

Winter crop weeds employed for the treatment of various diseases in Eastern U.P.

M. Jaish Beg

Department of Botany, Shibli National College (V.B.S. Purvanchal University)
Azamgarh-224001 (India)

Abstract

The term “weed” generally has a negative connotation but most of the weeds are edible and their parts such as stem, root, leaves, fruits etc. are used for food or medicine. A total of 31 weed plants belonging to 22 families were found to be very effective in curing and controlling various human diseases. A few most valued plants in this regard are *Achyranthes aspera*, *Blumea lacera*, *Boerhaavia diffusa*, *Eclipta prostrata*, *Oxalis corniculata*, *Solanum nigrum*, *Tridax procumbens*, *Vernonia cinerea* etc.

Key words : Traditional medicine, exploration, weed, medicinal.

Weeds are considered undesirable plants that grow in association with agricultural crops and bring about significant reduction in yield through their competition with crop plants for sunlight, soil, space, nutrients, water etc.¹ Other than cultivated lands weeds are also known to occur practically everywhere such as on degraded lands, fallow lands, waste lands, along road sides, along railway tracts, water channels, canals, lakes and water bodies, water tanks etc. Holm *et al.* estimated that about 8000 weed species growing in the world only 250 are of particular importance to agricultural crops³. The term “weed” generally has a negative connotation but most of the weeds are edible and their parts (Stem, root, leaves, fruits etc) are used for food or medicine.

Plants are normally neglected from the

medicinal point of view due to readily available allopathic medicines without considering the side effect, which may sometime be fatal. But the people living in remote areas are still using the plant(s) and plant part(s) as traditional drug for curing certain diseases without any side effects. WHO gave a formal recognition to traditional medicine and tried to boost its exploration all over the world¹². Therefore, it is necessary to search out such type of information and to bring it to the knowledge of public and scientific bodies for correct utilization of plant wealth and their therapeutic importance.

Eastern Uttar Pradesh forms a part of the Middle Gangetic Plain between the Himalayan ramparts in the north and Peninsular block in the south. It extends from 80° 45' to

84° 30' E and 23° 45' to 28° 30' N and cover an area of 80855 square Km. It includes the administrative division of Varanasi, Gorakhpur, and Faizabad (excluding Barabanki district) along with the three Tahsils viz. Soran, Handia and Phulpur in Allahabad district⁹. The forest ground is composed of gangetic alluvium. The soil along banks of nalas and streams is coarser because all the heavier silt gets deposited there. The sub-soil is mostly of hard clay, poorly aerated and with little thickness of loam on the surface. The climate is of monsoon type. Out of about 1300 mm average total annual rainfall nearly 80% is received during the rainy season. The mean daily maximum and minimum temperature during winter is 22.91°C and 9.33°C and during summer is 35° and 23.3° C respectively.

Extensive and intensive field surveys were conducted during different months of winter (Rabi) seasons 2013-2015. During the course of collection, plenty of informations were noted down regarding medicinal uses of the plants. Enquiries about the local name(s) and the mode of application of medicinally useful plants were also noted down. The method of application varies among different tribes, medicine men and local inhabitants. The collected plants were identified with the help of local Floras^{2,4,10} as far as possible. The doubtful specimens were further verified and their identity confirmed at NBRI, Lucknow; FRI, Dehradun and Central Circle of BSI at Allahabad. Scattered information in the literature about medicinal plants were scrutinized and incorporated in our account of the taxa. Properly mounted specimens are deposited at the Herbarium Department of Botany, Shibli National College, Azamgarh.

***Acalypha indica* Linn. (Euphorbiaceae):**

Kuppi

- The paste of leaves / root is emetic and applied on cuts, burns scabies and rheumatoid arthritis.
- The root powder is taken to get rid of constipation and is also used as anti-snake venom.
- The fresh plant extract along with cow milk is administered orally as a nerve tonic.
- The decoction of the plant is used for cold and cough and also as safe and speedy laxatives
- The plant is used in gastro-intestinal irritation.

***Achyranthus aspera* Linn. (Amaranthaceae):**

Chirchita

- Crushed root is applied over cuts and injury to stop bleeding. The root decoction with jaggery is given to infants at bedtime in constipation. It is also used in piles and fissures.
- The decoction of the plant is used orally in the treatment of intermittent fever, pneumonia. It is also used as blood purifier. The ash of burned leaves is applied externally to boils.
- The crushed leaves mixed with jaggery are applied on the head for a week to cure rickets.
- Leaf paste along with mustard oil and camphor applied on rheumatism.
- The paste of inflorescence is applied at the spot of scorpion sting.
- The decoction of the seed and plant is administered as anti-snake venom.

***Amaranthus caudatus* Linn. (Amaranthaceae):**

Chaulai

- Plant is considered as diuretic.

- Two spoonful root extract is given twice daily in case of allergy.
- The people use tender stem and leaves as vegetables and they consider it as blood purifier.

***Anagallis arvensis* Linn. (Primulaceae):**

Jonkmari

- The plant is used in the treatment of kidney stone.
- It is also believed to be antipyretic and is used in the form of decoction.
- It is also said to be remedy for the bite of mad dog and to dispel sadness.

***Argemone mexicana* Linn. (Papaveraceae):**

Pilikatari, Bharbhar

- The plant is said to be demulcent emetic, laxative, expectorant and applied externally for headache.
- The root is used in constipation, fever and cough.
- The latex is used in conjunctivitis and skin diseases and also applied on leucodermic patches.
- The seeds in the powder form are given orally along with water in cough and throat infections and it is also given to neutralise the snake venom at short intervals.
- The seed oil is used at bedtime to get rid of constipation. It is also applied on the skin in the treatment of skin diseases and rheumatic pain.

***Blumea lacera* D.C. (Asteraceae) :**

Kakronda

- The leaves are anti-fungal (in case of *Aspergillus* species). A decoction of leaves

is used to cure malarial fever and leaves are also considered as haemostatic.

- The crushed leaves are applied over the piles and fissures to stop bleedings and to cure fissures.
- The leaves are also used in eye trouble and dog-bite.

***Boerhaavia diffusa* Linn. (Nyctaginaceae):**

Punarnava, Gadahpurna

- The plant is anti-inflammatory, antigonorrhoeic, diuretic, expectorant, stomachic, antivenom, emetic, antiasthmatic and laxative.
- The root powder is also used along with water in case of kidney stones. Root extract is administered orally in the treatment of swelling in joints, liver, spleen and body.
- The extract of root is taken in the case of jaundice and fever.
- The entire plant is used in leprosy, gonorrhoea, cough and asthma.

***Cassia tora* Linn. (Caesalpinaceae)**

Chhota Chakwad

- The paste of root is applied on snake bite.
- The leaves and seeds are useful in skin diseases. Seeds are also laxative.

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

Bathua

- Young tender shoots and leaves are used as vegetable; they are believed to be appetizer and to relieve constipation.

***Convolvulus arvensis* L. (Convolvulaceae)**

Hirankhuri

- Whole plant is used to improve the memory

and as a brain / nervine tonic for the patient suffering with the mental disorder.

- The root is also considered purgative and cathartic.

***Cynodon dactylon* (Linn.) Pers. (Poaceae)**

Doob, Doob ghas.

- The plant paste is applied locally on fresh cuts and wound.
- It is very efficacious drug for abortion. It is also used to check the excessive menstruation.
- It is used for the treatment of diarrhoea, chronic dysentery and bleeding from nose or mouth.
- The rhizome is used in urinary and bladder complaints.

***Cyperus rotundas* Linn. (Cyperaceae)**

Motha

- The root juice is taken orally in case of snake bite.
- Root poultice is applied on the affected area in the treatment of ulcer and wound.
- Decoction of the whole plant along with the leaves of Neem and Tulsi is inhaled in malarial fever.
- The decoction of corms is given to the patient in the treatment of stomach pain.
- Infusion of tubers is given to the patient in the treatment of diarrhoea and dysentery.

***Desmodium gangeticum* (Linn.) DC. (Papilionaceae)**

Salpauia, Salpan

- The root is used as antidote to snake venom and scorpion bite. It is useful drug in the treatment of diarrhoea, asthma, tuberculosis

and in urogenital diseases.

- The decoction of leaf is beneficial in chronic fevers.

***Eclipta prostrata* (Linn.) L. Mant. (Asteraceae)**

Bhangraiya.

- The juice of the whole plant mixed with honey is given to newly born babies suffering from catarrh. The decoction of entire plant is administered in malarial fever.
- The plant is useful in the enlargement of liver and spleen and also in other liver disorders.
- Paste of the plant mixed with the sesame oil (*Sesamum indicum*) is applied externally over glandular swellings and elephantiasis.
- A decoction / juice of the leaves is taken in the treatment of uterine bleeding or uterine haemorrhages. The juice of the leaves is also employed for this purpose.

***Euphorbia thymifolia* Linn. (Euphorbiaceae)**

Choti dudhi, Dudhi

- The plant is used in the treatment of gonorrhoea.
- A paste of the leaves is bandaged on wounds for quick healing.
- A decoction of the leaves mixed with mother's milk is a beneficial drug for infant dysentery.

***Fumaria indica* (Hausk.) Pugsley (Fumariaceae)**

Papra.

- Decoction of the plant is used for blood purification.
- A paste of stem and black pepper is applied

to forehead for malaria.

***Heliotropium indicum* Linn.**
(Boraginaceae)

Hathi Sundh.

- Leaf paste is applied in scorpion sting.

***Malva verticillata* L. (Malvaceae)**

Dula.

- The leaf extract is given to the patient to control high blood pressure.
- The leaves and stems are considered to have digestive power.

***Portulaca oleracea* Linn. (Portulacaceae)**

Kulfa.

- The plant is used in diabetes. It is regarded as carminative, refrigerant, and cardiac tonic.
- The leaves are used in the treatment of mild bleeding from mouth, nose and rectum. A paste of the leaves is applied externally on burns, boils, ulcers, wounds and carbuncles.
- The juice of the leaf is valuable remedy for pain or difficulty in passing urine and scanty urination due to excessive sweating.

***Oxalis corniculata* Linn. (Oxalidaceae)**

Tinpatiya

- Juice of the plant is used in dyspepsia, piles, anaemia, and to cure opacity of the cornea.
- Leaf paste is applied on the head in the treatment of insomnia. Decoction of leaf is also given to the patient in the treatment of blood dysentery
- Fresh juice of whole is given in the treatment of diabetes.

***Phyllanthus niruri* Hook f. (non Linn.)**
(Euphorbiaceae)

Jangali Amla

- It is considered as potential diuretic, hypotensive, and hypoglycaemic drug.
- Whole plant is anti-hyperlipidemic⁵.
- The plant extract protect the liver damage caused by various agents

***Polygonum glabrum* Willd. (Polygonaceae)**

Lalkes, Hali.

- The roots are beneficially used in the treatment of piles, debility and Jaundice.
- Decoction of leaf is taken in the treatment of diabetes.
- The decoction of the flower is used to get relief from sunstroke.

***Rumex dentatus* Linn. (Polygonaceae)**

Jalpalak; Janglipalak.

- The paste of the root is externally applied on sore throat and rheumatic joints.
- The leaves are regarded as a blood purifier and laxative.

***Rungia repens* (Linn.) Nees (Acanthaceae)**

Kharmer

- Whole plant is useful in breaking and expelling the bladder stones. It is also used in cases of intermittent fever in the form of decoction.
- The whole plant is also used in cough and fever.
- The juice of the leaves is also effective in the treatment of small pox.

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

- Plant is considered as stomachic, emetic, antidiarrhoeal and diuretic.
- Fresh leaves are given to patient in the treatment of diabetes.
- Leaves are also used in snake-bite, scorpion-sting and other insect-bite.

Sida cordifolia* Linn. (Malvaceae)*Bariyar.**

- A paste of the roots is applied externally for causing the boils to break. The root is said to be useful in cardiac debility, spermatorrhoea and gonorrhoea.
- Entire plant is used as stomachic. The leaves are used in liver troubles with beneficial results

Solanum nigrum* Linn. (Solanaceae)*Kali makoiya**

- It is a reputed medicine for liver complaints and effectively used in jaundice.
- The leaves are beneficial in the treatment of dropsy, fever, flatulence, peptic ulcers, colitis and other stomach ailments.
- A paste of the leaves is applied externally in cases of severe burns, herpes and rheumatic joints.
- The decoction of fruits is given to the patient in the treatment of asthma.
- A paste of green fruits is applied locally on ringworms with positive results.

Solanum surattense* Burm. (Solanaceae)*Bhatkattaiya; Bhatkattaiya**

- The decoction of the root is taken against

malarial and other fevers and useful remedy for cough.

- The juice of the fruits mixed with *Piper nigrum* (black pepper) and *Syzygium aromaticum* (clove) is useful in toothache and headache.

Trianthema portulacastrum* Linn. (Aizoaceae)*Safed Patherchatta, Patherchatta.**

- The roots are considered abortifacient, cathartic and also used in menstrual disorder.
- The plant is diuretic and effectively used in expelling the stone from the kidney.
- The leaves are used in oedema, dropsy and as liver tonic.

Tridax procumbens* Linn. (Asteraceae)*Kateri**

- Whole plant extract is given in spermatorrhoea.
- Leaves are used in the treatment of jaundice, bronchial catarrh, dysentery and diarrhoea.
- Plant paste mixed with castor oil is applied externally on wounds.

Vernonia cinerea* (Linn.) Less. (Asteraceae)*Sahdaiya**

- The decoction of the plant is taken in fever. It is considered analgesic and antipyretic.
- Decoction of the leaves in combination with *Ocimum sanctum* is said to be antiseptic.
- The seeds are regarded anthelmintic, effective against cough, flatulence, leucoderma, psoriasis and other skin diseases.

Present study revealed that a large number of winter crop weeds of the area are of great importance as a source of herbal medicine. A total of 31 weed plants belonging to 30 genera and 22 families were found to be very effective in curing and controlling various human diseases. A few most valued plants in this regard are *Achyranthes aspera*, *Blumea lacera*, *Boerhaavia diffusa*, *Eclipta prostrata*, *Oxalis corniculata*, *Solanum nigrum*, *Tridax procumbens*, *Vernonia cinerea* etc. Most of the supply of drug is obtained from wild plant sources⁷. The medicinal value of the plant is due to the presence of some chemical substances (secondary metabolite) in the plant tissues, which exercise a specific physiological action on the human body. Medicinal uses of *Calotropis gigantea* has been widely reported^{3,6}. Over exploitation of plant resources should be checked and much emphasis should also be given to the *in-situ* conservation of these medicinal plants. According to Tandon¹¹ *in-situ* conservation of medicinal plants is highly desired in their natural habitats¹¹. Identification of authentic botanical source for the claimed efficacious properties is of prime importance and should receive due attention by the scientists engaged in this field. There is need to isolate the active ingredients of these herbs in pure form and formulated synthetic compounds. It is hoped that the present work will be of help to the plant chemists and pharmacologists.

The authors are thankful to the directors of the Herbaria mentioned in the text for providing facilities to consult the herbarium material and literature available at the institute.

References :

1. Dangwal, L.R., A. Singh, T. Singh, A. Sharma and C. Sharma. (2010). *J. American Sci.* 6(10) : 405-407.
2. Duthie J.F. (1903-1929). Flora of Upper Gangetic plain and of the adjacent Siwalik and Sub-Himalayan Tracts. Vol. I-II. Botanical Survey of India, Calcutta.
3. Holm, L., J. Pancho, J. Herberger and D. Plucknett. (1979). A Geographical Atlas of World Weeds. John Wiley and Sons, New York, 391 pp.
4. Kanjilal, P.C. (1966). A Forest Flora for the plains of Uttar Pradesh. Part I & II. Lucknow.
5. Khanna, A. K., Rizvi, F. and Chanderl, R. (2002). *Ethnopharmacol.* 55 : 49-53.
6. Ladda, R.G., R.P. Aradwad and J.S. Ambhore (2013). *Bioscience Discovery.* 4(2) : 211-213.
7. Mundappa, A. and S. Ommen (1988). Amruth 2:3 Medplan Conservation Society, Bangalore, India.
8. Parrotta, J.A. (2001). Healing Plants of Peninsular India. CABI Publishing, Oxon. New York. pp 1-736.
9. Singh, R.L. (1971). India: A Regional Geography pp. 189-190, 1971.
10. Srivastava, T. N. (1976). Flora Gorakhpurensis. Today and Tomorrow Printer and Publisher 1-477.
11. Tandon, V. (2006). *Kurukshetra.* 5(4) : 11-13.
12. World Health Organization (1978). The promotion and development of traditional medicine. Technical report series No. 622, Geneva.