

Weeds of medicinal importance and their utilization as a way of management

M. K. Bhowmick¹, R. K. Ghosh², B. Duary³, P. Bhattacharyya⁴ and A. K. Dolai²

¹Department of Agriculture, Rice Research Station, Chinsurah -712 102, Hooghly, West Bengal

²Department of Agronomy, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur 741 235, Nadia, West Bengal, India;

³Department of ASEPAN, Institute of Agriculture (Palli Siksha Bhavana), Visva-Bharati, Sriniketan 731 236, Birbhum, West Bengal, India;

⁴Department of Agriculture, Writers' Buildings, Kolkata 700 001, West Bengal, India

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Abstract

Weeds are a gift of nature having beneficial and / or harmful effects. However, a number of weeds have specific medicinal values for which they can well be used for herbal remedies from several ailments of human and pet animals such as *Abelmoschus moschatus* (used as cardiogenic), *Andrographis paniculata* (used for therapeutic purpose), *Calotropis gigantea* (used for pile, cough, dropsy, skin diseases, etc.), *Solanum xanthocarpum* (used for bronchitis, asthma, etc.), *Solanum nigrum* (used in liver disorders and swellings), *Eclipta alba* (used as hair tonic and also in liver / spleen disorders), *Ocimum sanctum* (used for cough and cold treatments of children), *Leucas aspera* (used against snakebite), *Achyranthes aspera* (used against dysentery, cough, toothache, stomachache, piles and skin eruptions), etc. Similarly, there are a good number of weeds which can be used for curing animal ailments, e.g. *Achyranthes aspera*, *Cassia fistula*, *Commelina benghalensis*, *Datura alba*, *Phyllanthus niruri*, *Parthenium hysterophorus*, etc. All these indicate that the weeds need to be managed properly.

INTRODUCTION:

Every plant in the earth should be considered as valuable. Because each and every plant has some contribution to make some thing that justifies its existence. Weeds are the plants grown where and when they are not desired. Actually, they are the gift of nature having beneficial and / or harmful effects. Studying their beneficial aspects towards utilization in a number of ways for humans and the society as a whole is called "Ethnobotany". Weeds can be utilized as vegetables, pot herbs, fodder, fibre, oil, fuel, dyes, tannins, medicine or as a source of plant nutrients (Das, 2008). However, a number of weeds have specific medicinal values. On account of their medicinal values, they can well be used for herbal remedies from several ailments of human and pet animals (Deo and Mukundan, 2005; Ghosh *et al.*, 2008; Mandal *et al.*, 2005; Naidu and Tiwari, 2009). The present paper is aimed at illustrating some common weeds with their potential medicinal values and economic utilization as a way to manage weed menace.

Brief account of medicinal weeds:

It has been estimated that 75-80 per cent of world population depends on crude plant drug preparations to tackle their health problems mostly because of economic considerations (Dev, 2006). These herbal medicines are in great demand in both developed and developing countries in primary health care for their great efficacy with little or no side effects. Several annual and perennial plant species grow spontaneously under natural as well as man-made altered habitats. The plant species which grow in crop fields or any other areas where they are not required due to use of the land for other purposes and cause more harms as compared to benefits are considered as weeds. Obviously, these weeds are to remove or eradicate time to time from cropped or non-cropped areas to get the desired benefits from that area (Naidu and Tiwari, 2009). But there are many examples that most of these weeds have great potential for use as medicine although very little work has been carried out on this aspect. Some weeds are indispensable in ancient medical herbal pharmacies and are still used for medicine today. There exists wide scope of preparing herbal medicine from *Croton sparsiflorus*, *Leucas aspera*, *Cynodon dactylon*, *Tridax procumbans*, *Allium vineale*, *Gynandropsis pentaphylla*, *Ocimum basilicum*, *Cannabis sativum*, *Artemisia capillaries*, *Tephrosia purpurea*, *Physalis minima*, *Ageratum haustonianum*, *Cynodon dactylon*, *Cyperus rotundus*, *Leonurus sibiricus*, *Jatropha multifida* and many other weeds. However, a list of such weeds used for the treatment of human ailments / diseases is given in Table 1 although it is not the exhaustive one. Similarly, there are a good number of weeds which have been found suitable for curing different animal ailments / diseases (Table 2).

Weed utilization -- a tool for management:

Considering medicinal importance of weeds, they need to be exploited and managed in a proper way. There are several options available for controlling or managing the weeds. Amongst them, the strategy for weed utilization seems to be an effective tool. Because, the users / farmers can earn income simply by utilizing them as medicine, instead of spending money for their management, and simultaneously they can achieve control. The systematic and scientific investigation on the properties of weeds in medicine started about 40 years back. The utilization of weeds as raw materials for the preparation of drugs has, however, been increasing by many folds and today it is a million rupee business in many states of India (Sushilkumar, 2010).

CONCLUSION:

There is dire need for further intensive studies which may provide valuable information to phytochemists, pharmacologists, etc. in assessing some useful drugs. The medicinal weed species traditionally used by the villagers / farmers should be properly tested to confirm about their safety and efficacy. Such ethnobotanical study has enough scope to use indigenous technical knowledge in order to cure / treat several human / animal ailments. Therefore, due attention needs to be paid towards proper exploitation and utilization of beneficial properties of weeds along with their scientific conservation, preservation, propagation and, to a certain extent, their domestication.

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Table 1. Medicinal weeds used for the treatment of different human diseases / ailments

Botanical name	Family	Local name	Uses
<i>Abelmoschus moschatus</i>	Malvaceae	Mushakdana, Kalokasturi	Seeds are cooling, demulcent, diuretic, stimulant, carminative, stomachic, antispasmodic, aphrodisiac and tonic; in the form of paste it is useful in leucoderma; along with milk seed paste is used to cure itch. Infusion, decoction or tincture of the seeds is useful in stomatitis, atonic dyspepsia, nervous debility, hysteria and other nervous disorders. It is used as a drink in fevers, gonorrhoea and as an inhalation in hoarseness and dryness of the throat. Fresh juice of the plant is febrifuge and expectorant. It is also used as cardio tonic.
<i>Achyranthes aspera</i>	Amaranthaceae	Apang, Prickly-chaff flower	It has pungent, purgative, diuretic and astringent properties, and is also used in dropsy and piles. The whole plant extract is good for kidney troubles. Leaf juice is used in stomachache, piles and skin eruptions. Root powder is used in cough and toothache. Root extract is also used against dysentery. It is an antidote for poison of snakes and scorpions.
<i>Andrographis paniculata</i>	Acanthaceae	Kalmegh, Creat	The plant extracts exhibits antityphoid and antifungal activities. It is also reported to possess antihepatotoxic, antibiotic, antimalarial, antihepatitic, antithrombogenic, anti-inflammatory, anti-snake venom, and antipyretic properties. It is used for therapeutic purpose.
<i>Argemone mexicana</i>	Papaveraceae	Satyanashi, Siyalkanta	Yellow plant juice is diuretic and also given in dropsy, jaundice, skin diseases and gonorrhea. Root decoction is used for eye wash and mouth wash whereas lotion is used for inflammatory swellings and against scorpion sting. Seed oil is purgative, narcotic and demulcent, and applied locally over skin diseases. It is good for stomach troubles when taken with sugar.
<i>Calotropis gigantea</i> (red flowered) and <i>C. procera</i> (white flowered)	Asclepiadaceae	Akand, Gigantic milkweed	Root bark is a remedy for piles, cough, dropsy and skin diseases. Root is also antidote to poison. Latex is purgative mainly because of <i>mudarine</i> present in it. The tincture of leaves is useful in intermittent fevers. Flowers are tonic, stomachic and digestive. Dried flowers are used in leprosy, secondary syphilis and gonorrhoea. Leaves with pepper are used against snakebite.
<i>Centella asiatica</i>	Apiaceae	Thankuni, Indian pennywort	It is a tonic, diuretic, antiphlogistic, aperient, blood purifier and local stimulant. The powder of plant is given with milk in small doses to improve memory. Plant decoction is used against leprosy.
<i>Cynodon dactylon</i>	Poaceae	Durbaghas	It is antiseptic. Live plants are chewed and put immediately on cut-wounds as first-aid to stop bleeding. Plant extracts are useful against asthma, dysentery and diarrhoea. Infusion of the plant stops bleeding in piles.
<i>Eclipta alba</i>	Asteraceae	Kesuti, Trailing eclipta	It is used as hair tonic and also in liver / spleen disorders. The whole plant has emetic, purgative and tonic properties, also deobstruent in hepatic and spleen enlargements. The plant is highly useful in curing cough, asthma, anemia, jaundice, catarrh and

			ulcers. Leaf is a good remedy for scorpion sting. Root is useful for skin diseases. The plant extract is useful to remove baldness.
<i>Euphorbia hirta</i>	Euphorbiaceae	Dudhia	It is useful in bronchial affections, asthma and colic. Plant stimulates secretion and flow of milk in women. It is also useful in gonorrhoea and other urinogenital complaints. Roots stop vomiting and milky juice of plant is applied in warts.
<i>Heliotropium indicum</i>	Boraginaceae	Hatisur	The plant is chiefly used as an herbal medicine. The extracted juice from the pounded leaves of the plants is used to cure wounds, skin ulcers and furuncles. The juice is also used as an eye drop for conjunctivitis ("pink eye" or <i>Jai Bangla</i>). The pounded leaves are used as poultice.
<i>Hygrophila auriculata</i>	Acanthaceae	Kulekhara	It is useful in dropsy, jaundice and diseases of urinogenital system. Seeds are useful in venereal diseases. The drugs obtained from the plant leaves are useful in cough and urethral discharges.
<i>Leucas aspera</i>	Lamiaceae	Chota halkusha, Thumbe	The plant is used traditionally as an antipyretic and insecticide. Flowers are valued as stimulant, expectorant, aperient, diaphoretic, etc. Leaves are considered useful in chronic rheumatism, psoriasis and other chronic skin eruptions. Bruised leaves are applied locally in snake bites.
<i>Mimosa pudica</i>	Fabaceae	Lajjavati	Root is useful in asthma and blood diseases.
<i>Ocimum sanctum</i>	Lamiaceae	Tulsi, Holy basil	Leaf extract with little honey is often given to small children in cough and cold. Leaf infusion is useful against malaria and skin diseases.
<i>Solanum nigrum</i>	Solanaceae	Makoy	The juice of the fresh herb is sometimes used for fever and to allay pain. Externally, the juice or an ointment prepared from the leaves can be used for skin problems and tumours. The fruit is used for diabetes. Decoction of stalk, leaves, roots are good for wounds and cancerous sores. An infusion of the plant is used as an enema in infants having abdominal upsets. Freshly prepared extract of the plant is effective in the treatment of cirrhosis / swellings or other disorders of the liver and also serves as an antidote to opium poisoning.
<i>Solanum xanthocarpum</i>	Solanaceae	Kantakari	The plant has bitter, carminative, expectorant and astringent properties and is used in bronchitis, asthma, cough, fever and dropsy etc. It is ingredient of dashmul and chavanprash. The white variety is known for sure birth of a son in the Ayurvedic literature.
<i>Tephrosia purpurea</i>	Fabaceae	Wild indigo / Bananil	The plant acts as laxative and tonic. Roots are bitter and recommended against diarrhoea. Fruit decoction is vermifugal.

Table 2. Medicinal weeds used for the treatment of different diseases / ailments of pet animals

Botanical name	Family	Local name	Uses
<i>Achyranthes aspera</i>	Amaranthaceae	Apang	The decoction of the plant is given to cattle for cough, indigestion, joint pain and inflammation of the breast. The paste made by the plant is applied to heal the wounds of cattle, especially of camels.
<i>Ammania baccifera</i>	Lythraceae	Dadmari	Leaves are useful to blister skin and leaf extract in small concentrations / doses can put down sexual appetite of animals in heat.
<i>Cassia fistula</i>	Caesalpiniaceae	Sonaalu	Whole seed powder is used for the treatment of intestinal amoebiasis.
<i>Centella asiatica</i>	Apiaceae	Thankuni / Brahmi	Leaves when used as fodder increase the secretion of milk in cows.
<i>Commelina benghalensis</i>	Commelinaceae	Banspatighas	Its leaves mixed with powdered seeds of <i>Cassia fistula</i> are used to cure animals suffering from swollen stomach.
<i>Croton sparsiflorus</i>	Euphorbiaceae	Ban marich	The stem juice acts as a medicine to stop bleeding in cut wounds of animals.
<i>Datura alba</i>	Solanaceae	Dhatura	2-3 leaves mixed with wheat bread, if given to cattle twice daily, can cure diarrhoea.
<i>Parthenium hysterophorus</i>	Asteraceae	Parthenium	Decoction is used for external application on skin disorders, flea repellent, both for dogs and other animals.
<i>Phyllanthus niruri</i>	Euphorbiaceae	Hazardana / Bhui amla	Leaves need to be tied in worm-infected part of animal body so that worms die due to its leaf extract.