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Oral Administration of Plant formulations to Treat Bone Fractures in Domestic and Pet Animals in Nallamalla Forest Region of Eastern Ghats of India, Andhra Pradesh

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Abstract **Original Research Article**

Bone fractures in domestic and pet animals were treated with oral administration of Plant formulations in the villages of Nallamalla Forest regions of Eastern Ghats of India, Andhra Pradesh. A total of 37 plant species with therapeutical importance were identified and these species were belonging to 34 genera and 27 families. plant formulations were prepared from these plant species for treating bone fractures. Bone fractures are caused due to accidents and are accompanied by severe pain, swelling and injuries also. In this modern era more than 80% population still depends traditional medicine (Anonymous, 2002). Ethno medicinal / ethano veterinary use of plants is successful criteria in the pharmaceutical industry for searching new therapeutic agents (Cox and Balick, 1994). Various authors studied the ethno veterinary practices in different parts of Andhra Pradesh (Murty and Narasimha Rao, 2012; Lakshminarayana and Narasimha Rao, 2013 a; 2013b; 2013c; 2015a and 2015b). In continuation with our earlier work on external application of medicated poultice for treating bone fractures (Jayanth Babu *et al*., 2024), we are presenting the oral administration of plant formulations prepared from medicated herbs for treating the bone fractures in domestic animals of the villages in Nallamalla forest region of Andhra Pradesh.

Keywords: Traditional medicine, Bone fractures, Nallamalla Forest regions.

INTRODUCTION

Nallamala forests are the part of the Eastern Ghats of India and geographical location is in between the latitude 16º 28' 33" and the longitude 79º 48'30". The flora in this region varies from deciduous forests to scrub jungles. As a Forest officer the first author (Jayanth Babu) was privileged to work and perambulated several times, in all the interior Forest areas of Nallamalla, Eastern Ghats of India. This investigation was carried out during November 2017 to October 2018 in study sites and interacted with village vydyas, elderly people and tribal doctors. In this process authors were acquiring valuable information for treating several ailments. Methodology followed was as described by Jain (1987), Hemadri (1994) and Martin (1995). Followed the procedure for preparation of poultice (Jayanth Babu et.al., 2024).

Specified ingredients to be mixed with indicated plant parts: 1) Pepper seed 1 to 5 Nos to be powdered 2) Goat's milk 30 ml.is prefeed for the best results and if not Desi Cow's milk 60 ml 3) Curcuma longa (Turmeric) powder 1 to 5 grams 4) Jaggery 5 to 20 grams. Pet animals like Cats, Dogs etc., and domestic animals like Sheep, Goats, Cows, Bulls, Buffaloes and even Horses. Depending on size of the animal the weight of the poultice the intake varies from 1 gram to 3 grams. For small animals to start with 2 to 5 kgs of body weight, intake of 1 to 3 grams of herbal medicine is sufficient. If the weight of the animal increases, the quantity of the intake of plant medicine can also be increased proportionately. This process of application is to be repeated every day for a period of 15 days. Complete healing can be expected within 2 weeks including pain management.

RESULTS AND DISCUSSION

In this present study a total number of 37 plant species belonging to 39 genera and 27 families have been identified as potential source for treating bone fractures. Table 1 shows the scientific names of the species along with families, vernacular names, part(s) used, doses and

mode of preparation and its application below. Present study of crude drugs yielded 37 species used for bone fractures. *Among them Vanda tessellate, Sterculia urens*, had been previously reported for bone fractures by Kirtikar and Basu, (1935) Rama Rao and Henry, (1996) and Jayanth Babu (2024).

Table 1: Ethno-Veterinary plants being used for curing bone fractures, methods of preparation and dosages adopted for internal application

S. No	Name of the plant Species, Family, Local name,	Plant parts used & dose per 1 day	Method of preparation and usage
1	*Pavonia zeylanica* Malvaceae Kaaru benda	Roots powder 3 to 10 grams	Root powder is mixed with the specified ingredients and given orally once in a day for 15 days. Whole plant is a pain killer.
2	*Pavonia odorata* Malvaceae chiru benda	Roots powder 3 to 10 grams	Root powder is mixed with the specified ingredients and given orally once in a day for 15 days. Whole plant is a pain killer.
3	*Hibiscus micranthus* Malvaceae. Nitya malli	Roots powder 3 to 10 grams	Root powder is mixed with the specified ingredients and given orally once in a day for 15 days. Whole plant is a pain killer.
4	*Sida cordata.* Malvaceae. Nela benda / Tirunaalla benda	Leaves powder 5 to 50 grams	Leaves powder is mixed with the specified ingredients and given orally for 15 days
5	*Solanum nigrum* Solanaceae. Kaamanchi	Leaves juice 20 ml to 60 ml	Leaves juice is mixed with the specified ingredients and given orally for 15 days
6	*Eclipta alba.* Asteraceae. Bringaraj / Gunta galagara	Leaves juice 20 ml to 60 ml	Leaves juice is mixed with the specified ingredients and given orally for 15 days
7	*Peristrophe paniculata* Acanthaceae. Velama sandhi	Leaves paste / powder 10 to 50 grams	Leaves powder is mixed with the specified ingredients and given orally for 15 days
8	*Acacia chundra* Mimosaceae. Chandra	Stem heart wood 10 to 25 grams	Hot water decoction is prepared using the stem wood and specified ingredients are added and given once in a day orally for 15 days
9	*Syzygium cumini* Myrtaceae, Jamun Neredu	Stem Bark 10 to 25 grams	Hot water decoction is prepared with the stem bark, specified ingredients are added and given once in a day orally for 15 days
10	*Bambusa arundinaceae* Poaceae. Halllow bamboo. Mollem veduru	Tender terminal stem and leaves powder/paste 10 to 30 gr grams	Plant powder/paste mixed with the specified ingredients, given orally once in a day for 15 days
11	*Anona squamosa* Anonaceae. Seethaphal	Stem bark is Powdered / made into paste.5 to 10 g	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days
12	*Anona reticulata* Anonaceae. Rama phal	Stem bark is Powdered or made into paste. 5 to 20 g	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days
13	*Terminalia arjuna* Combretaceae. Tella maddi. Arjuna, Verumaddi	Stem bark is Powdered or made into paste. 5 to20g	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days
14	*Manilkara hexandra* Sapotaceae. Paala	Stem bark is Powdered or made into paste. 5 to10g	Plant bark powder / paste is mixed with the specified ingredients and given orally for 15 days
15	*Cochlospermum religiosum*. Cochlospermaceae Konda gogu	Stem bark is Powdered or made into paste. 5 to 10g	Plant bark powder / paste is mixed with the specified ingredients and given orally for 15 days
16	*Ormocarpum cochinchinense.* Fabaceae, Elumpotti	Leaves are Powdered or made into paste. 5 to 10g	Plant leaves powder / paste is mixed with the specified ingredients and given orally for 15 days
17	*Cissus quadrangularis* Vitaceae. Nalleru	Stem paste. 5 to 25 g	Stem paste is mixed with the specified ingredients and given orally for 15 days
18	*Senna occidentalis*. Caesalpiniaceae. Kasivenda	Leaves fine paste 5 to 25 grams	Leaves paste is mixed with the specified ingredients and given orally for 15 days

S. No	Name of the plant Species, Family, Local name,	Plant parts used & dose per 1 day	Method of preparation and usage
19	*Sterculia urens* Steerculiaceae Tapasi or yerra poliki	Stem bark paste/ powder 5 to 20 g and its gum 3 to 10 g	Powder or paste and gum is mixed with the specified ingredients and given orally for 15 days
20	*Bombax ceiba*. Bombacaceae. Buruga	Stem bark powder 5 to 20 grams & It's gum 5 to 20 g	A paste is made and bark powder and gum by adding adequate water and mixed with the specified ingredients, given orally for 15 days
21	*Puppalia lappacea* Amaranthaceae. Anteetha	Leaves 5 to 25g; made in to paste	Leaves paste is mixed with other specified ingredients, given orally every day, for 15 days
22	*Caralluma attenuate*. Asclepiadaceae. Kundeti kommulu	Stems paste 5 to 25 grams	Stems paste is mixed with other specified ingredients, are given orally every day, for 15 days
23	*Desmodium triflorum*. Fabaceae. 3 flowered beggar weed	Whole plant is made in to paste dose 5 to 25 g	Leaves paste is mixed with other specified ingredients, given orally per each day, for 15 days
24	*Ficus benghalensis* Moraceae; Marri or Banayan tree	Tender juvenile prop roots tips or stem bark 5 to 25 grams	Plant powder/paste is mixed with the specified ingredients and given orally for 15 days
25	*Ficus racemosa* Moraceae; Medi or Audumbara	Stem bark 5 to 25 grams paste or powder	Plant stem bark powder/paste is mixed with the specified ingredients and given orally for 15 days
26	*Litsia glutinosa* Lauraceae; Nara mamidi	Stem bark paste or powder 5 to 25 grams	Plant stem bark powder/paste is mixed with the specified ingredients and given orally for 15 days
27	*Schleichera oleosa* Sapindaceae; Busi or LAC insects tree	Stem bark 5 to 25 grams	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days
28	*Euphorbia nivula* Euphorbiaceae; Aaku jemudu	Stem bark 5 to 25 grams	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days
29	*Lannea coramandalica* Anacardiaceae; Gumpena	Stem bark 5 to 25 grams	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days
30	*Soymida febrifuga* Meliaceae; Somida ; Somi	Stem bark 5 to 25 grams	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days
31	*Tinospora cordifolia*; Menispermaceae: Tippa teega	Stem 5 to 25 grams	Stem paste is mixed with the specified ingredients and given orally for 15 days
32	*Acampe praemarosa* Orchidaceae - Badanika	Whole plant 5 to 25 g	Plant paste is mixed with the specified ingredients and given orally for 15 days
33	*Ziziphus oenoplea* Rhamnaceae : Regu –Parika kampa	Leaves 5 to 25 grams	Plant leaves powder/paste is mixed with the specified ingredients and given orally for 15 days
34	Vanda tessllata Orchidaceae; Badanika	Whole plant 5 to 25 g	Whole plant paste is mixed with the specified ingredients and given orally for 15 days
35	Wattakaka volubilis Asclepiadaceae; Dudhi pala	Leaves 5 to 25 g paste	Leaves paste is mixed with the specified ingredients and given orally for 15 days
36	Albizzia amara Fabaceae; Chigara Cheekireni	Stem bark 5 to 25 grams	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days
37	Prosopis spicigera; Fabaceae; Jammi or sami	Stem bark 5 to 25 grams	Plant bark powder/paste is mixed with the specified ingredients and given orally for 15 days

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