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AN ENUMERATION OF ETHNOMEDICINAL WEEDS IN BANKURA AND ITS ADJOINING AREA, WEST BENGAL

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ABSTRACT

Tribal and rural people of villages of Bankura District of West Bengal rely significantly on the local plant resources for their primary healthcare and treatment of diseases. They also use large number of ethnomedicinal plants to improve their health hygiene. This paper mainly deals with different weed plants having medicinal values and this survey in different parts of Bankura District town has been documented 136 weed plant species belonging to 116 genera and 45 families, being used for healthcare needs. They use different types of plant materials or their crude extracts for the treatment of different ailments. An enumeration of weed plants is prepared along with their medicinal importance.

KEY WORDS: Bankura district, Ethnobotanical uses, medicinal plants, weeds

INTRODUCTION

Bankura, the district of West Bengal is located in the western part of the state, which is popularly known as ‘Rarh’ from time immemorial. It forms a part of Paschim Bardhaman Division and is situated between $22^0$38’ and $23^0$38’ north Latitude and between $86^0$36’ and $87^0$47’ east Longitude. It is bounded by Paschim Medinipur in the south and Hooghly district in the north, Purulia district in the west, Bardhaman district in the north and east. Bankura is

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drained by Damodar, Dwarakeswar and Kangsabati along with their tributaries of which Gandheswari, Silai and Kumari deserve separate mention. It has as area of 6882 sq. km. Total forest area of Bankura district is 1482 sq km i.e. 21.35% of the total area. Total reserve and unreserved forest areas of Bankura north forest range are 15.24 sq km and 13.70 sq km respectively. The district Bankura presents a variety of Geological formation from alluvial plains of Bengal in the East to Archean rocks in the west [1].

The district may be conveniently divided up into three topographical divisions: an eastern plainland, a western hilly region (Susunia hill, 439.5 m and Biharinath hill, 447.8 m) and a connecting undulating tract in the middle. Forests are more or less evenly distributed throughout the district with exception of north-eastern and south-western parts which include the thanas Saltora, Mejia, Indas and Kotulpur. The shape and size of the forest belts vary widely from place to place due to change of configuration of the area and shape of land [2].

Flora provide many valuable products including fruits, medicinal herbs, fire wood which used by local peoples for their sustenance. The medicinal plants of Bankura district demand a lot of interest from local people for herbal cure and the neighboring tribal people use these plant resources frequently. Medicinal plants are the potential source for discovery of new products and fine chemicals for drug development and the demand of medicinal plants has been increasing rapidly with the consumption of crude drugs [3, 4]. Medicinal plants are growing in importance day by day, because of the widespread interest in the adoption of multiple approaches to health care. Considerable efforts are being made all over the world, to utilize more and more plant resources, as the medicine of today is found to shift from synthetic molecules to naturally synthesized molecules. Also, these naturally synthesized molecules are biologically more compatible and less toxic to human system as compared to synthetics. The floristic records of the district has remained almost unexplored, a floristic exploration aimed towards preparing an up to date flora was done by Sanyal [5]. He has

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reported 65 species of medicinal plants under 36 families. Later Basak [6] reported 115 species of medicinal plants in Bankura district. Present study mainly deals with documentation of different weed plants of Bankura town along with their medicinal importance.

MATERIALS AND METHODS

The field surveys were carried out during 2017-2019 for a period three years covering different pockets of the district. The investigation is based on observation of plants at different blocks, namely Bankura-I, Bankura-II, and other parts of the Bankura District town, West Bengal. Medicinal plants were collected, preserved on herbarium for proper identification. The herbarium specimens of the Department of Botany, Bankura Christian College also used for identification.

RESULT AND DISCUSSION

Bankura district with its vast and diverse climatic zones harbours a large number of plants including those of medicinal values. This study has led to the documentation of 136 species of medicinal weed plants belonging to 116 genera distributed among 45 families as shown in table 1. Total 123 dicotyledonous species were collected grouped into 103 genera

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assigned to 37 families according to Cronquist's Classification [7]. Total 13 monocotyledonous species were collected grouped into 13 genera assigned to 8 families. Among dicot, Asteraceae, Fabaceae, and Acanthaceae are more prevalent families containing 16, 12 and 10 plant species respectively throughout the Bankura town. Lamiaceae, Scrophulariaceae, Euphorbiaceae, Convolvulaceae, Solanaceae are also dominant families among dicot. Among monocot Poaceae, Liliaceae and Commelinaceae are prevalent families containing 3, 2 and 2 species respectively throughout the Bankura district town.

Though Bankura district has very rich vegetation, mainly medicinal plants were collected and their different parts used in medicinal purpose are depicted in table 1. In table 1 total 136 plant species are enumerated which have ethno-medicinal value. Tribal and rural people of Bankura district used to treat their ailments by using these fresh plant materials. These people are prone to victim injuries, wounds, cuts, swelling etc because they did hard work in their routine life. The enumerated plants have proved easily available remedy materials which give quick relief also.

Table 1: Enumeration of medicinal plants with their medicinal importance

Sl. No.	Scientific Name	Family	Parts Used	Therapeutic Uses
1	*Aristolochia indica*	Aristolochiaceae	Roots & leaves	Tonic (Saibachurna) nervine tonic, leucoderma, skin disease, root decoction used in impotency
2	*Ranunculus sceleratus*	Ranunculaceae	Leaves	Use in homeopathy

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3	*Argemone mexicana*	Papaveraceae	Whole plant particularly seeds & root	Seed oil used in dropsy, herpes, stangury, skin disease, seeds-laxative
4	*Boerhaavia diffusa*	Nyctaginaceae	Entire plants	Anaemia, jaundice, dropsy, chronic rheumatism, used in Salasa & Punarnabashtak Pachan tonic
5	*Mirabilis jalapa*	Nyctaginaceae	Leaves, root	Boils, inflammation, puragative, roots used in piles and general debility
6	*Chenopodium album*	Chenopodiaceae	Whole plant particularly shoots, leaves	Laxative, anthelmintic, rheumatism, dysentery
7	*Achyranthus aspera*	Amaranthaceae	Entire plant	Purgative, Piles, Colic pain, vein rheumatism, used in Ayurvedic preparation for leucorrhoea-Apamargabati
8	*Aerva ianata*	Amaranthaceae	Entire plant	Anthelmintic, Diuretic
9	*Alternanthera sessilis*	Amaranthaceae	Young shoot	Nutritious, febrifuge, roots applied to cure inflammed wounds.
10	*Amaranthus spinousus*	Amaranthaceae	Whole plant particularly leaves& root	Boils, febrifuge, abscesses, burns, wounds
11	*Portulaca oleracea*	Portulacaceae	Whole plant	Used in infection or bleeding of the genitor-urinary tract, dysentery, insect bites
12	*Polygonum plebeium*	Polygonaceae	Leaves	Pneumonia, bowl complaintsts
13	*Rumex martimus*	Polygonaceae	Leaves	Applied externally to burns
14	*Corchorus olitorius*	Tiliaceae	Entire plant	Tonic, diuretic
15	*Triumfetta rhomboidea*	Tiliaceae	Entire plant	Antioxidant activity, antitumor
16	*Abutilon indicum*	Malvaceae	Entire plant, Leaves	Diuretic, leprosy, anthelminthic, inflamation and ulcer
17	*Sida cordata*	Malvaceae	Entire plant	Used in fever,

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				arthritis, astringent
18	*Sida cordifolia*	Malvaceae	Entire plant, Leaves	Useful in dog bites, blister, cut
19	*S. rhombifolia*	Malvaceae	Leaves and root	Useful in blisters, hydrocyl, haemoptysis, stangury
20	*Urena lobata*	Malvaceae	Entire plant particularly leaves & flower	Cough, bronchitis, asthma, low back pain
21	*Hybanthus enneaspermus*	Violaceae	Root, leaves and tender stalk	Diuretic, demulcent & bowel complaints of children
22	*Turnera ulmifolia*	Turneraceae	Entire plant	Rheumatism, vertigo, dysmenorrhea, dysentery
23	*Passiflora foetida*	Passifloraceae	Leaves	Asthma, headache
24	*Cephalandra indica*	Cucurbitaceae	Entire plant	Used in homeopathy –Diabetes mellitus
25	*Capparis zeylanica*	Capparidaceae	Leaves, fruits	Eczema, boils, piles
26	*Cleome rutidosperma*	Capparaceae	Leaves	Wound healing activity
27	*Cleome viscosa*	Capparaceae	Leaves	Hepatoprotective activity
28	*Brassica nigra*	Brassicaceae	Seeds	Congestion, cough, culinary
29	*Cassia occidentalis*	Fabaceae	Leaves, flower, root bark	Tonic, rat-bite, hysteria, diarrhoea, whooping cough
30	*Cassia sophera*	Fabaceae	Leaves, flower, root bark	Cures rat-bite, hysteria, diarrhoea, whooping cough
31	*Clitoria ternatea*	Fabaceae	Seeds & root	Purgative, diuretic, bleeding piles, root used in toothache
32	*Crotalaria spectabilis*	Fabaceae	Seed	Hypertension
33	*Desmodium gangeticum*	Fabaceae	Entire plant	Used for treatment of fever, dropsy, musculoskeletal disorder
34	*Desmodium triflorum*	Fabaceae	Entire plant	Tonic, cold & cough
35	*D. polycarpum*	Fabaceae	Root & stem	Epilepsy and convulsive disorder
36	*Dolichos lablab*	Fabaceae	Leaves	Encourage lactation
37	*Mimosa pudica*	Fabaceae	Whole plant	Leaves used in toothache, gum bleeding, piles, dysentery, against

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				itching, scabies, urinary complaints
38	*Phaseolus radiatus*	Fabaceae	Seeds	Paralysis, rheumatism, cough, fever
39	*Spermacoce hispida*	Fabaceae	Entire plant	Stimulant, toothache
40	*Tephrosia purpurea*	Fabaceae	Whole plant	Tonic, anthelmintic
41	*Ammanrnia baccifera*	Lythraceae	Leaves	Wound healing activity
42	*Ludwigia adscendens*	Onagraceae	Leaves	Used in poultice for ulcers & skin disease
43	*Ludwigia parviflora*	Onagraceae	Plant	Contain gamma linolenic acid
44	*Acalypha indica*	Euphorbiaceae	Leaves	Cold, cough and ear pain
45	*Chrozophora rottleri*	Euphorbiaceae	Fruit	Cold and cough
46	*Croton bonplandianum*	Euphorbiaceae	Leaves & latex	Watery latex stop bleeding, antiseptic
47	*Euphorbia hirta*	Euphorbiaceae	Whole plant particularly latex	Dysentery, Vitiligo, cough, asthma, children's worm
48	*Euphorbia tirucalli*	Euphorbiaceae	Milky juice	Rheumatism & burn
49	*Jatropha gossypifolia*	Euphorbiaceae	Shoot & leaves	Boils, carbuncles, dental diseases
50	*Phyllanthus fraternus*	Euphorbiaceae	Whole plant	Gastric ulcer, stangury,, jaundice, hiccups
51	*Oxalis corniculata*	Oxalidaceae	Entire plant	Cooling, stomachic, scurvy
52	*Centella asiatica*	Apiaceae	Whole plant	Sedative, brain tonic, spasmolytic, tuberculosis
53	*Coriandrum sativum*	Apiaceae	Leaves, fruit	Stimulant, carminative, tonic
54	*Strychnos nux-vomica*	Loganiaceae	Seeds	Used in homeopathy
55	*Centaurium meyeri*	Gentianaceae	Leaves, seed	Use in homeopathy & ayurvedic medicine
56	*Nymphoides cristata*	Gentianaceae	Leaves	Boils, fever
57	*Catharanthus roseus*	Apocynaceae	Entire plant-Leaves	Diabetes, prevent blood cancer, high blood pressure, sedative
58	*Pergularia daemia*	Asclepiadaceae	Entire plant particularly-Leaves	Expectorant, anorexia, rheumatism, carbuncle, Ayurvedic preparation-Dasamularistha-

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				health tonic
59	*Hemidesmus indicus*	Asclepiadaceae	Entire plant particularly-Root	Scorpion-bite, tonic, Ayurvedic preparation-Saribadi Salasa, abdominal problem, herpes, lactation
60	*Physalis minima*	Solanaceae	Leaves	Use in earache or pus
61	*Solanum surattenes*	Solanaceae	Fruits	Diuretic, antibacterial activity
62	*Solanum sisymbriifolium*	Solanaceae	Fruits	Corticosteroids, used in oral contraceptive
63	*Solanum nigrum*	Solanaceae	Leaves	General debility, dysentery, anemia, diuretic
64	*Solanum varginianum*	Solanaceae	Dry plant	Cures stomach & liver complaints
65	*Evolvus nummularius*	Convolvulaceae	Entire plant	Used in cuts and bruises
66	*Evolvulus alsinoides*	Convolvulaceae	Whole plant	Improve memory, use in brain tonic, neurological diseases
67	*Ipomoea aquatica*	Convolvulaceae	Entire plant	Vegetable, nervous, general debility also relieves painful stings
68	*Ipomoea obscura*	Convolvulaceae	Leaves, flower & stem	Cure cold, asthma, dry cough, chest cold
69	*Ipomoea pes-tigridis*	Convolvulaceae	Root	Pargative, boils & curbuncles
70	*Ipomoea quamoclit*	Convolvulaceae	Leaves	Carbuncle & bleeding piles, blood dysentery, blood cough
71	*Heliotropium indicum*	Boraginaceae	Leaves	Conjunctivites, applied to wounds, boils and pruritus
72	*Heliotropium ovalifolium*	Boraginaceae	Aerial parts	Antifungal activity (Heliotropamide)
73	*Clerodendrum inerme*	Verbenaceae	Whole plant	Arthritis and antifungal
74	*Clerodendrum viscosum*	Verbenaceae	Leaves & roots	Skin disease, tumour
75	*Lantana camara*	Verbenaceae	Leaves & roots	Antibacterial, antipyretic, healing of gastric ulcer, gargle for toothache

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76	*Lippia geminata*	Verbenaceae		
77	*Phyla nodiflora*	Verbenaceae	Entire plant	Bleeding gums, indigestion
78	*Vitex negundo*	Verbenaceae	Leaves	Treat bedsores, boils, dandruff, gout, asthma, reduces abdominal fat
79	*Anisomeles indica*	Lamiaceae	Leaves	Antimicrobial and antibacterial
80	*Anisomeles ovata*	Lamiaceae	Entire plant	Tonic
81	*Leonotis nepetifolia*	Lamiaceae	Leaves, flowers	Tonic, ring worm & skin disease, fever, malaria
82	*Leonurus sibiricus*	Lamiaceae	Entire plant	Febrifuge
83	*Leucas aspera*	Lamiaceae	Leaves	Treat ulcer in tongue, scabies, anorexia, insecticide
84	*Leucas cephalotes*	Lamiaceae	Whole plant	Use in snake bite, diaphoretic, used in liver disorder and fever
85	*Ocimum basilicum*	Lamiaceae	Leaves	Treat cold & cough, dysentery, diarrhoea, diuretic, carminative
86	*Ocimum sanctum*	Lamiaceae	Leaves & seed	Expectorent, cold, cough, bronchitis, used in scorpion sting
87	*Bacopa monnieri*	Scrophulariaceae	Whole plant	Major constituent of ayurvedic preparation-Brahmirasayan, act as memory enhancer, improves vitality, epilepsy and watery semen
88	*Lindenbergia indica*	Scrophulariaceae	Shoot	Bronchites
89	*Lindernia antipoda*	Scrophulariaceae	Whole plant	Antioxidant activity-neuroprotective
90	*Lindernia crustacea*	Scrophulariaceae	Leaves	Ring worm, itches, sores
91	*Lindernia parviflora*	Scrophulariaceae	Whole plant	Irregular menstruation
92	*Mecardonia procumbens*	Scrophulariaceae	Whole plant	Ayurvedic medicine
93	*Scoparia dulcis*	Scrophulariaceae	Whole plant	Emetic, leucorrhoea, mouth ulcer, antidiabetic
94	*Justicia adhatoda*	Acanthaceae	Leaves	Asthma, cough, bronchitis, tonic

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95	*Andrographis paniculata*	Acanthaceae	Leaves, stem, roots	Tonic, dysentery and dyspepsia, malaria, carbuncles, Kalamegha
96	*Barleria prionoitis*	Acanthaceae	Leaves & roots	Toothache, boils treat bleeding gums
97	*Ecbolium linneanum*	Acanthaceae	Whole plant	Ayurvedic medicine in jaundice, menorrhagia, rheumatism, disuria
98	*Hemigraphis hirta*	Acanthaceae	Whole plant	Dysentery, mouth ulcer
99	*Hygrophila spinosa*	Acanthaceae	Whole plant	Dissolve stones in kidney and gall bladder, increasing haemoglobin content in blood
100	*Justicia gendarussa*	Acanthaceae	Leaves and stem	Used for respiratory disorder, also chronic rheumatism
101	*Peristrophe paniculata*	Acanthaceae		Tuberculostatic, analgesic, astringent, wound healing, antibacterial
102	*Ruellia tuberosa*	Acanthaceae	Leaves & roots	Leaves in earache, root in gonorrhoea
103	*Rungia pectinata*	Acanthaceae	Aerial parts	Antiinflammatory, diuretic, antimicrobial
104	*Sesasum indicum*	Pedaliaceae	Seed	Sesame oil is used for health treatment of the body and teeth, plant contain amino acids and fatty acids-antioxidant
105	*Dentella repens*	Rubiaceae	Leaves	For poulticing sores
106	*Oldenlandia corymbosa*	Rubiaceae	Whole plant	Used in liver disorder, skin ulcer, spleen disorder, in burning sensation of the body
107	*Spermacoce hispida*	Rubiaceae	Bark	Astringent, cooling, eye disease
108	*Ageratum conyzoides*	Asteraceae	Whole plant --Leaves	Prevents bleeding from cut, wounds & sores
109	*Bidens biternata*	Asteraceae	Root	Amoebic dysentery
110	*Blumea laciniata*	Asteraceae	Leaves	Used in better hair growth
111	*Eclipta alba*	Asteraceae	Leaves	Tonic, jaundice

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112	*Eclipta prostrata*	Asteraceae	Whole plant	Headache and soothes noisy sleep, Major constituent of ayurvedic preparation- Kalokesurja taila- a hair oil.
113	*Elephantopus scaber*	Asteraceae	Roots & leaves	Diabetes, diarrhoea
114	*Enhydra fluctuans*	Asteraceae	Whole plant	Laxative, used in flatulence
115	*Eupatorium odoratum*	Asteraceae	Leaves	Stop bleeding from wounds-blood coagulation
116	*Gnaphalium luteo-album*	Asteraceae	Leaves	Astringent
117	*Sonchus asper*	Asteraceae	Leaves & root	Febrifuge, hepatic
118	*Sphaeranthus indicus*	Asteraceae	Whole plant	Laxative, vomiting, tuberculosis, anthelmintic & alexipharmic
119	*Synedrella nodiflora*	Asteraceae		
120	*Tagetes erecta*	Asteraceae	Leaves & flower	Treat stomachache, liver disorder, vomiting, hiccups, piles, uterine infection
121	*Tridex procumbens*	Asteraceae	Leaves	Haemostatic, ayurvedic preparation -Bhringraj
122	*Vernonia cinerea*	Asteraceae	Whole plant	Cures leucoderma, other skin disease, piles, toothache, desyntery
123	*Xanthium strumarium*	Asteraceae		Used in traditional medicine in South Asia
124	*Aneilema nudiflorum*	Commelinaceae	Whole plant	Leprosy
125	*Commelina benghalensis*	Commelinaceae	Whole plant & latex	Laxative, leprosy, earache
126	*Eriocaulon heterolepis*	Eriocaulaceae	Whole plant	Ayurvedic drug
127	*Cyperus rotundus*	Cyperaceae	Whole plant	Cures dyspepsia, dysentery, epilepsy, act as an antidote against bites of wasps
128	*Kyllinga nemoralis*	Cyperaceae	Whole plant	Used against snake-bites
129	*Aristida purpurea*	Poaceae	Whole plant	Stomachache

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130	*Cynodon dactylon*	Poaceae	Whole plant	Cuts &wounds, hysteria, epilepsy,antibleeding
131	*Sporobolus heterolepis*	Poaceae	Whole plant	Nutritious, supplement of food
132	*Curculigo orchioides*	Amaryllidaceae	Rhizome & root	Appetizer, useful in treatment of piles, arthritis and joint pain
133	*Asparagus racemosus*	Liliaceae	Root	Major constituent of ayurvedic preparation- Dasamularistha, Asvagandharistha, roots are diuretic, sex enhancer, sperm enhancer
134	*Smilax zeylanica*	Liliaceae	Roots	Venereal disease, rheumatism
135	*Dioscorea bulbifera*	Dioscoreaceae	Rhizome	Dysentery, piles & ulcer
136	*Vanda roxburghii*	Orchidaceae	Whole plant	Major constituent of ayurvedic preparation- Dasamularistha and salasa, health tonic

Medicinal plants are in great demand in modern civilization to extract various drugs for human welfare. Appreciation for the preventive and therapeutic value of herbal remedies and the additional benefits of their low cost and cultural relevance remains strong in many traditional cultures. At the same time, the capacity, experience and expertise developed for medicinal plant resource management will contribute more broadly to biodiversity resource management capability in any natural and social environment where plants are used as medicines [8]. Bankura district with its vast and diverse climatic zones harbours a large

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number of plants including those of medicinal values. It is impossible to ensure protection and utilization of a special environmental protection plan in a scientific manner without having full knowledge of flora and fauna of the area [9, 10].

It can be concluded that the local and tribal people of the district have very good knowledge on the use of medicinal plants. Such kind of floristic studies in this area are to be carried out for its comprehensive coverage and to generate information on the changes occurring in the components of the area during different seasons, under the influence of various climatic and biotic factors. It is hoped that documentation of such information will play an important role in framing medicinal plant conservation policies in a sustainable way. Protection and preservation of ethnomedicinal weed plants in their natural area is necessary for conservation of these plants for future research for rapid accessing of phyto-constituents and proper exploitation for sustainable use and cultivation.

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