

Weeds of Cachar district of Assam and their ethno-botanical uses

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Received : May, 2011; Accepted : July, 2011

SUMMARY

The present paper deals with a total of 80 species and 69 genera belonging to 34 families of weeds of Cachar district of Assam are recorded herein. Out of these 80 species, 44 ethno-medicinal plants are recorded which are used for the treatment of different diseases by the tribal community of the district viz., minor cuts and wounds, diarrhea, dysentery, eye diseases/ cataract, fever, gastric and indigestion, high blood pressure, jaundice, skin diseases, stomachache, toothache, earache, vomiting, asthma, liver diseases, jaundice, menstrual disorder, piles etc. Weeds are known as unwanted plants but rural and tribal communities of the district used them for treatment of different diseases, for edible purpose etc. Geographically, Cachar district of South Assam or Barak Valley of North East India is surrounded by North Cachar Hills and Khasi and Jaintia on the north, Mizoram on South, Manipur on East and Tripura state on West. The area has an altitude of 26-27m above sea level and this falls under 24.8' and 25.8'N latitude and 92.15' and 93.15' E longitude. The area with diverse habitats, including hill and some wetlands are suitable for conserving the diversity of plants. Summer seasons are for the luxuriant growth of the species and the family Asteraceae and Poaceae comprise the highest number of weed species of Dicotyledones and Monocotyledones of Angiosperms, respectively. In the present paper an attempt has been made to highlight the unique diversity of weeds and their ethno-botanical uses.

Baruah, M.K., Chakraborty, G. and Choudhury, M. Dutta (2011). Weeds of Cachar district of Assam and their ethno-botanical uses. *Internat. J. Plant Sci.*, 6 (2): 338-342.

Key words : Weeds, Unwanted plants, Ethno-botany, Cachar district

Weeds are unwanted grasses or the plants growing where they are not desired. Since then several definitions of weeds have been suggested and a comprehensive and widely accepted one is a weed is a plant growing out of place and out of time. When such plants become constant associate with other plants they can be termed as weeds which may be annual weed - the weeds which complete their seed to seed life cycle during a crop season and then wither away at the end of the season, biennial weeds- complete their life cycle in two seasons and then wither away and perennial weeds- which persist in an ecosystem for more than two years and are equipped with potential to regroup time and again from their underground rhizome and tuber. Such weeds which are associate with aquatic plants and grow within and

around water bodies of fresh water like lakes, ponds, rivers etc may be called as aquatic weeds; and those weeds which flourish with specific crop and associate with cultivated plants are termed as crop field weeds. Further, it is also commonly termed as road side weeds, land weeds, noxious weeds etc.

Growing with the crop plants, weeds cause tremendous reductions in crop yields and elevate their production costs in varied ways. Several scientists have estimated such losses in crop yields in different parts of India. A very broad-based average of these estimates shows that weeds reduced productivity of wheat by 15-30%, of rice by 30-35%, and of maize, sorghum, pulse, and oilseeds by 18-85% each. There are also frequent cases of complete crop failures due to weeds, particularly in the upland rice and vegetable crops.

Several well known weeds have been of certain economic uses since ages, particularly their medicinal use is perhaps the most ancient one in India. *Saccharum spontaneum* and species of *Typha* are used in cottage industry for making ropes and thatch material. Weeds like *Chenopodium album*, *Amaranthus viridis* and *Portulacaceae* sp. are good leafy vegetables. Dry shoots of *Cyperus tegedium*, *Clinogyne dichotoma* are used on large scale to make mats. Sticks of *Lantana camara*

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have been used to make furniture. More recently, certain weeds have exhibited nematicidal properties. Their incorporation into the soil has been found to result in reduced rootknot nematode population. Some promising weeds in this reservoir are *Crotalaria*, *Parthenium*, *Calotropis*, and *Eichhornia* spp.

Geographically, Cachar district South Assam or Barak Valley of North East India is surrounded by North Cachar Hills and Khasi and Jaintia on the north, Mizoram on South, Manipur on East and Tripura state on West. The area has an altitude of 26-27m above sea level and this falls under 24.8° and 25.8° N latitude and 92.15° and 93.15° E longitude. Barak, Jiri and Siri are the main river of the district. The soil type is alluvial. Soil texture is sandy, loamy and silt type depending on their silt and sand content. The pH of the soil varies 5.0- 6.5 or around neutral. The climate of the district is very hot with dry cold seasons. The average temperature of the district lies in between 15-35 C. The average annual rainfall of the district is around 300 mm and average atmospheric humidity is 75- 85%.

MATERIALS AND METHODS

For the study intensive field visits were made during the year 2007-2009. A substantive amount of species were collected from the study area and critically studied them in their natural habitats, their vegetation, flowering and fruiting stage etc. The observations were noted in the field note book, with special reference to their habit and habitats and native uses if any. Herbarium methods and techniques were followed as suggested by Jain and Rao (1977). For authentic identification of the collected specimens, Flora of Assam (vols. 1-4, Kanjilal and Bor, 1934-1940) and Flora of British India (vols. 1-7, Hooker 1872-1897) were consulted and finally confirmed by consulting experts and herbarium of Botanical Survey of India, E.C., Shillong. All the specimens collected were deposited in the herbarium at Cachar College Botany Department, Silchar, Assam.

RESULTS AND DISCUSSION

Table 1 showing the different species of weeds of Cachar district with their correct scientific names, families, habitat and distribution, method of propagation

Table 1 :				
Families	Name of species	Habit/habitat and distribution	Method of propagation	Traditional uses
Nymphaeaceae	<i>Nymphaea stellata</i> Willd	Aquatic herb; common	Seeds, offset	Tuberous rhizome and peduncle used as vegetables and flowers in ritual
Nelumboideae	<i>Nelumbo nucifera</i> Gaertn.	Aquatic herb; common	Seeds, offsets	Flowers used as ritual
Papaveraceae	<i>Argemone maxicana</i> L.	A prickly winter annual herb; common in waste places	seeds	Leaves applied locally in skin diseases
Cruciferae	<i>Capsella bursa-pastoris</i>	A winter annual herb; common	seeds	-
	Medic <i>Nasturtium indicum</i> DC	A winter annual herb	Seeds	-
Capparidaceae	<i>Cleome viscosa</i> L.	An erect annual summer herb	Seeds	-
	<i>C. gynandra</i> L.	An erect winter and summer annual herb	Seeds	Leaf juice in earache
Caryophyllaceae	<i>Stellaria media</i> (L.) Vill.	An annual procumbent soft small herb	Seeds	Leaf juice is used in stomachache
Portulacaceae	<i>Portulaca oleracea</i> L.	A winter annual succulent herb	Seeds, vegetative shoots	Leaves used as vegetables
Malvaceae	<i>Abutilon indicum</i> (L.) Sweet.	An annual under shrub	Seeds	Leaf paste in skin diseases
	<i>Sida rhombifolia</i> L.	A biennial/ perennial under shrub	seeds	-
Oxallidaceae	<i>Oxalis corymbosa</i> DC.	Most obnoxious weeds in cultivated areas	Bulbils	Leaves used as salad
	<i>O. corniculata</i> L.	An annual prostrate small herb	Seeds	Leaves used as vegetables

Contd... Table 1

Table 1 contd....

Balsaminaceae	<i>Impatiens Balsanina</i> L.	An annual erect herb	Seeds	Cultivated as ornamental plants
Caesalpiniaceae	<i>Cassia sophera</i> L.	A annual under shrub	Seeds	-
Mimosaceae	<i>Mimosa pudica</i> L.	A straggling winter shrub	Seeds	Roots and young leaves are used to cure dysentery
Onagraceae	<i>Ludwivia octavilis</i> (Jacq.) Raven.	An annual summer and winter herb mostly grows on rice field	Seeds	Leaves are used in diarrhoea
Umbelliferae	<i>Hydrocotyle rotundifolia</i> Roxb	An annual creeping herb	Seeds, runner	Use as vegetable
Rubiaceae	<i>Boreria hispida</i> (L) K. Schum.	A much branched obnoxious perennial herbs in tea garden areas	seeds	Fresh leaves extract is used to stop bleeding in cuts and injuries
	<i>Oldanlandia diffusa</i> (Willd.) Roxb.	An annual diffuse prostrate herb	Seeds	-
	<i>O. corymbosa</i> L.	An annual summer and winter herb	Seeds	Leaf extract is used in eye diseases.
Asteraceae	<i>Aegeratum conyzoides</i> L.	A summer and winter annual aromatic herb	seeds	Fresh leaves juice is used in cuts wounds
	<i>Eclipta prostata</i> L.	An erect summer and winter annual herb	Seeds	Root and stems are used as Medicines
	<i>Elephantopus scaber</i> L.	A biennial semi-woody plants	Seeds	Roots is used as Abscess
	<i>Enhydra fluctuans</i> Lour.	An annual summer and winter herb	Seeds	Used as vegetable
	<i>Eupatorium odoratum</i> L. var. <i>Chromolena odorata</i> L.	An annual/ perennial straggling shrub	Seeds, root stock	Leaf paste is applied locally in toothache
	<i>Gnaphalium indicum</i> L.	A winter annual cottony herb	Seeds	-
	<i>Mikania micrantha</i> H.B.K.	A gregarious perennial climbers	Seeds, old root stock	The crushed leaves are used in minor cuts
	<i>Parthenium hysterophorum</i> L.	A perennial herb	seeds	-
	<i>Spilentes paniculata</i> Wall ex Dc.	A summer and winter annual herb	Seeds	used in toothache and worm infestations
	<i>Vernonia cineria</i> L.	A summer and winter annual herb	Seeds	Whole plant is used as medicine (Menstrual, disorder)
	<i>Xanthium stramarium</i> L.	A summer annual	Seeds	whole plant is used as Medicine
Boraginaceae	<i>Heliotropium indicum</i> L.	A summer annual herb	Seeds	-
Convolvulaceae	<i>Ipomoea aquatica</i> .	A perennial weeds	Seeds, surface roots	Leaves used as vegetable
	<i>Ipomoea fistulosa</i> L.	A perennial obnoxious herb	Seeds, vegetative shoots	-
	<i>I. digitata</i> L.	A perennial climber	Seeds	-
Evolvulaceae	<i>Evolvulus numularius</i> L.	A small annual creepers	Seeds	-
Solanaceae	<i>Solanum. torvum</i> Swartz.	An annual under shrub	Seeds	-
	<i>S. nigram</i> L.	An erect summer and winter annual herb	Seeds	Fruit and leaf extract is used in indigestion and in liver diseases
Schrophuliaceae	<i>Scoparia dulcis</i> L.	An erect summer and winter annual herb	Seeds	-
	<i>Torenia flava</i> Ham.	An erect annual herb	Seeds	-
	<i>Vandellia scraba</i> Benth	A straggling annual herb	Seeds, old root stock	-

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Table 1 contd....

Verbanaceae	<i>Lantana camara</i> L.	A obnoxious perennial shrub	Seeds	Leaf Paste is used in various skin diseases and also to stop bleeding
	<i>Clerodendron Viscosum</i> Vent	A tough perennial shrub	seeds	Fresh young leaves juice is used in dysentery and high blood pressure
	<i>Dysophyla auriculata</i> Blume	An winter annual herb	Seeds	-
Lamiaceae	<i>Leucas aspera</i> L.	An erect annual aromatic herb	Seeds	leaves and flowers are cooked
	<i>Leonarus sibiricus</i> L.	An erect summer annual herb	Seeds	-
Plantaginaceae	<i>Plantago major</i> L.	A persistent perennial weeds found on damp places	Seeds	-
Amaranthaceae	<i>Achyranthes aspera</i> L.	An erect winter annual herb	Seeds, old root stock	Fresh roots and leaves extract is used in Asthma and in piles
	<i>Alternanthera sessilis</i> R. Br.	A much branched prostrate summer and winter annual herb	Seeds	-
	<i>Amaranthus spinosus</i> L.	A much branched erect summer and winter annual herb	Seeds	Use as vegetable
	<i>A. viridis</i> L.	A much branched erect summer and winter annual herb	Seeds	Use as vegetable
Chenopodiaceae	<i>Chenopodium album</i> L.	An annual summer and winter herb	Seeds	Use as vegetable
Polygonaceae	<i>Polygonum hydropiper</i> L.	A winter annual grows on moist places	Seeds	-
	<i>P. strigosum</i> Br.	An annual straggling shrub	Seeds, old root stock	-
	<i>P. hamiltpnii</i> Spreng	An erect annual summer herb	Seeds	-
Piperaceae	<i>Peperomia pellucida</i> H.B.& K	A soft annual pale green color herb	Seeds	-
	<i>Phyllanthus niuri</i> L.	An erect annual summer and winter herb	Seeds	Leaves and fruits are used in jaundice.
	<i>Euphorbia hirta</i> L.	An annual summer and winter herb	Seeds	-
Euphorbiaceae	<i>Croton bonplandium</i> L.	An annual or biennial under shrub	Seeds	Leaf extract is used in cataract eye
Cuscutaceae	<i>Cuscuta reflexa</i> Roxb.	A perennial parasitic herb	Seeds, vegetative shoots	Extract juice is given to cure in jaundice
Pontederiaceae	<i>Eichhornia crassipes</i> , Solms	An annual herb grows and float on water	Seeds, sucker, offsets	-
	<i>Monochoria hastaeifolia</i> Presl..	A sub-erect annual, grows in water and water logging places	Seeds, vegetative shoots	Stem juice is applied on minor cuts and wounds
Commelinaceae	<i>Commelina benghalensis</i> L.	An annual winter soft herb	Seeds, nodes	-
	<i>Floscopa scandens</i> Lour.	A summer annual herb	Seeds, nodes	-
	<i>Cyperus brevifolius</i> L.	A perennial erect herb	Seeds, tuber	Leaf extract used in diarrhoea
	<i>C. rotundus</i> L.	A perennial herb	Tuber, sucker	Rhizome paste applied in toothache
	<i>C. pilosus</i> Vahl.	An annual summer erect plant	Seeds, tuber	Plants used as fodder
Cyperaceae	<i>Fimbristylis miliacea</i> (L.) Vahl.	An annual summer herb	Seeds, suckers	-
	<i>Scripus articulatus</i> , L.	An annual summer herb	Seeds, tubers	-

Contd.... Table 1

Table 1 contd....

Poaceae	<i>Echinochloa colonum</i> L.	A summer annual grass	Seeds, suckers	-
	<i>Eragrostris uniloides</i> (Retz) Nees	A summer annual grass	seeds	-
	<i>Imperata cylindrical</i> (L.) Beauv.	Most obnoxious grass grows in tea garden areas	Seeds, runner	-
	<i>Andropogon ascinoideis</i> (Retz) Trin.	Perennial prostrate grass	Seeds, from old stocks	Rhizome paste is applied on minor cuts and wounds
	<i>Axonopus compressus</i> (Sw) Beauv.	Perennial grass	Seeds, nodes of horizontal branch	-
	<i>Cynodon dactylon</i> (L) Pers	Common perennial grass grows almost everywhere	Seeds, old stock	The whole plant is used in vomiting and burning sensation.
	<i>Eleusine aegyptia</i> (L) Desf.	An erect summer annual grass	seeds	-
	<i>Paspalum scrobiculatum</i> L.	An annual summer grass	Seeds, runner	-
	<i>P. conjugatum</i> Berg.	An erect annual summer grass	Seeds, runner	-
	<i>Saccharum spontaneum</i> L.	A perennial hardy grass	Seeds, runner	Stem is used for making wall or hedges plant

and traditional uses if any.

A total of 80 weed species belonging to 69 genera and 34 families have been recorded from the various crop fields, waste places, roadsides occurring throughout the year. Out of these weed species, 61 species belongs to dicotyledones and 19 species belong to monocotyledones. Asteraceae and Poaceae comprise the highest number of species (11 and 10, respectively) and thus they predominate over the other observed families. Out of these 80 species, 44 ethno-medicinal plants are recorded which are used for the treatment of different diseases by the tribal community of the district viz., minor cuts and wounds, diarrhea, dysentery, eye diseases/ cataract, fever, gastric and indigestion, high blood pressure, jaundice, skin diseases, stomachache, toothache, earache, vomiting, asthma, liver diseases, jaundice, menstrual disorder, piles etc

Some of the weeds species grow abundantly well in Cachar district, but no research has been conducted on these valuable plants. It requires immediate ethno-ecological study for the cultivation and conservation of these weeds plants of Cachar District of Assam. Conservation activities should be concerned with all medicinally important species.

There is a greater need to combine ethno-botanical information with ecological studies of ethno-medicinal weeds species.

Acknowledgment:

The author are grateful to Deputy Director, B. S. I., Eastern Circle, Shillong, Ministry of Environment And Forest, Govt. of India, for providing herbarium and library facilities for identification of plants.

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