



Ethnomedicinal Plant Treatment Practices in Vouge for Curing Different Ailments in the Villages of Alluru Sitarama Raju District, the Eastern Ghats of Andhra Pradesh, India

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ABSTRACT

This paper deals with the Ethno medicinal treatment practices for treating different types of ailments. The present survey comprises of totally fifty Ethno-medicinal formulae which provides information in detail on the therapeutic values of 34 plant species belonging to 31 genera and 24 families, covering 21 different ailments or health exigencies. Information on botanical names, vernacular names, families, plant parts & used methods of preparation of drugs as well administration are presented in a detailed manner. The Information collected in this study would act as vital data for scientific community.

Introduction

In spite of enormous progress in modern medical system, about 80% of the world population still depends on traditional systems of medicine for primary health care, which is true in Indian scenario; Anonymous, (2002) Medicine in contemporary India is a fascinating blend of traditional system with conventional one and often been used for various historical, cultural and ecological and socio economic reasons; (Khan, (2006) Kunwar et al., (2010). It is very important to document, analyse and evaluate this knowledge not only for their cultural reasons, but also for their commercial value, as ethno medicinal uses of plants is one of the most successful criteria used by the pharmaceutical

industry in finding new therapeutic agents (Cox and Balick, 1994). Several authors (Murty and Narasimha Rao, 2010; Narasimha Rao and Murty, 2014; Jayanth Babu et al, 2017; Jayanth Babu et al, 2018; Narasimha Rao, 2020; Jayanth Babu et al, 2020A; Jayanth Babu et al, 2020B; Jayanth Babu et al, 2020C; Jayanth Babu et al, 2020D; Jayanth Babu et al, 2020E; Jayanth Babu et al, 2020F; Jayanth Babu et al, 2020G; Jayanth Babu and Narasimha Rao, 2021) studied the usage of plant species in ethnomedicinal practices around Andhra Pradesh region of Eastern Ghats of India. In the present study information was collected on the use of some medicinal plants in the East Ghats of India to treat various ailments as furnished herein.

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Study Area

The Eastern Ghats are a long chain of broken hills that pass mainly through three states viz., Orissa, Andhra Pradesh and Tamilnadu (Legris and Meher-Homji, (1982). They run about 1750 km with an average width of about 100 km between Mahanadi and Vaigai rivers along the Indian east coast. In Andhra Pradesh and Telangana they situated between 120 38' – 22° N latitudes and 780 50' – 840 46' E longitudes. The altitudes range from 300 – 1000 Mts. above MSL and the vegetation varies from semi-evergreen forests to scrub jungles. Present study areas in Eastern Ghats of India are Kichhamvani palem, Mampa, Doddavarm, Koyyuru and surrounding villages of chintapalli, paderu, Hukumpet, Araku, Matsyagundam mandal, and the other areas of Alluri Sitarama Raju District of Andhra Pradesh. Tribes like Koyas, Kondareddis, Valmiki, Chenchus, Lambadas, Jatapus, Savaras, Bagatas, Porjas, Khonds, Yanadis and Yerukalas are inhabitants of the forest regions of Eastern Ghats.

Materials and Methods

For conducting Research work particularly Perambulated during the years 2016 to 2017, in the erstwhile Visakhapatnam and Godavari Districts located in Eastern Ghats. In that process, came across with so many tribal people, as well as many native doctors who are well versed in treating ailments easily with the plants available in Nature locally. The authors spent most of their valuable time ie., years together to meet them repeatedly for interacting with such knowledgeable people to know the proven, effective, established secret formulae and therapeutic values of such wonderful plants. In the process and were successful in acquiring the valuable knowledge from them for treating many ailments. While doing so comparing the medicinal practices and medicinal uses of herbs in vogue in different areas, being used for curing different ailments was also attended to. The authors also enquired, cross verified and ascertained in the field, with the local doctors and Tribal people about the information available in various books / papers already published. The methodology was adopted as described by Jain (1964, 1981, 1987, 1999), Chadwick and Marsh (1994), Hemadri (1994) and Martin (1995).

Procedure Followed

For collection of the required plant materials and further processing including the methods of preparation of infusions, dosages, different poultices used for curing different ailments followed by Jayanth Babu et al (2024).

Preparation of Infusions and Decoctions

Stainless steel vessels are to be used for boiling pure and soft water. Vessels of aluminium, copper, brass, zinc and other metal vessels are to be avoided.

Hot water infusion: pure water is to be boiled in stainless steel vessel. The collected flowers or pounded leaves, or powders of roots, or stem or stem bark, root powders or seeds, Rhizomes etc., as specified / indicated to be added in the boiling water and flame is to be put-off. Steep for 15 minutes and allowed to stain.

Cold water infusion: Indicated plant material is to be steeped in cold water for a night and to be used in the morning.

Decoction: The Root/ Stem/ Bark etc., powders are gently boiled in pure water for 10 minutes.

Dosage for adults: 5 grams per 1 day. 5 grams of plant material powder as indicated can be mixed in 100 ml. of water can be used /consumed twice a day in two split doses in the form of Decoction/Hot or Cold water infusions. The decoctions/infusions are to be prepared every day afresh and should not be stored.

Dosage for children: Age 2 to 5 years 1 gram of plant powder is being given. Age 6 to 10 years 2 grams of plant powder is being given. Age 11 to 14 years 3 grams of plant powder is specified.

Results and Discussion:

This present study comprises of a total number of 50 Formulae; 34 plant species, belonging to 32 genera and 24 families have been identified as potential source for treating about 21 different types of Ailments or Health exigencies.

Table 1: The scientific names of the species along with families, vernacular names, part (s) used, doses and mode of preparation are recorded as detailed below.

Sl. No.	Name of the plant species; Family; Local name; Common name	Name of the Health Exigency; Ailments / Diseases being addressed	Plant parts used; Dose; Method of preparation and usage
1.	<i>Dregea volubilis</i> ; Apocynaceae; Green milk weed climber. Tummidi teega, Sarpa gedda chettu.	A). For curing Snake bites caused by all the three species of snakes namely, Cobra, Russell's viper and Krait as well their sub species. B) For diabetes - For lowering and controlling blood sugar levels C) Used for curing cancer in the early stages. D) For combating against severe cold and cough.	A) Plant Stem bark or root bark – 10 grams is taken and grinded into a fine paste along with 7 to 11 no.s of Black pepper. This is given orally with 60 ml of Luke - warm water to the person. This acts as an excellent antidote for snake bites. B) 5 grams of fine Leaves paste mixed with 1 gram of turmeric powder is given in the morning with empty stomach for 7 days. C) 3 grams of Root's paste is mixed with along with 2 turmeric powder and given orally early in the morning along with 30 ml of water for 30 days. D) Optimum quantity of flowers and leaves along with red gram dal is made into a curry and eaten daily once in a day along with cooked rice for a period one week.
2.	<i>Cassine glauca</i> ; Celastraceae; Bhuta vegisa, Nerdi	A) For curing Snake bites.	A) 20 grams of plant stem bark is mixed with 2 gr of common salt grinded into a fine paste and half of the quantity of the paste is mixed in 60 ml of water, given orally. Rest of the half qty. of paste is placed over the bite of the snake and bandaged for curing snake bite.
3.	<i>Asparagus racemosus</i> ; Liliaceae. Satavari ; Pilli tegalu	For curing snake bites	20 ml of the tubers juice is given orally for curing snake bites.
4.	<i>Holarrhena anti dysenterica</i> ; Apocynaceae; Kutaja, kodisa pala	1) For curing snake bites. 2) For curing Dysentery, Amoebiosis, Bleeding piles	1) 5 grams of root bark paste mixed in 50 ml of water boiled to get a decoction and is given orally for curing snake bites. 2) Stem bark paste 5 grams is given along with Luke warm water for curing dysentery also bleeding piles.
5.	<i>Soymida febrifuga</i> ; Meliaceae; Somida; Rohini; Rakta Rohini	A) For Snake bites. B) For curing the MUSCULAR ATROPHY being experienced in old aged people; AIDS patients and in T.B. patients called locally as ' YENDU ROGAM' C) For curing scorpion sting D) For curing Fevers of any type	A) 20 grams of plant stem bark is mixed with 2 grams of common salt grinded into a fine paste and half of the quantity of the paste is mixed in 60 ml of water, given orally. Rest of the half qty. of paste is placed over the bite of the snake and bandaged for curing snake bite. B) Decoction is prepared by boiling 10 grams of bark powder or bark paste in 100 ml of water along with 5 gr of <i>Aswagandha</i> powder to get 60 ml of the decoction and given in two split doses in a day for a period of 40 days regularly. C) Bark paste 10 grams is mixed in 20 ml of water and given internally/ orally and another 10 gr. paste is placed over the sting and bandaged for curing scorpion sting. D) 20 grams of Soymida tree stem bark is pounded well, and boiled in 100 ml of water to get 60 ml of decoction and administered orally thrice in a day in 3 split doses @ 20 ml per each dose.
6.	<i>Zizyphus glabrata heyne</i> ; Rhamnaceae; Pedda parimi	A) For curing chronic cough or Allergic bronchitis B) For curing sexually transmitted diseases. C) For purification of blood	A) Stem bark 3 grams mixed with 5 no. s of black pepper and 2 grams of turmeric powder, made in to a fine paste and given once in a day orally along with 30 ml of Luke warm water for a period of 7 days to 40 days for curing severe cough. B) It is also used for curing venereal diseases (STDs) like Gonorrhoea, Syphilis etc., C) It is also used for purification of Blood

Sl. No.	Name of the plant species; Family; Local name; Common name	Name of the Health Exigency; Ailments / Diseases being addressed	Plant parts used; Dose; Method of preparation and usage
7.	<i>Spathodea companulata</i> . Bignoniaceae African tulip tree	For removal of wrinkles on the face and softening and tightening of the skin as well for hydrating the skin on the face and neck.	20 grams of stem bark fine paste is mixed with 10 grams of fine stem paste of <i>Zizyphus grabrata</i> . This paste / mixture is applied on skin of the face and around the neck as facial treatment. Keep it for one hour and washed with fresh water - there on for softening the skin as well for removing the dead skin and folds on the neck/ face.
8.	<i>Erythroxylon monogynum</i> ; Erythroxylaceae; Devadaru. Basterd sandal	For curing diarrhea; Amoebiosis. For expelling hook worms / Ascaris from the intestines.	Bark paste 5 grams mixed with 7 numbers of black pepper powder - is given orally along with butter milk, thrice in a day for 7 days.
9.	<i>Alstonia scholaris</i> . Apocynaceae; Sapta-parni; Edu Aakula paala. Devil tree.	1) For controlling and reducing the high blood pressure to normal state. 2) For curing blood motions, Diarrhea, Amoebiosis. To expel Worms and Nematodes from the intestines. 3) For curing MALARIAL FEVER and as well as acts as a prophylactic measure for Malarial fever. 4) For preventing the incidence of CANCER and for preventing cancer in the early stages	1) Stem bark 5 grams is grinded in to a fine paste using adequate water by mixing with 7 black pepper seed and made into 2 pills of 2 equal parts. Given to Hypertension patients @ one pill in the early morning and another pill in the evening for 1 day X for a period of 7 days for controlling and curing high B.P. 2) Few drops latex also 10 grams of flowers obtained from the tree is added to 75 grams of jowar flour mixed well in adequate water to prepare roti dough. Roti is prepared and eaten @ 1 roti per 1 day X 7 days. Leaves decoction is also given orally on daily basis. 3) & 4) 10 grams of Stem bark paste is mixed with 7 no.s of black pepper seed powder and 2 grams of Turmeric powder and 100 ml of water. Boiled well to get a 50 ml of decoction and taken orally in the morning and evening in 2 two split doses for a period of 7 days.
10.	<i>Gymnema sylvestre</i> . Asclepiadiaceae; Podapatri	1) For lowering the blood sugar levels; and to control diabetes. 2) Used for curing Scorpion stings. 3) Used for curing Fever, cold cough and for De - worming in children	1) 2 to 4 leaves are chew in the early morning in empty stomach 2) 3 to 4 leaves are crushed and taken orally for curing scorpion stings. 3) Decoction is made using 100 ml water, mixing in it 5 to 6 leaves paste and a powder of 3 to 5 black peppers given 3 times a day for 3 to 4 days
11.	<i>Andrographis paniculata</i> ; Acanthaceae; Nela vemu; King of bitters	1) For curing Malarial fever 2) For Lowering blood sugar levels and for controlling diabetes 3) For curing snake bites. 4) for curing scorpion stings. 5) For curing dysentery	1) 5 grams of the whole plant powder is mixed in 60 ml of water, along with crushed black peppers 7 no. s, and turmeric powder 2 grams and boiled for 10 minutes. This decoction is given orally for curing malarial fever. Same decoction is repeated for intake for 5 to 6 days. For curing the problems as indicated against the serial numbers, 2, 3, 4 and 5 the same procedure is being adopted.
12	<i>Nyctanthes arbor -tristis</i> . Oleaceae. Parijatham	1) For curing malarial fever. 2) For curing the un bearable pain in the Spine; and pain in the Lower back ie., Lumbar and Sacrum	1) 10 grams of green leaves are mad in to a paste and is mixed in 60 ml of water, along with crushed black peppers 7 no. s, and turmeric powder 2 grams and boiled for 10 minutes. This decoction is given orally for curing malarial fever. Same decoction is repeated for intake for 5 to 6 days. 2) Root bark powder or paste is prepared and 5 grams of the powder or paste along with fenugreek seed powder 2 grams and turmeric powder 2 grams are mixed in 60 ml of water and boiled well to get 30 ml of decoction, given in two split doses morning and evening for a period of 20 days.

Sl. No.	Name of the plant species; Family; Local name; Common name	Name of the Health Exigency; Ailments / Diseases being addressed	Plant parts used; Dose; Method of preparation and usage
13.	<i>Terminalia tomentosa</i> ; Combretaceae; Nalla maddi	For curing Malarial fever.	20 grams of Stem bark is pounded in to a fine paste or powder, mixed in 200 ml of water along with 7 to 10 no, of black pepper powder, boiled well to get 100 ml of decoction, given in 3 equal split doses in a day – for 3 days .
14.	<i>Ailanthus excelsa</i> ; Simaroubaceae; Pedda maanu.	For curing Malarial fever, Asthma, Bronchitis & dysentery	20 grams of Stem bark is pounded in to a fine paste or powder, mixed in 200 ml of water along with 7 to 10 no, of black pepper powder, boiled well to get 100 ml of decoction, given in 3 equal split doses in a day – for 3 days .
15.	<i>Tinospora cordifolia</i> ; Menispermaceae; Guduchi, Tippa teega, Amrutha valli, Saliviri gedda	For curing fevers of any type	20 grams of Stem is pounded in to a fine paste or powder is mixed in 200 ml of water along with 7 to 10 no.s of black pepper powder, boiled well to get 100 ml of decoction, given in 3 equal split doses in a day – for 3 days
16.	<i>Aerva lanata</i> ; Amaranthaceae; konda pindi mokka	For curing fevers of any type, Cough and kidney stones	20 gr of whole plant is pounded in to a fine paste or powder, mixed in 200 ml of water along with 7 to 10 no, of black pepper powder, boiled well to get 100 ml of decoction, given in 3 equal split doses in a day – for 3 days. For removal of kidney stones intake of decoction is continued for 15 days
17.	<i>Mimosa pudica</i> ; Mymoseceae; Touch me not; Athha pathhi	For curing the fevers associated with chills	20 gr of roots paste mixed in 200 ml of water along with 7 to 10 no. s of black pepper powder, boiled well to get 100 ml of decoction, given in 3 equal split doses in a day – for 3 days.
18.	<i>Euphorbia thymifolia</i> ; Euphorbiaceae; Laghu dudhika, Dudi,	For increasing the breast milk in Lactating mothers	30 gram of this herb is cooked as curry in red gram dal and given to mothers for increasing breast milk.
19.	<i>Leptadenia reticulata</i> ; Asclepiadaceae; Jeevanthi; Mukku tummadu teega.	For increasing the breast milk in Lactating mothers	30 gram of the this herb is cooked as curry in dal and given to mothers for increasing breast milk
20.	<i>Dendrocalamus strictus</i> . Poaceae. Sadanam veduru. Solid bamboo	For curing cough and Asthma	30 grams of bamboo leaves are boiled in 100 ml of water to get about 50 to 60 ml decoction and given orally early in the morning for 1 week.
21.	<i>Tridax procumbens</i> ; Asteraceae; Bellapu aku; Gaddi Chamanthi	For curing cough and Asthma	20 grams of tender Aerial shoot of the herb is plucked and chew early in the morning.
22.	<i>Euphorbia hirta</i> ; Euphorbiaceae; Reddi gari naana baalu; Asthma weed;	1) For curing Cough and Asthma and all types of respiratory Ailments. 2) For curing all types of fevers	10 gr of tender Aerial shoot of the herb is plucked, made in to a fine paste by mixing with 2 grams of Turmeric powder, black pepper 7 no. s; mixed in 200 ml of water and boiled for 5 minutes. This decoction is given to the patients @ 20 ml per every 3 hours and may be continued for 2 to 3 days
23.	<i>Acalypha indica</i> ; Euphorbiaceae; Kuppintaaku	1) For curing cough and Asthma; Bronchitis; Pneumonia 2) For curing Piles 3) For lowering Hyper tension 4) For curing Jaundice.	10 grams of tender Aerial shoot of the herb is plucked, made in to a fine paste by mixing with 2 gr of turmeric powder, black pepper 7 no. s; mixed in 200 ml of water and boiled for 5 minutes. This decoction is given to the patients @ 20 ml per every 3 hours and may be continued for one more day.
24.	<i>Ficus benghalensis</i> ; Moraceae; Marri; Banayan tree	1) To get speech in the children who are unable to talk.	10 grams of Tender prop roots terminals are made in to a fine paste and this paste is rubbed thrice in a day for 21 days.

Sl. No.	Name of the plant species; Family; Local name; Common name	Name of the Health Exigency; Ailments / Diseases being addressed	Plant parts used; Dose; Method of preparation and usage
25.	<i>Aegle marmelos</i> ; Rutaceae; Bilva Maredu;	for curing loose and watery motions and blood motions in the children	Matured fruit pulp 10 grams paste or powder of Maredu is taken and 10 grams of drupe or fruit's yellowish green pulp (dried fruit pulp <i>Chebula myrobalan</i> without seed) powder are grinded together into a paste using adequate water; made into pills of each 1 gram dried under the sun. Dose; 1 or 2 pills are given orally along with water, twice in a day
26.	<i>Terminalia chebula</i> ;; Combretaceae; Karaka		
27.	<i>Aloe vera</i> ; Asphodelaceae (Lilaceae) Kalabanda.		10 grams of Puffed BORAX (Veligaram) is made into Powder (heated on fire in a stain less steel kadai / pan and powdered) + and 10 grams of Black PEPPER seed is powdered. Grinded in to a thick paste using <i>Aloe vera</i> leaf inner side pulp ; Made into pills -- each weighing 1 gram; dried under sun preserved in a glass bottle. Given to children @ 1 pill in the morning and 1 pill in the evening along with a little quantity of Breast milk for 7 days.
28.	<i>Pepper nigrum</i> ; Piperaceae; Black pepper ; Miriyalu.	for curing all types of coughs in children	
29.	<i>Terminalia arjuna</i> ; Combretaceae; Tella maddi; Arjuna tree.		Stem bark powder of Arjuna 20 grams & <i>Emblica</i> Fruit dry pulp powder 20 gr; & <i>Aswagandha</i> root powder 20 gr; & <i>Rauwolfia</i> root powder 20 gr. and <i>Tinospora</i> stem extract in the form of powder (Tippa satvam) 20 gr., are mixed well and given to B P patients @ 1.5 gr., in the morning and 1.5 grams in the evening along with in the morning @ 2.5 gr permilk
30.	<i>Phyllanthus emblica</i> ; Phyllanthaceae; Vusiri; Indian Goose berry;	for curing (or) controlling hyper tension	
31.	<i>Withania somnifera</i> ; Solanaceae; Aswagandha; Penneru;		
32.	<i>Rauwolfia serpentina</i> ; Apocynaceae; Sarpagandha; Indian snake root; and <i>Tinospora cordifolia</i> ; Menispermaceae; Tippa teega; Amrutha valli; Guduchi		
33.	<i>Centella asiatica</i> or <i>Hydrocotyle asiatica</i> ; Apiaceae; Indian penny wort; Gotu kola; Saraswathi aku.	for enhancing the memory power	Shade dried leaves fine powder of <i>Centella asiatica</i> 50 gr + Dried root fine powder of <i>Clitoria ternatia</i> 50 gr + Dried fleshy fruit pulp fine powder of emblica fruit (without inner nut in the fruit)- 50 gr., The three ingredients are mixed thoroughly and given to consume orally-- early in the morning @ 2.5 gr per 1 day, with milk, preferably with cow's milk for 2 months.
34.	<i>Clitoria ternatea</i> ; Fabaceae; sanku pusphi. <i>Phyllanthus emblica</i> ; Phyllanthaceae; Vusiri; Indian Goose berry;		

Conclusion

The revitalization of these indigenous systems can provide self-reliance in primary health care and can even contribute to the frontiers of herbal system of medicine Efforts

in this direction may provide the benefit of regional information to the global community. Phytochemical studies of above said plants need to be taken up to find out the actual ingredients that help in the process of curing this type of ailments in humans.

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References

- Anonymous, WHO traditional Medicine Strategy 2002–2005. World Health Organisation, Geneva, Switzerland. (WHO/EDM/TRM/2002.1.). 2002.
- S. Khan, Systems of medicine and nationalist discourse in India. *Social Science and Medicine* 62, 2006. 2786–2797.
- R.M. Kunwar K.P. Shrestha and R.W. Bussmann, Traditional herbal medicine in far-west Nepal: a pharmacological appraisal. *Journal of Ethnobiology and Ethnomedicine* 6, 2010. 35.
- P.A. Cox, M. Balick, The ethnobotanical approach to drug discovery. *Scientific American* 270, 1994. 82–87.
- Legris and VM. Meher – Homji, The Eastern Ghats: Vegetation and Bioclimatic aspects. Pros. Seminar on Resources development and environment in Eastern Ghats. Andhra University. Waltair. 1982. 1-7.
- S.K. Jain, The role of botanist in folklore research. *Folklore* 5(4): 1964. 145-150.
- S.K. Jain, Observations on Ethnobotany of the tribal of Central India. In: Jain, S.K. (ed.), *Glimpses of Indian Ethnobotany*. Oxford & IBH, New Delhi, 1981. pp. 193-198.
- S.K. Jain (ed.) A Manual of Ethnobotany. Scientific Publishers, Jodhpur. 1987.
- S.K. Jain Directory of ethnoveterinary plants of India. Deep publications, New Delhi. 1999.
- D.J. Chadwick and J. Marsh, Ethnobotany and the search for new drugs. John Wiley & Sons, Chichester, U.K. 1994.
- K. Hemadri, Shastravettalanum Akashistunna Girijana Vaidyam (Tribal Pharmacopoeia). Tribal Cultural Research and Training Institute, Hyderabad. 1994.
- G. Martin, Ethnobotany - A method manual. Chapman and Hall, London. 1995.
- P.Prayaga Murthy and Narasimha Rao, G.M. 2010. Unique Ethno medicinal uses of some plant species of Andhra Pradesh, India. *Journal of Phytology*, Vol: 2 (4) Pp.17-21.
- SK Jain, Dictionary of Indian Folk Medicine and Ethnobotny. Deep Publication, New Delhi.1991. [14] K.R. Kirtikar, and B.D. Basu, Indian Medicinal Plants. Vol. I – IV, periodical experts, Delhi, India. 1935.
- Peiris D.S. H.S, D.T.K.Fernado, s.p.n. n S.P.N.N.Senadeera, A.K. Chandana et al 'Mirabilis jalapa' A Folk lore Ayurvedic Medicine.
- Smilax zeylanica ; Jena, P,K. Et al (2012) *Orient pharmax-emed* 12, 123-127, Murali et al (2012) *International journal of pharmacy and pharmaceuticalsciences* 3(1) 192-195., & *Journal of drug delivery*; 8 (4) 237-243; Jul 2018; Doi 10.22270 /jddt.v8i4.1779 Dhanya shree, Arbin Ayesha et al; Narasimha Rao, G.M. and Pragaya Murty,P. 2014 Survey and documentation of some important medicinal applications of Mangrove plants of Andhra Pradesh, India. *The Journal of Ethnobiology and Traditional Medicine*. Photon 122. 842-847.
- N.V.Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2017. Application of Ethno medicine to treat bone fracture in Eastern Ghats of India, AP. *IOSR Journal of Pharmacy and Biological Sciences* 12(6):48-54.
- N.V.Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2018. Internal application of some Ethno medicinal plants to treat bone fracture in Eastern Ghats of India, AP. *IOSR Journal of Pharmacy and Biological Sciences* 13(1):34-37 DOI: 10.9790/3008-1301013437
- N.V.Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2020A. Ethnomedicinal Plants used for the Treatment of Rheumatoid Arthritis, Andhra Pradesh, India. *IOSR Journal Of Pharmacy And Biological Sciences (IOSR-JPBS)* Volume 15, Issue 2 Ser. I (Mar –Apr 2020), PP 44-52
- N.V. Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2020B. Indigenous treatments and application of Ethno medicine for treating sports injuries and other ailments. *IOSR Journal of Pharmacy and Biological Sciences* 15(2 (3)):44-57.
- N.V. Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2020C. ETHNOMEDICINAL PLANTS USED TO TREAT OSTEO ARTHRITIS FROM ANDHRA PRADESH, INDIA. *International Journal of Botany and Research (IJBR)* Vol. 10 (1): 55-68.
- N.V. Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2020D. Plant Species Utilized to Treat Skeletal Fluorosis and Fluorosis Arthritis from Eastern Ghats of Andhra Pradesh, India. *International Journal of Ayurvedic and Herbal Medicine* 10:2 (2020) 3748-3757.
- N.V. Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2020E. Survey and documentation on ethnomedicinal plants used for the treatment of osteoporosis by traditional healers in Eastern Ghats of Andhra Pradesh, India. *International Journal of Herbal Medicine* 2020; 8(3): 25-31.

- N.V. Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2020F. Traditional medicinal plants used to treat arthritis by tribal people in Eastern Ghats of Andhra Pradesh, India. *International Journal of Botany Studies*. Volume 5; Issue 3; 2020; Page No. 16-22
- N.V. Jayanth Babu, P. Prayaga Murty and G. M. Narasimha Rao. 2020G. Folk Medicinal Plants used for Treatment of Gouty Arthritis from Eastern Ghats of Andhra Pradesh, India. *The Journal of Ethnobiology and Traditional Medicine* 131 (2020) 1538-1546.
- Narasimha Rao, G.M. 2020. Flora of Mangrove Species Utilized for Ethno medicinal Practices in Gautami Godavari Estuary, Andhra Pradesh, India. In book: Medicinal Plants: Biodiversity, Sustainable Utilization and Conservation. DOI: 10.1007/978-981-15-1636-8_5
- N.V. Jayanth Babu and G.M.Narasimha Rao.2021. Ethnomedicinal Practices of Aegle marmelos in Eastern Ghats of India. DOI:10.1201/9781003100768-9. In book: The Phytochemical and Pharmacological Aspects of Ethnomedicinal Plants.
- N.V. Jayanth Babu, B.Raja Sekhar, K.S.Rani and Narasimha Raom G.M. External application of Ethno veterinary plants to treat bone fractures in domestic and pet animals of the villages in Nallamalla forest region of Eastern Ghats of AP, India. *Sch J Agric Vet Sci*, 2024, 11(3):30-37.