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REVIEW ARTICLE

Folk Medicinal Plants Used In the Treatment of Asthma in Rayalaseema Region of Andhra Pradesh, India

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ABSTRACT

The present study highlights the medicinal plants used for treating asthma by Btribal people of Rayalaseema region of Andhra Pradesh. This paper consist the traditional uses of 54 plant species belonging to 50 genera and 39 families that act as antidotes against asthma. The plant and their parts used as crude drugs as suggested by tribal and non – tribal herbalists are recorded in the study.

Key words: Folk Medicinal plants, Treatment, Asthma, Rayalaseema region, Andhra Pradesh.

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INTRODUCTION

Since the beginning of civilization, people have used plants for different purposes in their daily life, plants and human beings are so intimately linked and discussion of human life on this planet would not be complete without a look at the role of plants. The traditional medicine like Chinese, Ayurvedic, Unani and Biomedicine are very effective particularly in rural areas for the treatment of various ailments. In spite of the advent of the modern medicines, tribal populations are still practicing the art of herbal medicine. Reports of [1-2] revealed that more than 80% of the world populations rely on herbal and traditional medicine. It was estimated that plant species of 2, 500 have been utilized for medicinal purposes and more than 6000 plants are widely used in folk and herbal medicine, [3]. Traditional knowledge forms the basis for innovations of novel drugs for the benefit of the humanity. Traditional remedies together with folklore system based mainly on phytotherapy. Documenting the indigenous knowledge through ethnobotanical studies is important for the conservation of biological resources as well as their sustainable utilization. There is an urgent need to inventories and record all ethnobotanical information among the diverse ethnic communities before the traditional cultures are lost; who should make use of this knowledge and what part of knowledge should be used are certainly within the purview of the tribals [4].

Rayalaseema is a land-locked region with an area of 69,043Km² accounting for 25% of the total geographical area of Andhra Pradesh. The region by its location extends approximately from 12^o 3 N to 16^o 15 North Latitude and 76^o 55 E to 79^o 55 East Longitude. Geographically the Rayalaseema region forms the south and eastern Indian peninsular. It includes within its fold the districts of Anantapur, Chittoor, Kadapa and Kurnool. It is bounded on the south by the state of TamilNadu and Karnataka, on the west by Karnataka state, on the north by Telangana region and on the east by coastal region of Andhra Pradesh. The Rayalaseema region has no coast line and is accessible only by land. The region lies mostly at an altitude of about 300 to 700 meters above mean sea level. Rayalaseema area is inhabited by a large number of tribals like Yanadis, Chenchus, Irulas, Yerukalas, Sugalis, Koyas, Reddi Dhoras, Konda Kapu, Kattunayaka, Manne Dora and Godabas, who possess good knowledge of home remedies. By enumeration studies it is known that this region is a rich source of medicinal plants. The villages and the tribal localities have 80 per cent of traditional healers who treat many human ailments. Ethnobotanically this region remains under explored and no comprehensive account especially on the folk-lore survey is available [5-6] Although studies have been taken up for documentation of flora in this region, there was no sufficient attempts on applications of Asthma (Asthma is the common chronic inflammatory disease of the airways characterized by variable and recurring symptoms, reversible airflow obstruction and bronchospasm) from various plant species as medicinal remedy. The antiasthmatic properties of the plants of this region has also not been adequately codified. Thus, in the present paper, an elaborative account of the plants which are used as antiasthmatic, is reported.



MATERIALS AND METHODS

The various methods used for the study of anti asthmatic plants of Rayalaseema region, Andhra Pradesh, India, were essentially the same as described [7-11]. The main emphasis was given to intensive field work in selected tribal pockets. The present study was under taken during the years 2008 to 2011. It is the outcome of intensive field trips made in the interior tribal pockets of the region. Information was gathered about the plants used by the tribal people. The field trips were planned in such a way so as to cover the selected tribal pockets in every month of a year. Each field trip was of 2-3 days duration covering 2-5 pockets in a day.

Generally the tribal people are shy and afraid of new persons and also maintain secrecy about certain information like ethno-phyto medicinal practices. So initially they were reluctant to give any information. Hence the first field trip of the study in the area was completely devoted to acquaint with the local chiefs, priests, Vaidyas, headmen and other villagers. On subsequent field visits information was gathered and documented. Gradually by maintaining intimacy with them collected information on antiasthmatic medicinal practices by the aborigines and others. Following types of informants were chosen by selected sampling and random sampling methods.

- The tribal doctors (Vaidyas)
- Village headmen
- Tribals, those who are collecting timber, fuel.
- The interpreters and educated tribal people.
- Tribal people working in the fields.
- Tribal people in weekly shandies.

Decoction, Drops, Extract, Fomentation, Fresh Juice, Paste, Pills, Plaster, Poultice, Powder etc forms of drugs used by tribal people and vaidyas. Discussions were made at times with local chiefs, priests and herbal doctors not only for gathering information but also for confirmation of the uses of same plant recorded from different informants at different places. Each plant was critically studied and identified with the help of Flora of British India [12], "Flora of the Presidency of Madras" [13], using the field observations. The identifications were later confirmed with the help of Flora of Andhra Pradesh [14-15] forest flora of Andhra Pradesh [16] and by comparison with authentic specimens in the Sri Venkateswara University.

RESULTS AND DISCUSSION

In the present study a list of 54 plant species belonging to 50 genera and 39 families were used as folk medicine for asthma. Of these 54 species, 50 are dicots, 4 (*Cynodon dactylon*, *Curculigo orchoides*, *Zingiber capitatum* and *Zingiber officinale*) are monocots respectively. 28 (Agavaceae, Amarillidaceae, Aristolocaceae, Apocynaceae, Balanitaceae, caesalpiniaceae, Casurinaceae, Euphorbiaceae, Convolvulaceae, Combretaceae, liliaceae, Loranthaceae, Mimosaceae, Nyctanthaceae, Papaveraceae, Ranunculaceae, Poaceae, Piperaceae, Polygonaceae, Portulacaceae, Rubiaceae, Rutaceae, Salvadoraceae, Scropulariaceae,

Soilanaeae, sapotaceae, Vitaceae and Verbenaceae) are monotypic, viz., representing only by one species. The remaining families Malvaceae, Acanthacea, Amarantaceae, Oxalidacea, Cucurbitaceae, Moraceae, Anacardiaceae, Zinziberaceae representing 2 species each and Asteraceae, Asclepiadaceae and Lamiaceae represents each 3 species respectively. List of plant species are used for asthma are given alphabetically, name of the plant species, family, local name, part used (Table-1). The utilization pattern of the species indicated that roots of 7 (13%), rhizome of 3(5%), tuber of 2(4%), stem of 2(4%), leaves of 18(33%), wood & bark of 1(2%), whole plant of 4(15%), stem & leaves of 1(2%), fruits of 4(7%), bark of 2 (4%) seeds 2(4%) fruits and leaves of 1(2%), latex of 1(1) and aerial parts of 2(3%) were used are presented in Fig. 1. Despite various papers that have been conducted on the medicinal plants of South India [17-20], the medicinal use of plants of Andhra Pradesh to treat asthma had been examined in various parts of Andhra Pradesh except Rayalaseema region. Some species mentioned by tribal healers for the treatment of asthma are known to be used in the preparation of popular Ayurvedic medicines in clinical settings and data are available for some species [21]. Among such plants are *Adhatoda vasica*, *Terminalia chebula* and *Clerodendrum serratum*. *Adhatoda vasica* is extensively used by Natuvaidyulu as well as by Ayurvedic physicians due to its bronchodilatory activity, either singly [22] or in combinations [23].

Fig.-1 Plant parts used in treatment of asthma

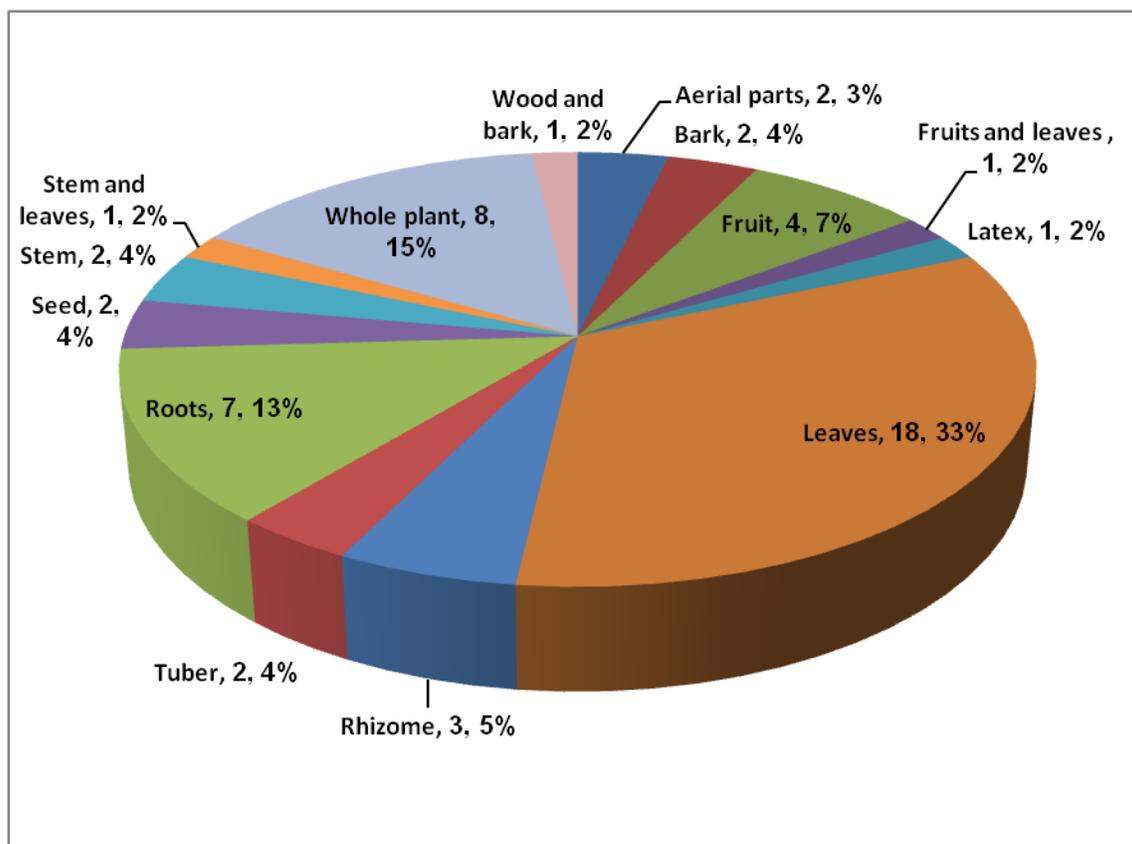


Table-1: The Plants used for the treatment of Asthma



S.No	Name of the species	Family	Local name	Part used
1	<i>Abutilon crispum</i> (L.) Medicus.	Malvaceae	Erri Benda	Leaves
2	<i>Abutilon indicum</i> (L.) Sweet.	Malvaceae	Thutturabenda	Seed
3	<i>Achyranthes aspera</i> L.	Amaranthaceae	Uttareni	Whole Plant
4	<i>Adathoda vasica</i>	Acanthaceae	Addasaram	Leaves
5	<i>Aerva lanta</i> Linn	Amarantaceae	Kondapindi kura	Aerial parts
6	<i>Ageratum conyzoides</i> L	Asteraceae	Visamustih	Leaves
7	<i>Argemone mexicana</i>	Papaveraceae	Balu rakkasi	Stem
8	<i>Aristolochia indica</i> L	Aristolochiaceae	Nalla eswari	Roots
9	<i>Asclepias curassavica</i> L	Asclepidaceae	Jilledu mandara	Roots
10	<i>Asystasia gangetica</i>	Acanthaceae	Tellamokka	Leaves
11	<i>Azima tetracantha</i> Lam	Salvadoraceae	Tella uppi	Leaves
12	<i>Bacopa monnieri</i> Wettst	Scrophulariaceae	Brahmi	Whole Plant
13	<i>Balanitis aegyptica</i> (L.) Delile	Balanitaceae	Gara	Roots
14	<i>Biophytum nervifolium</i> Thw	Oxalidaceae	Jalapuspa	Leaves
15	<i>Cassia absus</i> L	Caesalpiniaceae	Chanupala vittulu	Leaves
16	<i>Casuarina equisetifolia</i> Linn	Casuarinaceae	Sarugudu	Wood, Bark
17	<i>Chlorophytum laxum</i> R. Br.	Liliaceae	Dumpateega	Tuber
18	<i>Cissus quadrangularis</i> L	Vitaceae	Nalleru	Stem
19	<i>Clematis smilacifolia</i> Wall	Ranunculaceae	Pedutivva	Leaves
20	<i>Clerodendrum serratum</i> Linn	Verbenaceae	Gunta Barangi	Roots
21	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Kakidonda	Tuber
22	<i>Curculigo orchioides</i> Gaertn	Amaryllidaceae	Nelathadi	Rhizomes
23	<i>Cynodon dactylon</i>	Poaceae	Garika	Whole Plant
24	<i>Dendrophthoe falcate</i> (L. f.)	Loranthaceae	Bajinika	Bark
25	<i>Eclipta alba</i> Linn	Asteraceae	Guntakalagara	Leaves
26	<i>Euphorbia hirta</i>	Euphorbiaceae	Pacchabottu	Aerial parts
27	<i>Ficus bengalensis</i> Linn	Moraceae	Marri	Bark
28	<i>Ficus racemosa</i> Linn.	Moraceae	Medi	Latex
29	<i>Hemidesmus indicus</i> R.Br	Asclepiadaceae	Sugandapala	Roots
30	<i>Lannea coromandelica</i> Merr.	Anacardiaceae	Gumpena	Whole Plant
31	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Tella tummi	Leaves
32	<i>Manilkara hexandra</i> Dubard.	Sapotaceae	Pala chettu	Leaves
33	<i>Mimosa pudica</i> L	Mimosaceae	Attipatti	Leaves
34	<i>Momordica dioica</i>	Cucurbitaceae	Angakara	Fruits & leaves
35	<i>Nyctanthes arbortristis</i>	Nyctaginaceae	Parijatham	Stem & leaves
36	<i>Ocimum tenuiflorum</i> Linn	Lamiaceae	Tulasi	Leaves
37	<i>Orthosiphon rubicundus</i> Benth.	Lamiaceae	Nelatappidi	Leaves
38	<i>Oxalis corniculata</i> L	Oxalidaceae	Pulichinta	Whole Plant
39	<i>Paederia foetida</i> L	Rubiaceae	Gandha badulia	Leaves
40	<i>Piper betel</i> Linn	Piperaceae	Tamalapaku	Leaves
41	<i>Polygala elongata</i> Willd	Polygalaceae	Akumokka	Roots
42	<i>Portulaca quadrifida</i> L	Portulacaceae	Sannapappukura	Whole Plant
43	<i>Rauvolfia serpentina</i> (L.) Benth. ex	Apocynaceae	Sarpagandi	Roots
44	<i>Rivea hypocratoriformis</i> (Choisy.	Convolvulaceae	Bodditeega	Whole Plant
45	<i>Sansevieria roxburghiana</i> Schult	Agavaceae	Seganara	Whole Plant
46	<i>Solanum nigrum</i> Linn	Solanaceae	Kamanchi	Fruit
47	<i>Sphaeranthus indicus</i> Kurz	Asteraceae	Bodasaram	Leaves
48	<i>Spondias pinnata</i> Linn.f	Anacardiaceae	Adavi mamidi	Seed

49	<i>Terminalia bellerica (Gaertn.) Roxb</i>	Combretaceae	Tani	Fruit
50	<i>Terminalia chebula Retz</i>	Combretaceae	Karaka	Fruit
51	<i>Tylophora indica (Burm. f.) MeIT</i>	Asclepiadaceae	Verripala	Leaves
52	<i>Zanthoxylum rhetsa (Roxb.) DC</i>	Rutaceae	Rhetsa	Fruit
53	<i>Zingiber capitatum Roxb</i>	Zinziberaceae	Allam	Rhizomes
54	<i>Zingiber officinale Thw</i>	Zinziberaceae	Bomma kachikai	Rhizomes

CONCLUSION

This type of studies may provide valuable information to biochemists and pharmacologists in screening of individual species and their phyto- constituents to accelerate the drug discovery and development process for the treatment of asthma.

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