

## **Ethnobotanical Investigation of Crop Weed Diversity and Their Uses in the Treatment of Diabetes and Other Ailments in Sambalpur, Angul and Dhenkanal District of Odisha (India)**

**Suman Kumar Mekap<sup>1</sup>, Prasana Kumar Panda<sup>2</sup>, Sagar Kumar Mishra<sup>3</sup>, Monalisa Mahapatra<sup>4</sup>, Chinmaya Chidananda Behera<sup>5</sup>**

<sup>1,5</sup> Centurion University of Technology and Management, Bhubaneswar, Odisha, India

<sup>2,3</sup> Pharmacology and Phytochemistry Division, University Department of Pharmaceutical Sciences, Utkal University, Vani Vihar, Bhubaneswar, Odisha, India.

<sup>4</sup> School of Pharmaceutical Sciences, Siksha "O" Anusandhan University, Bhubaneswar, Odisha, India

### **Abstract**

An ethnobotanical investigation was instigated in three selected forest surrounded village areas namely Bamra, Chhendipada and Kapilash of Sambalpur, Angul and Dhenkanal district respectively in different crop fields of rice in warm rainy season and in mustard, black gram and groundnut in winter season. Some local occupants including both tribal and non-tribal were approached and interviewed to identify, name and show the weeds in these crop fields, which they use for medicinal purposes to cure both animal and human ailments with special reference to diabetes. We identified total 75 weed species present in three villages under study, it was revealed that common people use only 53 species for their curative purposes. Some of the promising ethnomedicinal weeds identified as *Alternanthera sessilis*, used in dysentery; *Amaranthus spinosus*, used in abscesses and eczema; *Blumea lacera* used to hasten the expulsion of placenta of cow after calving; *Chenopodium album*, used to improve appetite and abdominal pains; *Cynodon dactylon* used as antihaemorrhagic in dysentery and nasal bleeding; *Cyperus rotundus* roots are useful in dysentery, vomiting and epilepsy; *Eclipta prostrata* used as anthelmintic and wound healing; *Euphorbia hirta*, in ring worm and old wounds; *Heliotropium indicum* used in joint disorders; *Marsilea minuta* used in sleeplessness and insect bites, *Oxalis corniculata* used in the treatment of diabetes and hyperlipidemia, *Portulaca pilosa* used in weight reduction and diabetes etc.

**Key words:** *Oxalis corniculata*, *Portulaca pilosa*, Diabetes, hyperlipidemia, Crop weeds

### **Introduction**

Ethnobotany is the study of the interactions and relationships between plants and people over the time and space. This includes the uses, knowledge, beliefs, management systems, classification systems and language that both current and traditional cultures have for plants and their associated ecosystems. Ethnomedicine and their traditional knowledge is a good illustration of poor communities living in the remote areas, in combating with even incurable diseases through the conventional methods and even for their livestock through these age old herbal medicines (Raut *et al.*, 2012).

The goals of using plants as sources of therapeutic agents are, either *i*) to isolate bioactive compounds for direct often poorly appreciated. There have been several reports use as drugs

ii) to produce bioactive compounds of novel or known structures as lead compounds for semi synthesis to produce patentable entities of higher activity and/or lower toxicity iii) to use agents as pharmacologic tools and iv) to use the whole plant or part of it as a herbal remedy. Information is very scanty on local medicinal crop weeds and their parts used traditionally in Sambalpur, Angul and Dhenkanal district. This study aims at documenting plants and plant parts used exclusively for the management of various diseases with special reference to diabetes used by traditional healers in targeted area of the above said districts.

The soil in major parts of these districts is alluvial, where as some part are having red and laterite soils especially in the foot-hill areas. The tribes in the area dependent for their day to day requirements on the adjacent forest. Living close to nature, rural folks especially tribals are familiar with thousands of wild plants, weeds and animals. By empirical reasoning and trial or error, tribal and rural folks have screened and developed a highly complex and very specific knowledge on the available local flora. Main objectives of the present investigation are to tap these entire knowledge systems before they are wiped out or lost completely. This investigation is specifically intent to document the traditional skill and craft of the tribal or rural communities in utilizing plant weed resources of their crop fields for primary health care practices.

### Material and Methodology

An ethnobotanical exploration was made to find out the therapeutic values of common weeds in crop fields of Sambalpur, Angul and Dhenkanal district (Odisha) during 2018 - 2019. Field studies were undertaken in three selected villages of the above said districts namely Bamra, Chhendipada and Kapilash respectively in the crop fields of rice in warm rainy season and in mustard, black gram, green gram, groundnut and potato crop fields in winter season.



Fig-1 The area of survey marked in Red

As different species come to flowering and fruiting at different times of the year, field surveys were executed in such a way as to accommodate relevant information in different stages of their life history. Some common people comprising of tribal and non-tribal were approached to name and show the weeds growing in these crop fields which they use for medicinal purposes to cure human and animal diseases. Folk-lore claims were documented along with voucher specimens. The detailed information about the plants, dosages, method of preparation and mode of administration etc. were recorded. The supportive plant specimens of folklore claims were collected, processed, critically studied, identified and preserved in the herbarium. An effort was made to cross check the folklore claims. Vernacular names in vogue in the different languages and in Odia were given. Uses of plants are mainly confined to the information recorded from the tribes or local inhabitants. All the voucher specimens are maintained in the Herbarium of P.G Department of Botany, Utkal University, Vani vihar, Bhubaneswar, Odisha

### **Enumeration**

*Alternanthera sessilis* (L.) R.Br. ex DC. (Fam. Amaranthaceae)

Local name: Madaranga saga (O); Garundi arak (S)

Distribution: Common weed in moist places of the crop field. Fl. & Fr. July-Jan.

Ethnic uses: Plant juice (10 ml) is given twice a day for 5 days against chronic dysentery.

*Amaranthus spinosus* (L.) (Fam. Amaranthaceae)

Local name: Kantamarish, Kanta saga (O); Janum arak (S)

Distribution: Common throughout in waste places and cultivated lands. Fl. & Fr. Most part of the year.

Ethnic uses: Root paste is applied locally to cure eczema or abscesses.

*Ammannia baccifera* (L.) (Fam. Lythraceae)

Local name: Ramdauni (O)

Distribution: Common in rice fields and wet places. Fl. Sept-Nov. Fr. Nov.-March.

Ethnic uses: Leaves bruised and applied externally against ringworm and other parasitic skin infection.

*Bacopa monnieri* (L.) Pennell *Herpestis monniera* (L.) Kunth (Fam. Scrophulariaceae)

Local name: Panikundi, Brahmi (O)

Distribution: Common in wet places near water courses. Fl. & Fr. April-Dec.

Ethnic uses: Leaf juice (15 ml) along with 5 ml of honey given once a day (on empty stomach for 30 days for epilepsy. Juice of the plant (15 ml) mixed with milk (50 ml) given twice a day against epilepsy. Leaf juice (15 ml) along with equal amount of leaf juice of 'Bilva' (*Aegle marmelos*) is prescribed for one month to reduce blood sugar.

***Bidens pilosa*** (L.) (Fam. Asteraceae)

Local name: Magha latenga, Bana gendu (O)

Distribution: Common weed in crop fields especially in Rabi season. Fl. & Fr. Sept. - April.  
Ethnic uses: Plant juice (5 ml) is applied externally to cure skin diseases.

***Blumea lacera*** (Burm.f.) DC. (Fam. Asteraceae)

Local name: Pokasunga (O)

Distribution: Common weed in the border of crop fields. Fl. & Fr. Feb. - June.

Ethnic uses: Leaf paste along with a pinch of common salt is applied externally to cure eczema and ring worm. Decoction of entire plant (100 ml) along with 50 g of old jaggery is given to hasten the expulsion of placenta of cow after calving.

***Canscora decussata*** (Roxb.) Schult. & Schult.f. (Fam. Gentianaceae)

Local name: Shankha puspi (O)

Distribution: Occasional in moist and shady places. Fl. & Fr. Sept.-Dec.

Ethnic uses: The plant juice (5 ml) is taken twice a day for 5 days after meals against dyspepsia. Decoction (10 -15 ml) of the whole plant is given along with old jaggery (5 g) to cure epilepsy and psychosis. About 20 ml juice of plant given once daily for seven days at bed time either with honey or with jaggery to cure forgetfulness and general debility.

***Cardiospermum halicacabum*** (L.) (Fam. Sapindaceae)

Local name: Phatka, Phutiputika (O)

Distribution: Very common in pulse crop fields and also in open places, often climbing over hedges, thickets. Fl. & Fr. April-Nov.

Ethnic uses: The leaf juice is dropped into the ear against earache.

***Celosia argentea*** (L.) (Fam. Amaranthaceae) Local Name: Lahanga saga (O)

Distribution: Common weed in and around cultivated fields and waysides. Fl. & Fr. Sept.-Feb.

Ethnic uses: Plant paste (50 g) is given to cow and fried leaves (10 g) to women after delivery against the body ache.

***Centella asiatica*** (L.); (*Hydrocotyle asiatica* L.)Urban (Fam. Apiaceae)

Local name: Thalkudi, Ghodatapua Brahmi (O)

Distribution: Low or medium land rice field or found in wet places. Fl. & Fr. Most part of the year.

Ethnic uses: Leaves (5 g) pounded with 5 black peppers is eaten for 10 days against stomach disorder. Plant decoction and cow milk in 1:5 ratio is taken for 15 days against asthma. The plant juice is used externally as well as internally (10 ml once in a day for one month or till the cure) in the treatment of leprosy and psoriasis.

Leaves (3-4 nos.) are boiled in sesame (*Sesamum indicum*) oil (about 20 ml) and rubbed on scalp for better hair growth.

***Centipeda minima*** (L.) A.Braun & Asch. (Fam. Asteraceae)

Local name: Nakachinka (O)

Distribution: Commonly found in moist places. Fl. & Fr. March - Jan.

Ethnic uses: The boiled herb paste is applied on gum to stop toothache.

***Chenopodium album*** (L.) (Fam. Chenopodiaceae)

Local name: Bathua sag (O)

Distribution: Found in potato or ground nut field; rarely cultivated as vegetable. Fl. & Fr. Nov.-April.

Ethnic uses: Leaf juice is applied over the affected parts twice a day for 15 days or till the disappearance of the white spot or leucoderma.

***Chrozophora rotleri*** (Geisel.) Juss. (Fam. Euphorbiaceae)

Local name: Nilkanthi; Bichutia (O).

Distribution: Occasional weed, in waste places and cultivated fields. Fl. & Fr. most part of the year.

Ethnic uses: The leaf paste is applied for removal of pimples and acne. Seed paste (20 g) along with sugar candy (10 g) is given once in a day for 3 days against hypertension.

***Cleome viscosa*** (L.) (Fam. Capparaceae)

Local name: Anasorisa (O)

Distribution: Fairly common weed; also found in crop field. Fl. & Fr. May-Oct.

Ethnic uses: Decoction of powdered plant is applied in the treatment of pimples and boils.

***Coix lacryma-jobi* (L.) (Fam. Poaceae)**

Local name: Gargada (O)

Distribution: Along water courses; also occasional in water logged rice fields Fl. & Fr. Sept.-Feb.

Ethnic uses: The seed paste (20 g) mixed with old jaggery (10 g) is given once in a day for 7 days against jaundice.

***Coldenia procumbens* (L.) (Fam. Boraginaceae)**

Local name: Gondhralata (O)

Distribution: Common weed in cultivated land in Rabi season, wastelands, near ponds etc. Fl. & Fr. most part of the year.

Ethnic uses: Leaf paste is applied to the wounds on the foot of oxen caused due to Foot and mouth disease (locally known as 'Phatua'). Fresh leaves are ground and applied to rheumatic swellings.

***Cynodon dactylon* (L.) Pers. (Fam. Poaceae)**

Local name: Duba, Dubaghasa (O)

Distribution: Fairly common in wastelands, road sides and cultivated lands. Fl. & Fr. Most part of the year.

Ethnic uses: The infusion of the leaves (10 ml) is taken twice daily for 10 days against nasal bleeding. Root juice (10 ml) of this herb along with bark powder (2-3 g) of 'Guali' (*Cordia obliqua*) and one spoonful sugar candy is prescribed thrice a day till relief from dysentery.

***Cyperus rotundus* (L.) (Fam. Cyperaceae)**

Local name: Mutha ghasa (O)

Distribution: Common weed in rice fields. Fl. & Fr. Chiefly July-Dec.

Ethnic uses: The decoction of the plant (10 ml) mixed with honey (5 ml) is taken together twice a day for 5 days against epilepsy. Whole plant (50 g) is ground with dried ginger (50 g), fruit of 'harida' (20 g) and 'cu-min' seeds (10 g) to powder. That powder is taken (5 g) every day for one month against dysentery and vomiting.

***Eclipta prostrata* (L.) *Eclipta alba* (L.) Hassk. (Fam. Asteraceae)**

Local name: Kesadura, Kesuta (O)

Distribution: Frequent in moist places along streams, borders of rice fields, cultivated lands etc. Fl. & Fr. Aust.-April.

Ethnic uses: Powder of the dried root (3 -5 g) is given with honey during loss of memory due to mental stress or mental disorder. Consumption of root powder with milk is prescribed against debility due to old age. Presently in heavy demand for energy capsule. Leaf juice mixed with castor oil is applied on scalp for strengthening of hair and also used as a preventive measure against premature graying of hair and alopecia. A preparation of warm sesame oil with plant paste (2:1) is applied to cure scalp-wounds.

***Emilia sonchifolia*** (L.). DC. (Fam. Asteraceae)

Local name: Sarkara (O)

Distribution: Commonly in moist and shady places; borders of cultivated lands. Fl. & Fr. Aug.-April.

Ethnic uses: Decoction of the root (10 ml) is given twice daily for 5 days against fever coupled with running nose.

***Eriocaulon quinquangulare*** (L.) (Fam. Eriocaulaceae)

Local Name: Phurki (O)

Distribution: Fairly common in wet places especially in rice fields. Fl. & Fr. Aug - Feb.

Ethnic uses: The plant paste (10 g) warmed in goat milk (25 ml) is massaged all over the body for 3 days against body-ache after fever.

***Euphorbia hirta*** (L.) (Fam. Euphorbiaceae)

Local name: Chitakutei, Hariharika (O)

Distribution: Common weed, everywhere; sometimes in borders of cultivated lands. Fl. & Fr. Almost throughout the year.

Ethnic uses: The poultice of the whole plant is applied to cure ring worm, abscesses and inflammation. The latex is applied on eye like 'kazal' against conjunctivitis. The latex of the plant is used in the treatment of warts and corns. The milky juice of the plant is applied on cracked lips, nipple and tongue.

***Gnaphalium polycaulon*** Pers. (*Gnaphalium indicum* auct. non. L) (Fam. Asteraceae)

Local name: Gopalagodi (O).

Distribution: Very common in wet places throughout the area including cultivated fields. Fl. & Fr. Jan. - April.

Ethnic uses: Leaf juice mixed with coconut oil is rubbed gently on scalp daily for a month to delay graying of hair and prevent hair fall.

***Gomphrena celosoides*** Mart. (Fam. Amaranthaceae)

Local name: Godi-phula, Gola-phula (O)

Distribution: Common weed in wastelands and occasional in crop fields. Fl. & Fr. Most part of the year.

Ethnic uses: Root is chewed daily before sleep at night for pyorrhoea and gum troubles.

***Grangea madersapatana*** (L.) Poir. (Fam. Asteraceae)

Local name: Agnikumari, Painjari (O)

Distribution: Common weed in the wet lands and Rabi crop fields. Fl. & Fr. Dec.-Feb.

Ethnic uses: About 1 cm long root is chewed after meal for 15 days against dyspepsia.

***Hedyotis corymbosa*** (L.) Lam. (*Oldenlandia corymbosa* L.) (Fam. Rubiaceae)

Local name: Gharapodia, Khetapapra (O)

Distribution: Fairly common weed. Fl. & Fr. June - Sept.

Ethnic uses: The decoction (10 ml) of the whole plant is given twice a day for 4 days against fever due to gastric irritability and nervous depression.

***Heliotropium indicum*** (L.) (Fam. Boraginaceae)

Local name: Hatisundha (O)

Distribution: Weed on waste ground and cultivated lands. Fl. & Fr. Most part of the year.

Ethnic uses: Leaf paste made by squashing (2-3 lowest) is eaten daily once for 10 days against epilepsy and abscesses on joints.

***Hybanthus enneaspermus*** (L.) F.v. Muell. (*Ionidium suffruticosum* (L.) Ging. ex DC. ) (Fam. Violaceae)

Local name: Madanamasta, Madanamastaka, Charati(O)

Distribution: Common in lawns and occasionally in cultivated crop fields. Fl. & Fr. Throughout the year.

Ethnic uses: The root-paste (10 g) with 3 black peppers is administered on empty stomach once daily for 21 days against diabetes and also given to children against bowel complaints.

***Hygrophila auriculata*** (Schum.) Heine (*Asteracantha longifolia* (L.) Nees) (Fam. Acanthaceae)

Local name: Koilikhia, Koilikanta (O)



Distribution: Common along water courses, on the bunds of the cultivated lands. Fl. & Fr. Dec.-Feb.

Ethnic uses: The plant's ash (5 g) is given with cow milk (100 ml) for 30 days to dissolve the stone of the urinary bladder.

***Leucas aspera*** (Willd.) Link (Fam. Lamiaceae)

Local name: Gaisa (O)

Distribution: Common weeds along waysides and in groundnut or black gram crop fields. Fl. & Fr. Aug.-Feb.

Ethnic uses: The leaves (10 g) are fried in mustard oil and taken daily against gastric trouble.

***Ludwigia octovalvis*** (Jacq.) Raven (Fam. Onagraceae)

Local name: Bhuin-lavanga (O)

Distribution: Common in wet places along streams, tanks, rice fields etc. Fl. & Fr. Oct - April.

Ethnic use: 4 -5 leaves are ground in 10 g of preserved jaggery and the paste thus obtained is used as an external application against eczema and ring worm.

***Marsilea quadrifolia*** (L.) (Fam. Marsileaceae)

Local name: Sunusunia saga (O)

Distribution: Commonly found in marshy places and along the banks of canals and borders of low land cultivated fields. Fr. Nov.-Feb.

Ethnic uses: Leaf juice (10 ml) with 20 ml of curd once in a day for 7 days is useful in neurological disorder and insomnia. The patient is also advised to take leaves fried with ghee to cure epilepsy.

***Mollugo pentaphylla*** (L.) (Fam. Molluginaceae)

Local name: Pitasaga (O)

Distribution: Fairly common weed in cultivated land, road sides and waste lands. Fl. & Fr. July - Aug.

Ethnic uses: Leaf paste is applied over the fresh-ly cut wounds to check bleeding.

***Oxalis corniculata*** (L.) (Fam. Oxalidaceae)

Local name: Ambiliti, Kumari (O)

Distribution: Fairly common weed in gardens and near the bunds of cultivated lands. Fl. &

Fr. throughout the year.

Ethnic uses: The leaf juice mixed with honey (each 5 ml) is taken twice daily for 5 days to cure dysentery. Equal amount of leaf juice, ginger juice and honey are mixed together. The mixed solution is taken (5 ml twice a day for three days) against dyspepsia. Leaf juice is locally applied to cure warts, corns and other excrescences of the skin. The extract of the whole plant mixed with onion juice (1:1) is also applied to remove warts. The juice mixed with black pepper powder and ghee gives relief from red spots and eruptions on the skin caused by biliousness. A tablespoon of fresh juice mixed with butter of cow's milk is given once daily for 15 days to curb excessive thirst caused by diabetes.

***Paspalum scrobiculatum*** (L.) (Fam. Poaceae)

Local name: Kodua, Kodua-dhana(O)

Distribution: Wild, fairly common in moist and wet places, also found in crop fields. Fl. & Fr. most part of the year.

Ethnic uses: Mature grains (10 g) of this plant are made into a paste with the latex (1 ml) of banyan prop roots (*Ficus beng-halensis*) and recommended for ingestion once daily for 7 days to lessen the excessive appetite during diabetes.

***Phyla nodiflora*** (L.) Greene; (*Lippia nodiflora* (L.) A. Rich.) (Fam. Verbenaceae)

Local name: Godingi (O)

Distribution: Frequent in open moist places, near water courses. Occasional in crop fields. Fl. & Fr. Most part of the year.

Ethnic uses: Plant decoction (one teaspoon, two times daily for two days) is taken against diarrhoea.

***Phyllanthus fraternus*** Webster (Fam. Euphorbiaceae)

Local name: Bhui aenla, Bari aenla (O)

Distribution: Common weed in moist vegetable crop fields. Fl. & Fr. Most part of the year.  
Ethnic uses: The fresh root (2 g) is ground in rice water and taken daily in the morning for 15 days against jaundice. The infusion (5 ml) of the young shoot is given thrice a day for 2 days against dysentery.

***Physalis minima*** (L.) (Fam. Solanaceae)

Local name: Tipai (O)

Distribution: Common weed in moist vegetable crop fields. Fl. & Fr. Aug.-Jan.

Ethnic uses: Fruits (5 g) and roots (2.5 g) are made in to a paste and given once in a day for 7

days to cure jaundice.

***Polygonum barbatum*** L.var. ***stagninum*** (Buch.-Ham. ex Meissn.) Steward (Fam. Polygonaceae)

Local name: Garaara, Naiara (O)

Distribution: Common along streams and rivers; sometimes in lowland rice fields. Fl. & Fr. most part of the year.

Ethnic uses: Seed powder (10 g) mixed with 'turmeric' powder (10 g) is given to evacuate poison from the stomach.

***Portulaca pilosa*** (L.) (Fam. Portulacaceae)

Local name: Balibalua (O)

Distribution: Very common weed of cultivated lands especially in vegetable crop fields, waste lands, waysides, near water courses etc. Fl. & Fr. Throughout the year.

Ethnic uses: 10 ml of the plant juice is pre-scribed twice a day for 15 days against the burning sensation of the hands and feet. 10 ml of the leaf juice is taken twice a day for 10 days against gum bleeding. A teaspoon of its seed given every day with hot water for 2-3 months can increase the body's own insulin, which helps in curing diabetes.

***Pouzolzia zeylanica*** (L.) Benn. (Fam. Urticaceae)

(*Pouzolzia indica* (L.) Gaud.) Local name: Turania mula (O)

Distribution: Frequent in moist and shady places, often among bushes and hedges and occasional among grasses in crop fields. Fl. & Fr. Aug.- Oct.

Ethnic uses: Leaf paste is applied externally on the scalp-sores of children.

***Saccharum spontaneum*** (L.) (Fam. Poaceae)

Local name: Tandi (O)

Distribution: Common in open waste lands, along streams and rivers, borders of fields etc. Fl. & Fr. Aug-Feb.

Ethnic uses: Root paste (10 g) mixed with 5 drops of honey is given against dysentery.

***Scirpus articulatus*** (L.) (Fam. Cyperaceae)

Local Name: Gaichira (O)

Distribution: Common in marshy places; also found in low land rice fields. Fl. & Fr. Aug-Feb.

Ethnic uses: Root-paste (10 g) mixed with black pepper powder is given (once in a day till cure) in dysentery.

***Scoparia dulcis*** (L.) (Fam. Scrophulariaceae)

Local name: Khetapapada, Mithighaas (O)

Distribution: Common weed on waste grounds and cultivated fields. Fl. & Fr. throughout the year.

Ethnic uses: The leaf juice mixed with honey (each 5 ml) is taken twice daily for 5 days against fevers. The leaf juice (10 ml) along with 2 crushed black peppers is given against gastritis.

***Solanum virginianum*** (L.) (*S. xanthocarpum* Schard. & Wendl.) (Fam. Solanaceae)

Local name: Ankaranti, Bhejibaigana (O)

Distribution: Common in wet or marshy crop fields. Fl. & Fr. all the year round.

Ethnic uses: The seeds are crushed and smoked. The smoke is held up in the mouth for 1-2 minutes against tooth ache. By doing so, the worms are believed to get expelled. The fruit powder is taken to cure cold and cough. The leaf juice is given for bronchial asthma. Fruit decoction used for gargling against diseases of gums and teeth.

***Sphaeranthus indicus*** (L.) (Fam. Asteraceae)

Local name - Bhuikadam, Batua-godi, Mundi (O)

Distribution: Common in wet places; usually in Rabi crop fields or occasional in drying rice fields. Fl. & Fr. Nov.-March.

Ethnic uses: Paste (15 g) of this plant given with little old jaggery twice a day for 3 days to check the excessive urination.

***Spilanthes paniculata*** Wall. ex. DC. (Fam. Asteraceae)

Local name: Ban jhandu (O)

Distribution: Wild in marshy places; occasional-ly found in crop fields. Fl. & Fr. Oct.-Feb.

Ethnic uses: Leaf paste (20 g) along with coco-nut oil is applied to cure scabies.

***Trianthema portulacastrum*** (L.) (Fam. Aizoaceae)

Local name: Khapra saga, Puruni saga (O)

Distribution: Common weed pulse crop fields. Fl. & Fr. July- Dec.

Ethnic uses: Leaf juice is massaged on fore head against migraine.

Leaves are cooked and eaten to cure pus-tules in mouth and also against rheumatic pains.

***Tribulus terrestris*** (L.) (Fam. Zygophyllaceae)

Local name: Gokhara, Gokhura (O)

Distribution: Common as a weed along road-sides and waste places; occasional in cultivated fields. Fl. & Fr. throughout the year.

Ethnic uses: Infusion (15 ml) of matured fruits is prescribed early in the morning in empty stomach to rectify the urinary troubles (diabetic nephropathy) and impotency.

***Trichodesma indicum*** (L.) R.Br. (Fam. Boraginaceae)

Local name: Hetamundia, Henturi (O)

Distribution: Frequent in grasslands, wastelands, groundnut or green gram crop fields etc. Fl. & Fr. most part of the year.

Ethnic uses: Fresh leaves are ground and applied to the affected joints of the body to reduce the pain and swellings caused due to rheumatoid-arthritis.

***Vernonia cinerea*** (L.) Less. (Fam. Asteraceae)

Local name: Badi pokasunga (O)

Distribution: Common weed, in waste grounds and along the borders of the cultivated fields. Fl. & Fr. most part of the year.

Ethnic uses: 10-20 g of plant powder is taken along with 100 ml of milk once every morning, in empty stomach for about 3 months to treat filariasis.

***Vetiveria zizanioides*** (L.) Nash (Fam. Poaceae)

Local name: Bena (O)

Distribution: Fairly common and often gregarious in open swampy grounds, low lands and along the borders of rice fields. Fl. & Fr. Aug. - Jan.

Ethnic uses: Decoction of roots (10 g) is given early in the morning at least half an hour before breakfast for 15 days to check excessive thirst caused due to diabetes.

***Xanthium indicum*** Koenig (Fam. Asteraceae)

Local name: Bana gokhara, Jhagada (O)

Distribution: Fairly common in waste grounds and rarely in low land rice fields. Fl. & Fr. Most part of the year.

Ethnic uses: Root paste is applied externally to cure long standing wounds.

Leaf paste is applied on chronic wound of goat or sheep.

## **Results and Discussion**

During the survey 75 species have been collected, critically studied, identified and incorporated in the Herbarium. But ethno medicinal data when analyzed was found to be from 53 species only belonging to 29 families. This shows that healthcare requirements are met from more than 80 % of total number weed species found in the crop fields of these three district. Though 125 ethnobotanical notings were made from 9 tribes of the district during our field work, only 53 are found to be useful, less known or interesting on comparison with the available literature sources (Aminuddin and Girach 1994, Bal 1942, Chaudhuri *et al.* 1985, Chopra *et al.* 1956, Das and Mishra 1987, Brahmam and Dutta 1981, Brahmam and Saxena 1990, Girach *et al.* 1987, Jain 1971, Mudgal and Pal 1980, Pal and Panigrahi 1963, Pattnaik 1956, Sahu and Satapathy, 2009, Satapathy 2000, 2001, 2008, 2010, Satapathy and Panda 1992, Satapathy and Brahmam, 1994, 1999, Satapathy and Chand, 2000, 2003, 2010 a,b, Saxena and Dutta 1975, Saxena and Brahmam 1994, Subudhi and Choudhury 1985, Tribedi *et al.* 1982 ) and are presented here. The rest were deleted due to various unclassified reasons like wrong attribution, wrong identification, misinterpretation, non-confirmation in the cross checking, mounted on baseless faiths etc. All the 75 ethnomedicinal prescriptions are from 53 species only. It was, however, reported by tribes and agricultural laborers 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 plants diversity of this area in general and agricultural fields in particular, is 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.

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