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Traditional knowledge of medicinal plants used to cure respiratory diseases in Krishna District of Andhra Pradesh, India.

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Abstract
The present study documents the traditional knowledge of medicinal plants that are in use for Respiratory ailments prevailing in Krishna district of Andhra Pradesh, India. Ethno medicinal uses of 23 plant species along with their botanical name, vernacular name, family name and mode of administration are presented. They belong to 21 genera and 16 families. These plants used to cure different types of respiratory diseases. The study emphasizes the potentials of the ethnobotanical research and the need for the documentation of traditional knowledge pertaining to the medicinal plant utilization for the greater benefit of mankind.

Keywords: Traditional medicinal plants, respiratory problems, rural people, Krishna

1. Introduction
Ethnobotanical use of plants has been known since ancient time and Ethnomedicine which is a subfield of Ethnobotany or medical anthropology is receiving great attention in recent years throughout the world [1]. The practice of Ethno medicine is a complex multi-disciplinary system constituting the use of plants, spirituality and the natural environment and has been the source of healing for people for millennia [2]. In India the native people are exploiting a variety of herbals for effective curing of various ailments. The plant parts used, preparation and administration of drugs vary from one place to other [3].
Up to 70% of the rural population still depends on plant resources in their vicinity for healthcare and other necessities of life. Lack of primary healthcare centers and transportation facilities, prohibitive cost of treatments, side effects of several allopathic drugs have led to increased emphasis on the use of plant materials as a source of medicines for a wide variety of human ailments [4]. The knowledge of herbal medicines gradually perishes, although some of the traditional herbal men are still practicing the art of herbal healing effectively [5]. However, only 7,000-7,500 species are used for their medicinal values by traditional communities in India [2]. Urbanization and development activities have resulted in the decline of interest in traditional culture as well as natural vegetation in India [6]. Forest degradation process adversely affected the resource of medicinal plants. The rural poor, whose dependence on these products is very heavy, are the worst sufferers. The problems are surrounded by market demand driven harvesting without any concern for representation and conservation [7].
Unfortunately, much of the ancient knowledge and many valuable plants are being lost at an alarming rate. Many valuable plants are under the verge of extinction. It is estimated that 10% of all plant species are currently endangered in India [8]. Consequently, there is an urgent need to record and preserve is completely lost [6]. The present study deals with the medicinal plants of Krishna district which are used to cure various gastro intestinal problems of rural people in the area.

2. Materials and Methods
2.1 Study area
The study area Krishna district of the coastal region of A.P, India is located between 26 8` N 79 -23`E. The Krishna district occupies an area of 8,727 square kilometers (3,370 sq mi), comparatively equivalent to Corsica. The Boundaries of the district are East Bay of Bengal and West Godavari district West Guntur and Nalgonda districts North Khammam district South Bay of Bengal.

The district is divided into upland and the delta area. The climatic conditions of the district consist of extremely hot summers and moderately hot winters and may be classified as tropical. The period starting from April to June is the hottest. The annual rainfall in the region is about 1028 mm and is contributed to by the Southwest monsoon. Three types of soils viz., Black Cotton (57.6%), Sand, clay loams (22.3%) and Red loams (19.4%).The forest occupy only 9% of the total district area. The main hill range of the district known as Kondapalli runs between Nandigama and Vijayawada with a length of about 24 Kms. The other impart hills are Jammalavoidurgam, Mogalrajapuram and Indrakiladri hills. On the Indrakiladri hills at Vijayawada stands the famous temple of Kanaka Durga. Owing to its undulating topography and severe drought conditions, the land has a number of medicinally important plants with great ethnomedicinal properties used for the treatment of various ailments by the local population. Krishna district has recorded a literacy rate of 70.03. The district is well advanced in the field of education. (Fig. 1).

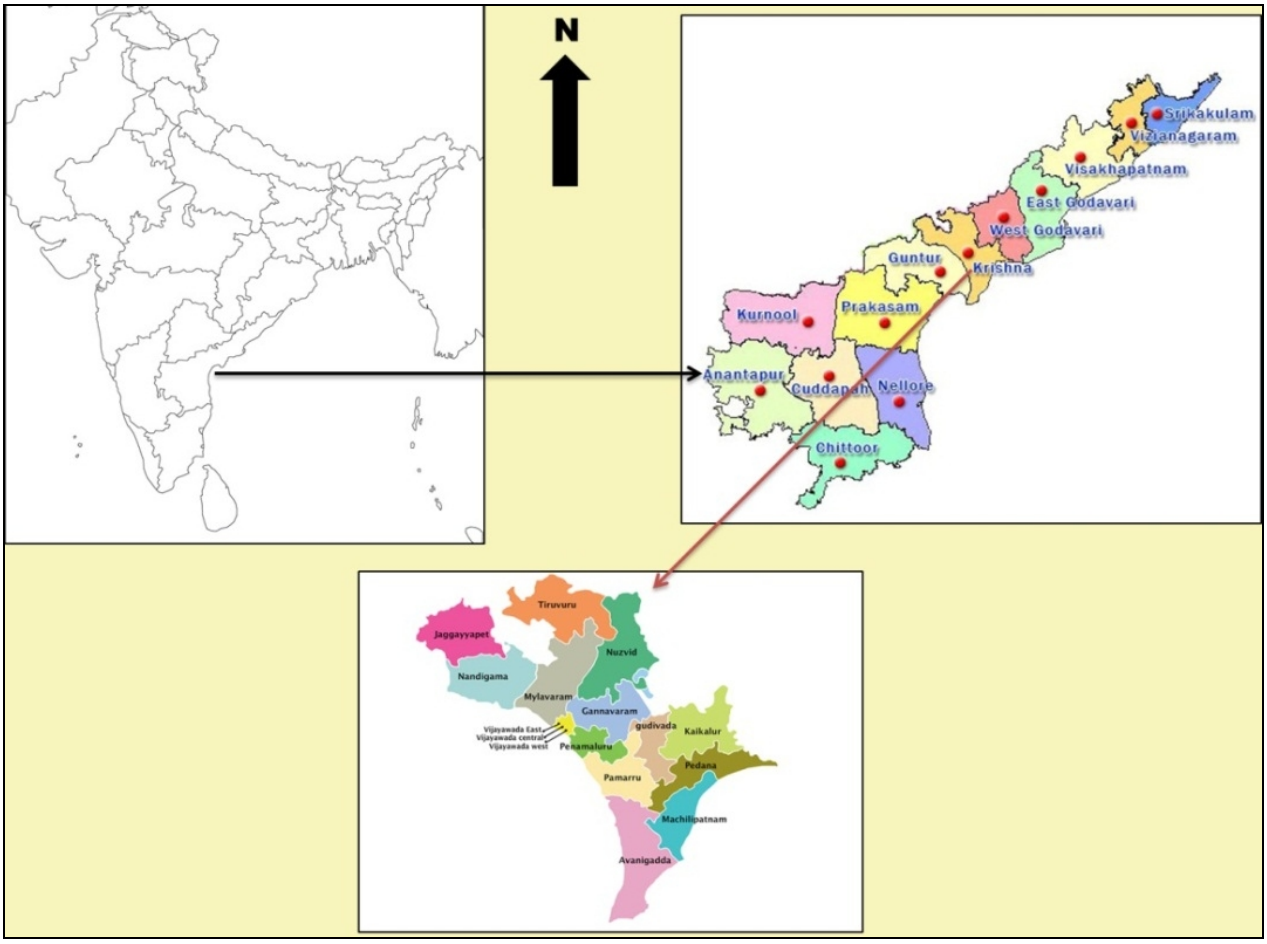

Fig 1: Location map of Investigation area

2.2 Methods

The Ethnomedicinal survey was conducted different villages of Krishna district in the coastal region of Andhra Pradesh during 2012-2013, traditional medicinal information on medicinal plants were recorded through field observation, interviews and discussion with herbal healers, knowledgeable elder people, housewives and farmers of the villages, employing a semi-structured questionnaire which included the village name, name of principal, the botanical name of medicinal plant, common name, ailments for which it has been used and plant component used. For authenticity about medicinal properties of plants, the information gathered during field study was cross checked with respondents and also with the former patients residing in the same or neighboring villages of the study region. Each of the plant species collected with the help of informants has been recorded, photographed, identified taxonomically using the standard flora 3 volumes of flora of the Presidency of Madras and already existing specimens. The herbarium prepared and voucher specimens were deposited in the department of Botany, Andhra Loyola College.

3. Observation

We had observed 23 plant species 13 are herbs, 6 are shrubs,3 are trees and only 1 species of climber. (Fig.2). Many types of plant species (tree, shrub, herb, climber and grass) are present in the study area, but we recorded below mentioned plants as medicines, as these plant species are very commonly utilized in Krishna district as traditional medicine for respiratory problems. Basically, these 23 plants are occurring commonly in Krishna district - The study area. (Table1).

Table 1: Enumeration of traditional medicinal plant species used by the local people of Krishna district, Andhra Pradesh, India.

S. No	Botanical name	Family	Common name	Local use
1.	*Abrus precatorius L*	Fabaceae	Gurivinda	Fresh leaves are taken twice a day to cure bronchitis and cough
2	*Acalyphaindica L*	Euphorbiaceae	Kuppintaku	15 to 20 ml of whole plant extract is used in one week to cure asthma
3.	*Achyranthesaspera L*	Amaranthaceae	Uttereni	1.5 g of whole dry ash powder with honey is given one week to cure cold and cough
5	*Adhatoda zeylanica L*	Acanthaceae	Adusage	10 ml of leaf extract with jiggery is given twice a day for 15 days to cure asthma
6	*Allium cepa L*	Liliaceae	Ulligadda	10-15 ml of bulb extract with honey is given in the morning for 21 days to cure asthma
7	*Allium sativum L*	Liliaceae	Vellulli	2 to 3 garlic cloves with salt given at night for 3 days to cure cough
8	*Calotropis procera L*	Asclepiadaceae	Jelledu	4 g root bark powder with honey is taken twice a day for 2 to 3 days for all types of cough
9	*Coriandrum sativum L*	Apiaceae	Kothimeera	50 ml of plant extract is taken twice a week for 3 weeks to cure asthma
10	*Curcuma longa L*	Zingiberaceae	Ginger	One teaspoon of powder, little block pepper with honey is taken for 3 to 5 days in case of cough
11	*Cynodon dactylon L*	Poaceae	Garike Hullu	50 to 100 ml of leaf juice is taken twice a day for 5 days to cure asthma
12	*Euphorbia hirta L*	Euphorbiaceae	Halina gada	20 ml of whole plant extract with a little salt is given twice a for one week to treat asthma
13	*Ficus racemosa L*	Moraceae	Attimara	2-3 fresh fruits are eaten with honey twice a day for one week to cure asthma
14	*Murraya koenigii L*	Rutaceae	Karibevu	100 ml of boiled leaves with jiggery, ginger is taken twice a for 3 days to cure cough and cold
15	*Ocimum americanum L*	Lamiaceae	Nayithulasi	50 ml leaf decoction is given twice a day to cure all coughs
16	*Ocimum basilicum L*	Lamiaceae	Kamakasturi	10-15 ml of leaf extract is given to cure whooping cough
17	*Ocimum sanctum L*	Lamiaceae	Thulasi	Fresh leaves of thulasi, *momordica*, acalypha are crushed and prepared pills, daily 2 pills are given for one week to cure asthma
18	*Pergularia daemia L*	Asclepiadaceae	Kuratiga	Fresh leaves, garlic cloves, Euphorbia tirucalli young buds are crushed and prepared the pills , daily one pill for one week to cure bronchitis
19	*Pongamia pinnata L*	Fabaceae	Batti	10 ml of fresh leaf juice with block pepper is given twice a day for 3 days to cure cough
20	*Punica granatum*	Punicaceae	Dalimb	5g of dry leaf powder twice a day for 3 days to cure dry cough
21	*Tylophora indica L*	Asclepiadaceae	Admutdballi	5-10 ml of root extract given daily for 5 days to cure asthma
22	*Vitex negundo L*	Vitaceae	Lekki	3 to 5 fresh leaves are taken daily for one week to cure cough
23	*Zingiber officinale L*	zingiberaceae	Shunti	20 ml of juice prepared from corm, betel leaves is given daily for one week to cure cough and cold

4. Results & Discussion

In the study area, out of 23 plant species in 21 genera and 16 families are used in respiratory diseases. Among them, 13 are herbs, 6 are shrubs, 3 are trees and one is a climber. The plants were collected which have been employed to treat – Respiratory ailments. . Among them - herbs, shrubs, trees and climber have been noted. In the following enumeration details of identifying herb plants in alphabetical order, followed by family name, local name, parts used diseases and medicinal uses. According to value of medicinal importance and uses some are used as a whole plant, while in some, different portions of plants like leaves, bark, stem, flowers, fruits and seeds are used. The herbal preparations are in the form of juices, decoctions, pills etc and drug administration is oral method. Mostly some herbs are used a whole plant, for example Achyranthes species. (Fig. 3).Common respiratory problems of the district cough, cold, bronchitis asthma and Whooping cough etc (Fig. 4). Many of plants species reported in the present study have not been recorded but however some of these plant species used to cure other ailments. The rural communities are very much prone to these ailments because of virtually non-existing health care, inadequate availability of pure drinking water, unhygienic attitude of the population due to illiteracy, proper sanitation etc.

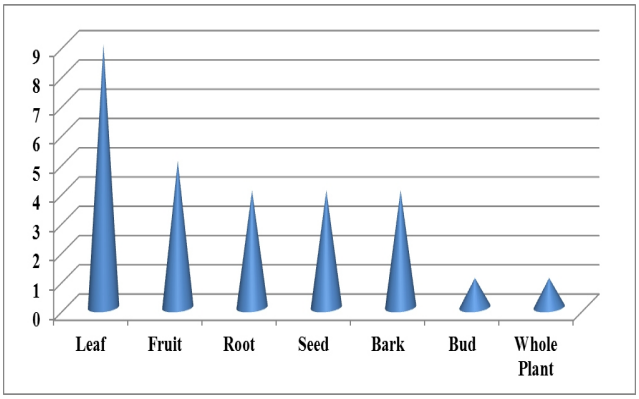

Fig 2: Number of the natural habit of traditional medicinal plants.

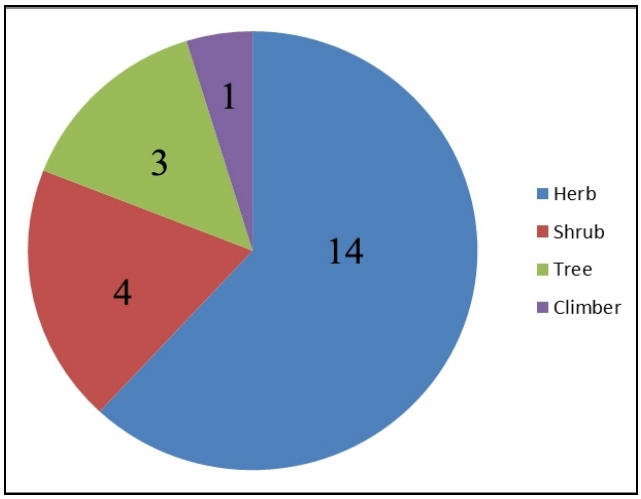

Fig 3: Utilization of plant parts of traditional medicinal plants in Krishna district, region of Andhra Pradesh, Uttar Pradesh, India.

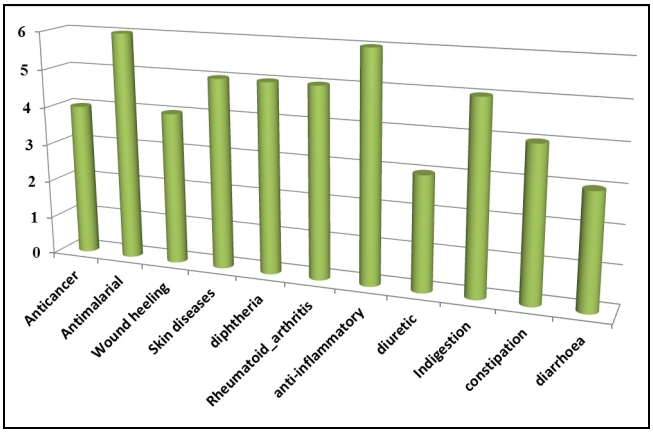

Fig 4: Traditional medicinal plants used in diseases.

5. Conclusion

The rural communities are very much prone to these ailments because of one of the prominent reasons as virtually non-existing health care installations. This forced the rural people of the study area to adopt their own traditional herbal medicine for their healthcare. Rural community's practitioners and older people of Krishna district utilize a number of plant species grown around their homes for several medicinal uses. However, the younger generation by ignoring their ancestral traditional medicine is inclining towards the allopathic medicine. Since, several bioactive compounds are being extracted from traditional medicinal plants; they are in great demand in pharmaceutical industries. The photochemical analysis and pharmacological investigations of traditional medicinally important plants by taking in view their proper conservation too, would help in developing novel drugs to treat ailments.

6. Acknowledgement

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