three months, *Jasminum grandiflorum*, *Azadirachta indica* and *Aegle marmelos* were used for treatment for another one week.

Conservation status of plants used in treatment

From the data base on "Rare, Endangered, Threatened (RET) Plants of Kerala" compiled by (KFRI) Peechi, it is seen that *Coscinium fenestratum* is critically endangered, *Cycas circinalis* and *Withania somnifera* are endangered species, *Trachyspermum ammi* and *Saussurea costus* are listed as threatened and *Santalum album* is the only vulnerable species. *Cyclea peltata* is the only endemic species.

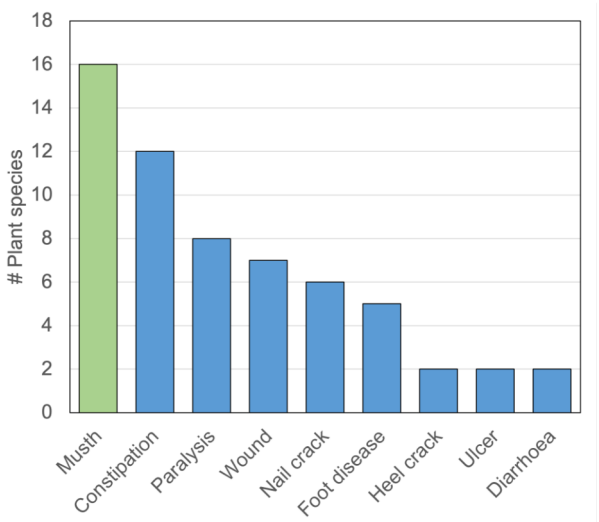

Figure 2. Number of plant species used for treating some common diseases and conditions.

References

Gamble JS & Fischer CEC (1915–1936) *The Flora of the Presidency of Madras. Parts 1–11*. (parts 1–7 by Gamble JS and 8–11 by Fischer CEC). Adlard & Sons Ltd., London.

Sasidharan N & Sivarajan (1996) *Flowering Plants of Thrissur Forest (Western Ghats, Kerala, India)*. Scientific Publishers, Jodhpur, Rajasthan.