

Assessment of Credibility of Ethno-Veterinary Informations of Shekhawati Region of Rajasthan

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Abstract

The Shekhawati region of Rajasthan, known for its semi-arid climate and distinct cultural practices, has a rich history of traditional knowledge, particularly in the domain of ethno-veterinary practices. Ethno-veterinary medicine refers to the indigenous practices and knowledge of managing livestock health and diseases through locally available resources, passed down through generations. This study investigates the credibility of ethno-veterinary information in the Shekhawati region, analyzing the reliability and scientific validity of the practices followed by local herders, farmers, and traditional healers.

Primary data was collected through structured interviews and field surveys with local livestock keepers, traditional veterinary practitioners, and herbalists. The practices reported were classified into preventive and therapeutic categories, focusing on the use of medicinal plants, animal husbandry rituals, and natural substances. The study evaluates the consistency of these practices, the extent of their scientific support, and their effectiveness in comparison to modern veterinary practices.

The findings indicate that while many traditional practices are based on empirical knowledge passed through generations, there is a need for further scientific validation. Some practices, such as the use of specific herbs for treating livestock ailments, show promising results but require more rigorous clinical trials to confirm their efficacy. Additionally, the study highlights the challenges of preserving this knowledge amidst modernization and the diminishing role of traditional healers. It also underscores the importance of integrating traditional knowledge with modern veterinary science to develop sustainable, region-specific health management systems for livestock.

The credibility of ethno-veterinary information in Shekhawati is thus a combination of traditional wisdom and modern scientific inquiry, with potential benefits for improving the livelihoods of livestock keepers in the region. This research advocates for collaborative efforts to document, validate, and promote the role of ethno-veterinary knowledge in the conservation of indigenous practices and sustainable livestock management.

Introduction

Conventional wisdom frequently encompasses approaches that are derivative from long-term explanations that are not maintained by statistical or technical data. Folk medicine or ethno-veterinary claims constitute a significant part of this understanding. One valuable standard for evaluating the veracity of folk claims and practices is the submission of the same traditional herbal therapies in many remote places and among various tribal ethnic groups. This is known as multi-locational or multi-ethnic use. A critical literature survey of plant species, which are used in the Ethno-veterinary medicine of the study area, was done and cross-checked with existing literature and found several plant species are to be

employed in more than one locality or ethnic group. It is suggested that: 1. high credibility ranking based on frequency of reports of use seems directly related to their utility in health care systems; 2. the remaining recipes with high credibility ranking be given priority for laboratory and clinical research; and 3. more such analyses of frequency of particular medicinal use be undertaken for more plants, more diseases, and in more regions and ethnic groups in India. (Jain, 2004).

1. The following analysis of claims and the discussion are based on the criterion of multi locational and/or multi-ethnic use of certain plants in animal health care, that is, the frequency of reports from different locations about the use of a plant for a particular ailment. The objective is to highlight the prospect for further research of a few veterinary plants from the Ethno-veterinary field with folk claims for the health conditions selected for this analysis. From the literature sources, (Jain, 1991; Jain 1999; Jain & Jain 2015; Katewa *et.al.* 2010)
2. It was originate that plants having Ethno-veterinary importance from the learning area are also described by other authors' from the different locations and ethnic group. In this chapter credibility of Ethno-veterinary information are presented in table (5.1). Data presented in the table are: Botanical name & part used, Ethno-veterinary remedies described from the learning area to cure various ailments, Ethno-veterinary remedies reported by other co-workers/ literature source, state/ districts, ethnic groups, and credibility ranking points. Each plant has been given some point (P) of credibility in the scale of 1-5 based.

Table : Analysis of credibility of unrecorded ethno-veterinary plants of study area.

S. No.	Botanical name & Part Used	Ethno-veterinary remedies reported from the study area to cure various ailments.	Ethno-veterinary remedies reported by other co-workers/ literature source	States/ districts	Ethnic groups	Credibility ranking points
1	<i>Abrus precatorius</i> (Root)	Mastitis	Shah (1984)	Maharashtra (Salsette Island Bombay)	Gonda	P-2
2	<i>Abutilon indicum</i> (Seed)	Constipation	Tarafder (1983)	Bihar (Hazaribagh)	Santali	P-4
3	<i>Achyranthus aspera</i> (Root)	Stomachache	Malhotra & Moorthy (1973); Sharma <i>et al.</i> (1979)	Maharashtra (Chandrapur)	Koli	P-5
4	<i>Aerva lanata</i> (Root)	Snake bite	Jain & Tarafder (1970); Katewa <i>et al.</i> (2010)	West Bengal; Rajasthan	Santal	P-4
5	<i>Ailanthus excels</i> (Root)	Fever	Joshi (1995); Singh & Pandey (1998)	Rajasthan, India.	Grasiya	P-2
6	<i>Albizia lebbek</i> (Whole plant)	Conjunctivitis	Kumar & Chauhan (2012)	Rajasthan (Bharatpur)	Gujjar	P-2

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7	<i>Annona squamosa</i> (Leaves)	Constipation	Bhattacharjee&Tiwari (1980)	Assam (Kamrup).	Karbi	P-4
8	<i>Ampelocissus latifolia</i> (Whole plant)	Fractured bone	Joshi, <i>et al.</i> (1980); Saxena (1986)	Gujarat; MP	Dang	P-2
9	<i>Amaranthus spinosus</i> (Whole plant)	Galactagogues	Buragohin (2008); Sharma&Sharma (2010); Bondya <i>et al.</i> (2006); Nath <i>et al.</i> (2007); Sayed <i>et al.</i> (2007)	Assam (Tinsukia & Sonapur); Chhattishgarh; Assam (Darrang); Maharashtra (Dahanu).	Warlis (Assam)	P-5
10	<i>Asparagus racemosus</i> (Whole plant)	Galactagogues	Maheshwari & Singh (1984); Sebastian (1984); Singh & Maheshwari (1983); Singh, <i>et al.</i> (1987); Masheshwari <i>et al.</i> (1986); Masheshwari <i>et al.</i> (1980).	UP (Garwal); Rajasthan; UP (Varanasi); UP (Gorakhpur); MP (Bastar)	Bhoxa	P-5
11	<i>Azadiracta indica</i> (Whole plant)	Leucorrhoea	Shukla <i>et al.</i> (2013); Shukla <i>et al.</i> (2009)	Uttar Pradesh&Chhattisgarh (Achanakmar–Amarkantak Biosphere Reserve)	Halbaa	P-5
12	<i>Boerhavia diffusa</i> (Roots& Leaves)	Urinary tract infections	Tripathi&Sikarwar (2013); Kumar Deasi (2014).	MP (Chitarkoot); Gujarat	Bhoxa	P-3
13	<i>Calligonum polygonoides</i> (Whole plant)	Urinary problems	Shekhawat & Anand (1984).	Rajasthan (Indian Desert)	Bheel	P-2
14	<i>Cannabis sativa</i> (Whole plant)	Leucorrhoea	Kumar <i>et al.</i> , (2013).	Uttar Pradesh, India.	Tharu	P-2
15	<i>Capparis decidua</i> (Whole plant)	Bone fracture	Katewa&Jain (2006); Upadhyay <i>et al.</i> (2010); Sharma <i>et al.</i>	Rajasthan (Udaipur); Eastern Rajasthan);&Gujarat	Grasiya	P-5

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			(2007), Katewa <i>et al.</i> (2001).	(Dang Region)		
16	<i>Capsicum annum</i> (Fruits)	Tonsillitis	Nagendra & Abraham. (1984).	Kerala	Nayadis	P-4
17	<i>Cassia fistula</i> (Pods)	Flatulence	Upadhya <i>et al.</i> (2009).	Karnataka	Jenu kuruba	P-4
18	<i>Carissa congesta</i> (Whole plant)	Fractured bone	Joshi <i>et al.</i> (1980).	Gujarat	Dang	P-2
19	<i>Cassia tora</i> (Leaves & seeds)	Lumpy virus infection	Shah (1984); Menon & G.V. Gopal (1981); Jain (1965); Jain (1981); Maheshwari, <i>et al.</i> (1986).	Gujarat; MP (Bastar); Central India; Garwal; UP (Mirzapur)	Bhoxa	P-5
20	<i>Celosia argentea</i> (Roots)	Food poisoning	Katewa <i>et al.</i> (2010); Shashikanth <i>et al.</i> (2011).	Rajasthan; AP	Thakar	P-4
21	<i>Chenopodium album</i> (Leaves)	wounds	Katewa <i>et al.</i> (2010)	Rajasthan	Gurjar	P-2
22	<i>Celastrus paniculata</i> (Seeds)	Treat paralysis	Sebastian & Bhandari (1984).	Rajasthan (Mount Abu)	Grasiya	P-2
23	<i>Citrullus colocynthis</i> (Fruits)	Constipation	Rani GM. (2014); Kumar <i>et al.</i> (2003); Upadhyay <i>et al.</i> (2007).	MP (Panchmari hills); Rajasthan (Churu)		P-3
24	<i>Cleome viscosa</i> (Whole plant)	Body-ache	Singh & Singh (2009), Chander <i>et al.</i> (2014).	UP (Chandauli); Andaman & Nicobar Islands.	Nicobarese	P-5
25	<i>Cocculus hirsutus</i> (Leaves)	Dog-bite	Katewa <i>et al.</i> (2010).	Rajasthan	Grasiya	P-2
26	<i>Cocculus pendulus</i> (Stem)	Mastitis	Katewa <i>et al.</i> (2010).	Rajasthan	Grasiya	P-2
27	<i>Commelina benghalensis</i>	Eye problems	Bhatia <i>et al.</i> (2014).	J&K (Udhampur)	Dogras	P-4

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	(Leaves)					
28	<i>Cordia dichotoma</i> (Leaves)	Diarrhoea	Upadhyay <i>et al.</i> (2010)	Rajasthan	Grasiya	P-2
29	<i>Cosmostigma racemosa</i> (Pods)	Gastroenteritis	Katewa <i>et al.</i> (2010).	Rajasthan	Grasiya	P-2
30	<i>Crinum asiaticum</i> (Tubers/bulbs)	Carbuncles	Radhakrishnan <i>et al.</i> (1996).	Kerala	Chiru	P-4
31	<i>Cucumis callosus</i> (Fruits)	Diarrhoea	Katewa <i>et al.</i> (2010)	Rajasthan	Grasiya	P-2
32	<i>Curcuma longa</i> (Rhizome)	Mastitis	Katewa <i>et al.</i> (2010); Rajkumari <i>et al.</i> (2014); Bhatt (2001); Shah (2008); Jadeja (2006); Phondani (2010).	Rajasthan; Manipur; Gujarat; Uttarakhand (Almora); Gujarat (Porbandar); Uttarakhand,	Chiru	P-5
33	<i>Cuscuta reflexa</i> (Whole plant)	Rheumatic pain	Katewa <i>et al.</i> , (2010).	Rajasthan	Grasiya	P-2
34	<i>Datura innoxia</i> (Whole plant)	Mastitis	Katewa <i>et al.</i> (2010); Katewa&Jain (2006)	Rajasthan	Grasiya	P-2
35	<i>Dendrophthoe falcate</i> (Whole plant)	Vulvo-vaginal uterine-prolapse	Katewa <i>et al.</i> (2010); Katewa&Jain (2006)	Rajasthan	Grasiya	P-2
36	<i>Desmostachyabipinnata</i> (Whole plant)	Dysentery	Katewa <i>et al.</i> (2010)	Rajasthan	Grasiya	P-2
37	<i>Dichrostachys cinerea</i> (Seeds)	Hypogalactia	Katewa <i>et al.</i> (2010); Katewa&Jain (2006)	Rajasthan	Grasiya	P-2
38	<i>Digitaria adscendens</i> (Seeds)	Constipation	Hemadri&Rao (1983)	Rajasthan		P-2
39	<i>Euphorbia caducifolia</i> (Whole plant)	Vulvo-vaginal uterine-	Katewa <i>et al.</i> (2010).	Rajasthan	Grasiya	P-2

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		prolapse				
40	<i>Euphorbia hirta</i> (Whole plant)	Diarrhoea	Bhaat <i>et al.</i> (2001)	Gujarat		P-2
41	<i>Ficus racemosa</i> (Whole plants)	Snake- bite	Katewa <i>et al.</i> (2010).	Rajasthan	Grasiya	P-1
42	<i>Gloriosa superba</i> (Whole plants)	foot and mouth disease	Katewa <i>et al.</i> (2010), Ponnusamy <i>et al.</i> (2009).	Rajasthan		P-1
43	<i>Holoptelea integrifolia</i> (Leaves)	Eczema	Sharma <i>et al.</i> (2013), Upadhyay <i>et al.</i> (2010).	Uttarakhand; Rajasthan	Gujjar	P-2
44	<i>Leptadenia pyrotechnica</i> (Stem)	Flatulence	Kumar <i>et al.</i> (2003).	Rajasthan (Bikaner)		P-2
45	<i>Luffa cylindrica</i> (Fruits)	Flatulence	Sharma&Malhotra (1984)	Maharashtra, India.	Gond	P-3
46	<i>Mangifera indica</i> (Bark)	Diarrhoea	Varghese (1996); Kumar & Desai (2014); Chander <i>et al.</i> (2014); Harsha <i>et al.</i> (2002), Rout & Panda (2010); Gupta <i>et al.</i> (2010); Datta <i>et al.</i> (2014).	Andaman and Nicobar Island; Karnataka; Orissa; Maharashtra (Bhandara).	Kunabi & Gond	P-5
47	<i>Moringa oleifera</i> (Leaves&Stem)	Lactation	Parveen (2009); Sri SB&Reddi TVVS (2011)	Andhra Pradesh (Kurnool); Andhra Pradesh; (Godavari)	Gond	P-5
48	<i>Mucuna pruriens</i> (Whole plant)	Oestrus induction	Katewa (2010); Katewa&Jain. (2006).	Rajasthan	Grasiya	P-2
49	<i>Nerium oleander</i> (Roots)	Eczema	Katewa <i>et al.</i> , (2001).	Rajasthan (Rajsamand)	Grasiya	P-2
50	<i>Nicotiana tabacum</i> (Leaves)	Foot diseases	Katewa <i>et al.</i> (2010), Jadeja <i>et al.</i> (2006).	Rajasthan; Gujarat (Porbandar)	Grasiya	P-3
51	<i>Nytanthes arbor-tristis</i>	Colic	Sri SB&Reddi TVVS.	Andhra Pradesh	Bagata	P-2

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	(Leaves)		(2011).	(Kurnool)		
52	<i>Ocimum americanum</i> (Whole plant)	Leucorrhoea	Katewa <i>et al</i> (2010).	Rajasthan	Grasiya	P-2
53	<i>Ocimum tenuiflorum</i> (Whole plant)	Cancer	Bhatia H, Sharma YP&Kumar K. (2014).	Udhampur, J&K, India.		P-2
54	<i>Piper betel</i> (Leaves)	Flatulence	Katewa <i>et al.</i> (2010)	Rajasthan	Grasiya	P-2
55	<i>Prosopis cineraria</i> (Leaves)	Mouth ulcer	Katewa <i>et al.</i> (2010).	Rajasthan	Grasiya	P-2
56	<i>Prosopis juliflora</i> (Leaves)	Wounds	Katewa <i>et al.</i> (2001)	Rajasthan (Rajsamand)	Grasiya	P-2
57	<i>Sorghum vulgare</i> (Seed)	Disposal of placenta	Katewa <i>et al.</i> (2010); Rani (2014)	Rajasthan; Tamilnadu (Pachamalai Hills)	Grasiya	P-3
58	<i>Spermacoce stricta</i> (Whole plant)	Vulvo-vaginal disorders	Katewa <i>et al.</i> (2010).	Rajasthan, India.	Grasiya	P-2
59	<i>Terminalia bellirica</i> (Fruits)	Diarrhoea	Katewa& Jain (2006); Sharma & Maheshwari (2005); Gairola <i>et al.</i> 2013); Bharati & Kumar (2014); Desale <i>et al.</i> (2013); Murugesan <i>et al.</i> (2008); Sen& Behera (2014).	Rajasthan; Himachal Pradesh (Kangra); Uttarakhand (Haridwar); Maharashtra (Pune); Coimbatore	Bhoxa	P-5
60	<i>Terminalia chebula</i> (Fruits)	Intestinal disorders	Rajendran <i>et al.</i> (2002); Ayyanar & Ignacimuth (2011).	Tamil Nadu (Virudunagar); Western Ghats	Valaya & Kani	P-5
61	<i>Tinospora cordifolia</i> (Whole plant)	Foot and mouth disease	Katewa <i>et al.</i> (2010).	Rajasthan		P-2
62	<i>Tridax procumbens</i> (Leaves)	Diarrhoea	Sebastian & Bhandari. (1984).	Rajasthan (Mount Abu)	Grasiya	P-2

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63	<i>Trigonella foenum-graecum</i> (Whole plants)	Lactation	Rajendran <i>et al.</i> (2002).	Tamil Nadu (Virudunagar)		P-3
64	<i>Triumfetta rotundifolia</i> (Roots)	Neck sores	Jain & Tarafder. (1970)	Jharkhand	Santals	P-3
65	<i>Vitex negundo</i> (Roots)	stomachs pain	Dey A, De JN. (2012).	West Bengal (Purulia)		P-3
66	<i>Xanthium strumarium</i> (Leaves)	Maggots	Vijayan <i>et al.</i> (2007)	Arunachal Pradesh	Santals	P-3
67	<i>Ziziphus xylopyra</i> (Bark)	Bronchial diseases	Jain & Tarafder. (1970).	Jharkhand	Santals	P-3
68	<i>Ziziphus mauritiana</i> (Seed)	Vulvo-vaginal-uterine prolapse.	Kumar & Bharati. (2013).	UP (Bareilly)		P-2
69	<i>Zingiber officinale</i> (Rhizome)	Stomachache	Henry <i>et al.</i> (1996); Kagyung (2010); Vijayan <i>et al.</i> (2007); Namsa <i>et al.</i> (2011).	Western Ghats; Arunachal Pradesh; Kerala; & Arunachal Pradesh;	Adi, Kani & Monpa	P-5

Result & Discussion:

The purpose of this study was to extract out some plant species having high credibility which can be used for the further phyto-therapeutic, phytochemical and pharmacological studies and finally for bio-prospecting. The plant getting P- 3 or more point can be cast-off for more research, these are as follows:

Plant getting P-5 credibility ranking ara: From the present study these 13 plant species viz. *A. aspera*, *A. spinosus*, *A. racemosus*, *A. indica*, *C. decidua*, *C. tora*, *C. viscosa*, *C. longa*, *M. indica*, *M. oleifera*, *T. bellirica*, *T. chebula*, and *Z. officinale* are getting P-5 ranking.

Plant getting P-4 credibility ranking ara: From the present study 8 plant species viz. *A. ndicum*, *A. lanata*, *A. seqamosa*, *C. annum*, *C .fistula*, *C. argentea*, *C. benghalensis*, and *Crinum asiaticum* are getting P-4 ranking.

Plant getting P-3 credibility ranking ara: From the present study 10 plant species viz. *B. diffusa*, *C. colocynthis*, *L.cylindrical*, *N.tabacum*, *S. vulgare*, *T.foenum-graecum*, *T. rotundifolia*, *V. negundo*, *X.strumarium* and *Z. xylopyra*

Analysis of 69 plant species shows that 31 plant species have multi-locational and multi-ethnic use, which can be used for the further phytochemical, pharmacological and phytotherapeutic studies. Lewis (2003) reported through his laboratory experiments that plants reported by the folk as antimalarials demonstrated far more operative than without such ethno medicinal reports. Lewis WH 2003. Pharmaceutical discoveries based on ethnomedicinal plants (1985 to 2000).

Reference

1. Jain, S. K. (1991). *Dictionary of Indian Folkmedicine and Ethnobotany*. Deep Publications.
2. Bhattacharjee, S., & Tiwari, K. C. (1980). Folklore medicine from district Kamrup, Assam. *Bulletin of Medico-ethnobotanical Research*, 1, 447-460.
3. Jain, S. K., & Sumita, S. (1999). *Dictionary of ethnoveterinary plants of India*. Deep publications.
4. Katewa, S. S., Galav, P. K., & Jain, A. (2010). *Traditional Folk Veterinary Medicines*. Scientific Publishers.
5. Malhotra, S. K., & Moorthy, S. (1973). Some useful and medicinal plants of Chandrapur district (Maharashtra State). *Bulletin of Botanical Survey of India*, 15, 13-21.
6. Jain, S. K., & Tarafder, C. R. (1970). Medicinal plant lore of the Santals. A revival of P.O. Bodding's work. *Economic Botany*, 24, 241-278.
7. Joshi, P. (1995). *Ethnobotany of the Primitive Tribes in Rajasthan*. Printwell.
8. Kumar, S., & Chauhan, A. K. S. (2012). Ethnomedicinal plants used by Gujjars in Bharatpur, Rajasthan. *Ethnobotany*, 24, 119-122.
9. Shah, G.L. (1984). Some economically important plants of Salsette Island near Bombay. *Journal of Economic and Taxonomic Botany*, 5, 753-765.
10. Tarafder, C.R. (1983). Traditional medicinal plants used by the tribals of Hazaribagh districts, Bihar - plants used in abortion. *Journal of Economic Taxonomic Botany*, 4, 891-896.
11. Joshi, M. C., Patel, M. B., & Mehta, P. J. (1980). Some folk medicines of Dangs, Gujarat State. *Bulletin of Medico-Ethnobotanical Research*, 1, 301-317.
12. Singh, K.K., & Maheshwari, J.K. (1983). Traditional phytotherapy amongst the tribals of Varanasi district, Uttar Pradesh. *Journal of Economic Taxonomic Botany*, 4, 829-838.
13. Sayed, N.Z., Deo, R., & Mukundan, U. (2007). Herbal remedies used by Warlis of Dahanu to induce lactation in nursing mothers. *Indian Journal of Traditional Knowledge*, 6(4), 602-605.
14. Shukla, A.N., Sikarwar, R.L.S., & Singh, K.P. (2009). Observations of plants of Achanakmar-Amankantak Biosphere Reserve and their ethnomedicinal uses. In P.C. Trivedi (Ed.), *Indigenous Ethnomedicinal Plants*, Pointer Publisher, Jaipur, pp. 157-171.
15. Shukla, A.N., Srivastava, S., & Rawat, A.K.S. (2013). A survey of traditional medicinal plants of Uttar Pradesh (India) - used in treatment of infectious diseases. *Nature and Science*, 11(9), 24-36.
16. Tripathi, M., & Sikarwar, R.L.S. (2013). Some traditional herbal formulations of Chitrakoot region, Madhya Pradesh, India. *Indian Journal of Traditional Knowledge*, 12(2), 315-320.
17. Shekhawat, G.S., & Anand, S. (1984). An ethnobotanical profile of Indian Desert. *Journal of Economic and Taxonomic Botany*, 5, 572-576.
18. Kumar, S., & Chauhan, A. K. S. (2012). Ethnomedicinal plants used by Gujjars in Bharatpur, Rajasthan. *Ethnobotany*, 24, 119-122.
19. Kumar, S., Goyal, S., & Parveen, F. (2003). Ethno-medico-botany of household remedies of Kolayat Tehsil in Bikaner district, Rajasthan. *Indian Journal of Traditional Knowledge*, 2(4), 357-365.

20. Kumar, S., Goyal, S., & Parveen, F. (2004). Ethno-veterinary plants in Indian arid zone. *Ethnobotany*, 16, 91-95.
21. Kumar, V., & Desai, B. S. (2014). Indigenous knowledge of wild plant species of South Gujarat. In S. Kumar (Ed.), *Ethnobotanical studies in India* (pp. 303-310). Deep Publications.
22. Kumar, Yadav, D. (2007). Ethno-veterinary practices: A boon for improving indigenous cattle productivity in Gaushalas. *Livestock Research for Rural Development*, 19(75).
23. Katewa, S. S., & Jain, A. (2006). *Traditional Folk Herbal Medicines*. Apex Publishing House.
24. Katewa, S. S., Choudhary, B. L., Jain, A., & Takhar, H. K. (2001). Some plants in folk medicine of Rajsamand district (Rajasthan). *Ethnobotany*, 13, 129-134.
25. Jain, S. K. (1965). Medicinal plant lore of the tribals of Bastar. *Economic Botany*, 19, 236-250.
26. Jain, S. K. (1981). Observations on ethnobotany of the tribals of central India. In S. K. Jain (Ed.), *Glimpses of Indian Ethnobotany* (pp. 193-198).
27. Jain, S. K. (2003). Ethnoveterinary recipes in India: A botanical analysis. *Ethnobotany*, 15, 23-33.
28. Henry, A. N., Hosagoudar, V. B., & Kumar, R. K. (1996). Ethno-medico-botany of the southern Western Ghats of India. In S. K. Jain (Ed.), *Ethnobiology in human welfare* (pp. 173-180). Deep Publications.
29. Kumar, R., & Bharati, K. A. (2013). New claims in folk veterinary medicines from Uttar Pradesh, India. *Journal of Ethnopharmacology*, 146(2), 581-593. <https://doi.org/10.1016/j.jep.2013.01.030>
30. Parveen, S.N. (2009). Plants traditionally used as galactogogue in Nallamalais of Kurnool district of Andhra Pradesh. *Journal of Economic and Taxonomic Botany*, 33: 324-327.
31. Rajendran, S.M., Sekar, K.C., & Sundaresan, V. (2002). Ethnomedicinal lore of Valaya tribals in Seithur Hills of Virudungar district, Tamil Nadu, India. *Indian Journal of Traditional Knowledge*, 1(1): 59-71.