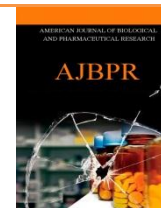




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CROP WEEDS AND ITS USES IN THE TREATMENT OF COMMON AILMENTS IN KORAPUT DISTRICT OF ODISHA, INDIA

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ABSTRACT

The paper presents report of 39 weed species found in different crop fields believed to have medicinal properties, which are being used by the rural people, particularly tribals of Koraput district of Odisha. During the survey a total of 39 plants species belonging to 35 genera and 22 families were identified as being used for treatment of approximately 41 ailments or therapeutic indication. These weeds although considered harmful to crops and eradicated from the crop fields during cultural operation may be faithfully utilised to serve the medicinal purpose against various ailments. The herbal recipes recorded in the study may provide ample opportunity to study them critically for their efficacy and also for new drug development.

INTRODUCTION

The recognition of plants as weeds is perhaps as old as agriculture itself. When land is cultivated to raise crops, weeds spring up naturally along with the crop plants. Weeds are defined as “a plant out of place or an unwanted plant or a plant with a negative or plant that competes with man for the soil” [1]. The weeds grow along with the crop plants (agro-ecosystems) and are regarded as nuisance for crops, but are the raw materials to the pharmaceutical industries as they yield chemicals used in formulation of various drugs, for preparing herbal formulations and an important source of medicines for indigenous peoples [2-3]. Quite a number of plants considered as weeds in modern sciences have significant value in ethno-botany. Many of these naturally growing plants are not really “unwanted” in the light of traditional herbal medicines [4-5]. Among the conservative estimate of 250,000 flowering plants in the world [6], more than 8000 species are weeds [7].

Many weeds contain chemical compounds which are biologically active and potentially useful for medical science. There is also good biochemical evidence that supports the hypothesis that plants in disturbed areas are likely to have more chemicals in them for defense. In view of the rapid loss of diversity of plants, natural habitats, traditional community life, cultural diversity and knowledge of medicinal plants, documentation of medicinally important weeds is an urgent matter [8].

Limited studies have been carried out on the traditional uses of weeds in India. Patnaik [4] gave information on some useful weeds in and around Cuttack of Odisha state. Phatak et al. [9] provided information on some useful weeds of Baroda, its neighborhood of Gujarat. Role of weeds in ayurvedic medicine was described by Govindiah [5]. While, Bhattacharyya [10] gave some medicinal uses of weeds of Saurashtra, Saikia and Hussain [11] dealt on medicinal aspects of some weeds used by the Ahom and Khamti communities of Sivasagar and Nath et al. [12] described ethnomedicinal aspects of weeds of Darrang district of Assam. Medicinal importance of weeds of Tirunelveli district in Tamilnadu was reported by Thomas and Britto [13] and Padal et al [14] discussed on

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the weeds of Chinthapalli Mandal, Visakhapatnam district of Andhra Pradesh.

In the interior areas of Koraput district of Odisha, plants become the only source of medicine because lack of modern facilities and remoteness. Ironically, information on the use of plants for medicine from this area is completely lacking [15]. Crop weed and their medicinal use is a good illustration of poor communities living in the remote areas taking care of their health problems. Plant parts are directly used as medicines by a majority of community in all over world and have no side effects like allopathic medicines. Medicinal plants constitute the base of health care systems in many societies. Globally, about 85% of the traditional medicines used for primary health care are derived from plants [16]. Today, according to the World Health organization (WHO), as many as 80% of the world's people depends on traditional medicine and in India, 65% of the population in the rural areas use Ayurveda and medicinal plant to help meet their primary health care needs [17]. In India, more than 43% of the total flowering plants are reported to be of medicinal importance [18].

Though weeds are one of the greatest limiting factors to efficient crop production, but no plant is useless in nature. Therefore, the present work, intends to study the weed diversity infesting the crop fields of the district. Crop field weeds regarded undesired and neglected, as the constant source of annoyance and trouble to the farmers, are simply eradicated by plugging and thronging away but, in facts they are important from the standpoint of medicinal and allelopathic value [19]. In this connection various studies published on ethno medicinal plants of Koraput District [20-22] show that it is incomplete and scanty and there are no reports on the crop weeds and its uses so far.

Keeping in view of above facts it is worthy to study the crop weeds used by the indigenous people of Koraput. The author made repeated visits to the localities, made contact with the tribal people, and the interesting information collected from them are presented in the paper.

MATERIALS AND METHODS

A field survey was made to find out the medicinal values of common weeds present in crop fields of Koraput district (Odisha) during 2012-14. Koraput is the southernmost district of Odisha, India lies between 18° 14' to 19° 14' N latitude and 82° 05' to 83° 25' E longitude with a total geographical area of 8,807 sq km (accounting 5.38% of Odisha state). Physio-graphically it is contiguous to the main land of Eastern Ghat High land Zone and South-Eastern Ghat Zone. The general topography area is of broken mountains intercepted by large riverbeds and watercourses. The altitude varies from 500 m near western side to 1600 m on the eastern side with mountain peaks and ridges. Information on the medicinal weeds was gathered through oral interviews of the local tribal people, especially older persons. Through oral interviews, local plant names, usable plant parts, preparation method for medicine, application mode and dosage were recorded. All gathered information was cross-checked with people of other villages and other individuals practicing in or near the locality in which the plant material was collected. The plants were identified as per flora of Orissa by Saxsena and Brahmam [23]. The unidentified plants were collected in polythene bags and taken into the laboratory for identification. Plant specimens were identified according to Haines [24] and with the help from IMMT (RRL), Bhubaneswar Herbarium laboratory.

Table 1. List of crop weeds used by tribals of Koraput with their botanical name, family, parts used and cure diseases.

Sl. No	Botanical Name	Family	Local Name	Cure Disease
1.	<i>Hygrophila auriculata</i> L.	Acanthaceae	Kikdikanta	Stone of the urinary bladder, Diuraticindropsy
2.	<i>Amaranthus hypochondrioides</i> L.	Amaranthaceae	Kukdakeshbhaji	Contraception, to stop menstruation
3.	<i>Achyranthus aspera</i> L.	Amaranthaceae	Apamaranga	Gastro-intestinal disorders, Labor pain
4.	<i>Alternanthera sessilis</i> L.	Amaranthaceae	Madaranga Saga	Dysentery
5.	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Kantabhaji	Eczema, Broken bone
6.	<i>Amaranthus dubius</i> L.	Amaranthaceae	Khudubhaji	Broken bone, Internal bleeding
7.	<i>Amaranthus viridis</i> L.	Amaranthaceae	Bada Patria Bhaji	Dysentery and inflammation
8.	<i>Amaranthus tricolor</i> L.	Amaranthaceae	KhodaBhaji, Lalkhoda	Anemia, Dysentery
9.	<i>Centella asiatica</i> L.	Apiaceae	Duasaag, Thalkudi	Stomach disorder, Leprosy, Psoriasis.
10.	<i>Biden pilosa</i> L.	Asteraceae	Banagendu, Chikni	Jaundice, Toothache, Dysentery and Diarrhoea
11.	<i>Blumea lacera</i> L.	Asteraceae	Pokusunga	Eczema, Ring worm
12.	<i>Ageratum conyzoides</i> L.	Asteraceae	Gandhari	Kidney stones, cuts wounds
13.	<i>Parathenium</i>	Asteraceae	Baja dhasa	Dysentery, Malaria



	<i>hysterophorus</i> L.			
14.	<i>Sphaeranthus indicus</i> L.	Asteraceae	Bhuikadam, Batiphul	Check the excessive urination
15.	<i>Spilanthes paniculata</i> L.	Asteraceae	Ban jhundu	Scabies
16.	<i>Tridax procumbens</i> L.	Asteraceae	Bishalyakarani	Wounds
18.	<i>Spilanthes paniculata</i> L.	Asteraceae	Gandri	Tooth ache
19.	<i>Trichodesma indicum</i> L.	Baraginaceae	Hetamundia	Joint pain & swellings
20.	<i>Ricinus communis</i> L.	Caesalpiniaceae	Joda	Lip cracking, Abdominal pain and Rheumatoid arthritis
21.	<i>Chenopodium album</i> L.	Chenopodiaceae	BhatuaSaag	Disappearance of white sports, Leucoderma
22.	<i>Cyperus rotundus</i> L.	Cyperaceae	Muthaghasa	Epilepsy, Dysentery
23.	<i>Oxypetalum pethium</i> L.	Convolvulaceae	Kidkida	Vomiting, Diarrhoea
24.	<i>Tephrosia purpurea</i> L.	Fabaceae	Kalathia	Toothache
25.	<i>Ocimum canum</i> L.	Lamiaceae	BanaTulasi	Migraine
26.	<i>Leucas aspera</i> L.	Lamiaceae	Gayash, Gaisa	Gastric trouble, Intestinal worms
27.	<i>Sida rhombifolia</i> L.	Malvaceae	Bajromuli	Swelling, Headache and Rheumatism
28.	<i>Marsilea minuta</i> L.	Marsileaceae	Sunsunia Saga	Neurological disorder
29.	<i>Mimosa pudica</i>	Mimosaceae	Lajakuli lata	Toothache, Snake bite
30.	<i>Oxalis corniculata</i> L.	Oxalidaceae	Ambiliti	Dysentery
31.	<i>Argemone mexicana</i> L.	Paperveraceae	Dagrugacha, odasamari	Eye inflammation and Wounds
32.	<i>Cynodon dactylon</i> L.	Poaceae	Duboghasa	Nasal bleeding and Dysentery
33.	<i>Miscrochloa indica</i> L.	Poaceae	Tatibuta	Dysentery
34.	<i>Portulaca oleraceae</i> L.	Portulacaceae	Balubalua, Launi	Gum bleeding, Diabetes and Burning sensation
35.	<i>Spermacoceo cymoides</i> L.	Rubiaceae	Muttaichoori	Ring worm, Eczema, Diarrhea, Dysentery
36.	<i>Solanum virginianum</i> L.	Solanaceae	Kanta baigana	Asthma, Leprosy, Cut wound and Worm infection
37.	<i>Datura stramonium</i> L.	Solanaceae	Kala dudura	Asthma
38.	<i>Solanum nigrum</i> L.	Solanaceae	Putputia	Ear ache
39.	<i>Stachytarpheta indica</i> L.	Verbenaceae	Julajali, Usku	Asthma, Leprosy, Cut wound and Worm infection

RESULTS AND DISCUSSION

During the survey a total of 39 plants species belonging to 35 genera and 22 families were identified as being used for treatment of approximately 41 ailments or therapeutic indication including headache, tooth-ache and eye inflammation etc. (Table 1). The data are presented as botanical name of each herb and shrub followed by, family, local name and various diseases in Table 1. From this study it has been observed that more numbers of medicinal weeds were recorded in the family Asteraceae followed by Amaranthaceae and Poaceae. Mostly leaves were used for preparation of medicines for different ailments. It has been reported that healthcare requirements are met from more than 80% of total number species found in the crop fields of Jajpur district [25]. It was, however, reported by tribes and agricultural labourers of other communities that now-a-days they use these weeds for curing wounds, abscesses, indigestion, flatulence or some other temporary disorders only, but do not use them to cure serious or chronic diseases. In recent years, the medicinal plant diversity of

this area in general and agricultural fields in particular are threatened due to overexploitation, rapid industrialization and mining activities etc. On the other hand, unscrupulous collection of plants with proven medicinal properties by the pharmaceutical industries coupled with lack of adequate cultivation practices for their regeneration has resulted in a serious depletion of this much valued natural resources. Hence, it is the need of the hour to explore, identify and utilize new medicinal plants on one hand and, on the other, to help conserve the existing but threatened species of rare medicinal plants. Besides, to stay away from the ever-increasing use of costly antibiotic or other synthetic medicines, these folk medicines, already in use, need to be scientifically utilized by identifying the alkaloids and other chemicals responsible for curing the diseases or disorders. The present study does not prescribe any remedy against diseases but a preliminary report on ethnomedicinal uses of some weeds which should be screened and tested by the pharmacologists to be used as medicines for various diseases in future.



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