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Ethnomedicinal Study Of Some Weeds Growing In Wheat Fields Of Agra (U.P.)

SARIKA YADAV Botany Department, Agra College, Agra. E-mail: sarikayadav1978@gmail.com

Abstract:

Weeds have been a big menace for agricultural. However, several weeds have been known to have medicinal properties and being used as household remedies since old times in India. The present study revealed presence of 37 herbaceous weeds belonging to 20 families of angiosperms in wheat fields of Agra district. The most frequent and dominant weed was Chenopodium album followed by Ageratum conyzoids, Malva sylvestris and Parthenium hystrophorus. Amaranthus viridis, Vernonia anthelmintica, Euphorbia hirta, Eclipta alba, Meliolotus alba, were also quite frequent. Further, Asphodelus tenuifolius was quite common monocot weed besides grasses. Nearly all the recorded weeds have folk medicinal uses.

Keywords: Ethnomedicine, weeds, wheat field.

INTRODUCTION:

Plants have traditionally served as man's most important weapon against pathogens. Herbal medicines are widely used by all sections of the community, either folk remedies or as medicaments in the indigenous as well as modern system of medicines. Generally, the plants growing with cultivated plants/crops in agricultural fields are called as "weeds". These herbaceous plants compete with main agricultural crops for their nutrition and finally reduce the economic production. Thus, considered as undesirable plants, however, these herbs are quite useful as folk medicines for rural population. The most significant positive aspect of these weeds is that nearly all of them are known to possess therapeutic properties and are used by the native people for cure of a variety of human and cattle diseases (Ibrar *et al.,* 2003).

The rural people of India have preserved a large bulk of traditional knowledge of medicinal uses of plants growing around them. Because of prompt and positive effect of herbal treatment, they have strong faith in folk medicinal preparation or crude formulation. Further herbal formulations are safe, cheaper, easily available and with no fear of any side effects (Purohit and Prajapti, 2003). In recent years, effort to record medicobotanical uses of plants from various countries have received close attention of scientists (Ekka and Dixit 2007; Chaudhary 2011).

In view of the above facts, the present study on medicobotanical uses of herbaceous weeds in wheat fields of Agra district has been undertaken in Ravi season of 2020-2021, to explore folk medicinal uses of weeds.

MATERIALS AND METHODS:

In the present work, periodic survey of wheat fields in 5 tehsils of Agra district were undertaken from December 2020 to March 2021. The herbaceous weeds found in and around wheat fields were recorded and specimen of representative species were collected, preserved and identified with the help of local and regional flora in consultation with particular herbaria of NBRI, Lucknow. The information regarding folk medicinal uses, local name, plant part used and mode of administration was collected from villages, Vaidya, Hakim and older rural people. The results have been compiled and presented in **Table 1**.

RESULT AND DISCUSSION:

In all 37 herbaceous weeds belonging to 20 families of angiosperms were recorded from different wheat fields. Out of these, only one weed i.e., Asphodelus tenuifoleus belonged to monocotyledon and rest 36 belonged to dicot families. The maximum number of weeds were found to be from family Asteraceae followed by Amarantheceae, Euphorbiaceae, Solanaceae and Malvaceae. It is interesting to note that Chenopodium album (local name Bathua) was most dominant weed followed by Ageratum conyzoides, Malva sylvestris, Eclipta alba, Euphorbia hirta, Maliolotus alba, Parthenium hystrophorous, Senebiera didyma, Spergula arvensis and Vernonia anthelmintica. It is significant that Parthenium hystrophorus is one of the 100 most invasive weeds threatening biodiversity of agricultural fields and waste lands. This exotic weed is regarded as "Green Cancer" and needs massive eradication. However, its extract is remedy for skin inflammation, urinary tract infections, rheumatic pain and neuralagia (www.ncbi..nlm.nih.gov>article).

Ethnomedicinal properties of recorded plants being used in the treatment of various diseases have been mentioned in the **Table 1**. The local use of such plants as a cure common disease particularly in the remote areas which have little or no access to modern health facilities. The indigenous traditional knowledge of medicinal plants of various ethenic communities, where it has been transmitted orally for generations is a fact disappearing due to advent of modern technology and transformation of traditional culture. It is therefore very essential to have proper documentation of medicinal plants and to record their potential for the improvement of human health and hygiene through an eco-friendly approach. (Hussain, 2006). Further, some weeds have fungitoxic properties, which can be exploited for biocontrol of fungal diseases of commercial plants.

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Table 1.

List of medicinal weed plants growing in wheat fields of Agra				
S. No.	**Plant species**	**Common name**	**Family**	**Medicinal use**
1.	Abutilon indicum	Kanghi (Indian mallow)	Malvaceae	Root and leaves are used for curing fever. Also used as demulcent, aphrodisiac, laxative, diuretic, astringent, expectorant, anticonvulsant, anti-inflammatory, anthelmintic and analgesic.
2.	Achyranthus aspara	Chirchita	Amaranthaceae	Dried powder of roots is used as massage to cure toothache and gum bleeding
3.	Ageratum conyzoides L	Chickweed (goat weed)	Asteraceae	Decoction is used to treat fever, headache, rheumatism, colic pain, burn wounds, dyspepsia, uterine disorder & pneumonia. In Kenya, East Africa it is traditional medicine for antiasthmatic, antispasmodic and haemostatic effects.
4.	Amaranthus spinosus	Kateli chauli	Amaranthaceae	Root paste is used in skin disorders particularly scabies.
5.	Amaranthus viridis	Jangli chauli	Amaranthaceae	Decoction of stem & leaves is used to stop dysentery. Its root juice is also used in constipation and to treat inflammation of urinary tract.
6.	Argemone maxicana	Pili kateli	Papaveraceae	The seeds are source of a semidrying oil used as laxative, this oil is used to treat skin eczema and jaundice.
7.	Asphodelus tenuifolius	Piazi	Liliaceae	The seeds are used medicinally for joint pains and decoction of leaves in fever and sore throat.

8.	Boerhavia diffusa	Pun-nerva	Nyctaginaceae	The shoot juice is used as nervine tonic. The leaves are useful in anaemia, dyspepsia, tumors, spleen disorders and abdominal pain.
9.	Celosia argentea	Chatri matri	Amaranthaceae	The flowers and seeds are used in the treatment of haemorrhoid bleeding, bloody stool, piles, uterine bleeding and diarrhea.
10.	Chenopodium album	Bathua	Chenopodiacea e	The plant extract is used as general tonic. It is used in peptic ulcer, intestinal worms, dyspepsia, flatulence, urinary retention, renal disorders, general debility and the plant decoction as a sexual stimulant .
11.	Cleome gynandra	Hulhul	Capparidaceae	Leaves concoction is highly recommended for pregnant and lactating woman. It is also used to cure scurvy.
12.	Coccinia grandis	Kanduri	Cucurbitaceae	The juice of leaves is recommended in treatment of diabetes. It improves digestion.
13.	Eclipta alba	Bhringraj (Bhangera)	Asteraceae	Leaf extract is applied to the head to treat dandruff and blacken grey hair. It is used as hair tonic in the form of hair oil.
14.	Euphorbia hirta	Dudhi grass (Asthma-plant)	Euphorbiaceae	Decoction of shoot is used against asthma, bronchitis, worm infestation, conjunctivitis and dysentery.
15.	Euphorbia prostrata	Prostrate spurge	Euphorbiaceae	Used in early grades of symptomatic hemorrhoids, it is vasoprotective and anti-hemorrhoidal.
16.	Evolvulus alsinoides	Shyamakrantha	Convolvulaceae	The plant is used to cure fever cough and cold. The whole plant decoction is used in various debility and loss of memory. It is useful as blood purifier and in bleeding piles.

17.	Fumaria parviflora	Ban dhania	Fumariaceae	The whole plant extract is used in fever, as liver tonic, cooling agent and blood purifier. It is also used in hepatic ailment and diarrhoea
18.	Heliotropium indicum L.	Indian heliotrope, Hathi sundhara	Boraginaceae	Widely used in native medicine in Tamil Nadu, India. It has been widely used for centuries to treat warts, wound healing, anaemia and anti-abortive leaf extract to cure ring worm and insect bite.
19.	Ipomoea digitata	Jaljaminii	Convolvulaceae	It is used to cure enlarged liver and spleen. It increases secretion of milk and moderate menstrual discharge.
20.	Launaea asplenifolia	Kulhaafula	Asteraceae	Used in treatment of rheumatism, kidney and liver disorders and eye darkness. The extract is effective against leukemia, pancreatic and breast cancer.
21.	Malva sylvestris	Gurchanti	Malvaceae	Plant extract has antioxidant properties and emollient for external applications. Also used as skin conditioning agent in skin disease.
22.	Melilotus alba	Banmethi, senji	Paplionaceae	Used for varicose veins and symptoms of poor blood circulation including leg pain, night cramps, itchiness and diuretic.
23.	Nicotiana plumbaginifolia	Jangal tambaku	Solanaceae	Shoot decoction is antimicrobial, antidiabetic and insecticidal. Also used to control fungal diseases of plants.
24.	Oldenlandia alsinoides	Parpata	Rubaceae	Whole plant decoction is given for jaundice and liver disorders.

25.	Parthenium hysterophorus	Carrot grass	Asteraceae	One of the 100 most invasive species threatening biodiversity. Its extract is remedy for skin inflammation, U.T.I, rheumatic pain & neuralgia.
26.	Phyllanthus niruri	Hazardana	Euphorbiaceae	Fresh extract of shoot is used to treat jaundice, dropsy, menorrhagia, gonorrhea and urinogenital, affections.
27.	Polygonum plebeium	Rani phul	Polygonaceae	Roots are used in bowel irritation and crushed leaves are given in pneumonia.
28.	Portulaca oleracea	Kulfa	Portulaceae	The leaves are used as blood purifier and leaf extract mixed with black pepper is quite effective is dysentery with blood.
29.	Rumax dentatus	Jangali palak	Polygonaceae	Leaf decoction is given for fever, joint pains and gout (rheumatism).
30.	Silene conoidea	Gulabi booti	Caryophyllacea e	The plant considered emollient and used in bath or as fumigant. Its juice is used in ophthalmia. The dry root is powdered and used as soap to wash hairs.
31.	Solanum nigrum	Makoi	Solanaceae	Whole plant is used as an anti-inflammatory, antiseptic, swelling, cough asthma and liver disorders. The fruits are used as anti-diarrhoea.
32.	Solanum xanthocarpum	Nili kateli	Solanaceae	Fruits, flowers and stem possess carminative and anthelmintic properties. Root extract is used as expectorant and in chest pain due to cough, bronchitis and asthma.
33.	Spergula arvensis	Ban soya	Caryophyllacea e	The plant extract is diuretic and used in liver and kidney disorders.

34.	Stellaria media	Chik weed, morolia	Caryophyllacea e	Fresh leaves used as poultice for inflammation and indolent ulcers. Decoction of fresh plant is given for constipation.
35.	Senebiera didyma	Wart cress	Brassicaceae	Decoction of plant is used in rheumatism and gouts.
36.	Tridax procumbens	Ghamra (Tridex daisy)	Asteraceae	Plant extraction has been in use in india for wound healing and as anticoagulant, antifungal and insect repellent. Leaf extract was used for infectious skin diseases in folk medicines. Also used for liver disorders, gastritis and heart burn.
37.	Vernonia anthelmintica	Kaliziri	Asteraceae	The seeds are used for leucoderma and other skin diseases. The plant extract is used as an anthelmintic.