



MEDICINAL POTENTIAL OF EXOTIC INVASIVE WEEDS FROM PADDY FIELDS OF VELHE TALUKA OF PUNE DISTRICT MAHARASHTRA STATE (INDIA)

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Abstract

Exotic species are the alien species which are also known by other names like invasive species, non-indigenous species or bio invaders. These species grow in a non-native environment. Local people of Velhe region uses the exotic weeds for curing various diseases. Ethnobotanical knowledge has prevailed in this area since long time. In this respect, we documented the medicinal uses of invasive plants. Field surveys were conducted during 2017-2019 for collection of ethnobotanical data from paddy fields. From this survey, more than 22 plant species belonging to 11 families were reported to cure different types of diseases.

Keywords – Exotic, Invasive, Paddy Fields, Velhe, aliens.

Introduction

General definition of weeds is unwanted plants grown in cultivated crop and compete with storage of food material in soils. Classification of weeds is based on indigenous weeds and exotic weeds. These exotic weeds are established since long time and naturalized in our soils. The exotic weeds introduced from other countries known as invasive weeds. These weeds plants have escaped from its original ecosystem and are established in regional floras. They are spread in the rice fields and displace native biota and threaten valued agricultural crops and environment due to profuse growth.

Alien plants have various effects on the environment and economy of non-native areas, many of the exotic plants are of economic benefit and some have severe negative impacts. Some invasive species, often cultivated, may provide food, medicine, fuel or fodder to local communities (Kull et al., 2007, Roder et al., 2007).

Velhe taluka of Pune district comes under western ghats of Maharashtra known as Sahyadri. It has 147 villages and annual rainfall is 2645-2314 mm from June to September. Rice is the major crop of this area.

Material and Methods

The study was carried out in two years. The plant samples were collected from the fields. The identification was done with the help of Flora of Maharashtra (1996, 2000) and S.R. Yadav's flora of Kolhapur. Confirmation of specimens was made with the help of AHMA herbaria. All specimens were given AHMA number and deposited at AHMA (Agharkar Herbarium of Maharashtra Association recognized by Kew), Agharkar Research Institute.

Result and Discussion

Following are the exotic invasive weeds found in Velhe region.

1) *Ageratum conyzoides* L .

Family - Asteraceae

Habit - Herb

Local name - Sahdevi, Osadi

Part used - whole plant

Medicinal use - Root juice is anthelmintic.

A paste of root mixed with the bark of *Schinus wallichii* L. is applied on dislocated bones.

The leaves are styptic. The dried leaves powder is applied on cuts sores and ruptures caused by leprosy. A past of leaves is used as poultice to remove thorn from skin.

The juice of flower heads is used externally to treat scabies.

2) *Alternanthera tenellacolla*

Family - Amaranthaceae

Habit - Herb

Part used - Whole plant

Medicinal use - Aqueous extract of *A. tenella* is used for anti-inflammatory activity & anti-tumor.

It has antimicrobial & antiviral properties.

3) *Argemone mexicana* L.

Family - Papaveraceae

Habit - Herb

Local name - Pivala dhotra

Part Used - Root bark and stem latex

Medicinal use - Fresh bark or dried bark with betel leaves for jaundice & latex for skin disease& eye diseases.

4) *Bidens pilosa* L.

Family - Asteraceae

Part used - Leaves

Habit - Herb

Medicinal use - The leaf extract is used as diuretic, inflammation of digestive tract and anti-diarrhea. Also, leaves are used astringent.

5) *Cassia uniflora* Miller

Family - Caesalpinaceae

Habit - Herb

Local name - Takala

Part Used - Leaves & Seeds

Medicinal uses - Seed power is used for wound healing. Leaf juice is used to cure dysentery & diarrhea.

6) *Celosia argentea* Linn.

Family - Amarantheceae

Habit - Herb

Local name - Kurdu

Parts Used - Whole plant

Medicinal Use - Plant extract is used to cure dysentery, diarrhea, acute abdominal pains, inflamed stomach and treatment of tuberculosis. Leaf juice is applied on wounds, sores, ulcers, skin eruptions, ulcers of mouth & relieves itching. Root juice is given early in the morning for cure kidney stone. Drops of leaf juice are used for tired eyes to clear vision.

7) *Chrozophora rottleri* (Geis.) Spreng.

Family - Euphorbiaceae

Habit - Herb

Part used - Fruits

Medicinal Uses - The juice of fruit is used to cure cough & cold.

8) *Croton bonplandianum* Baill.

Family - Euphorbiaceae

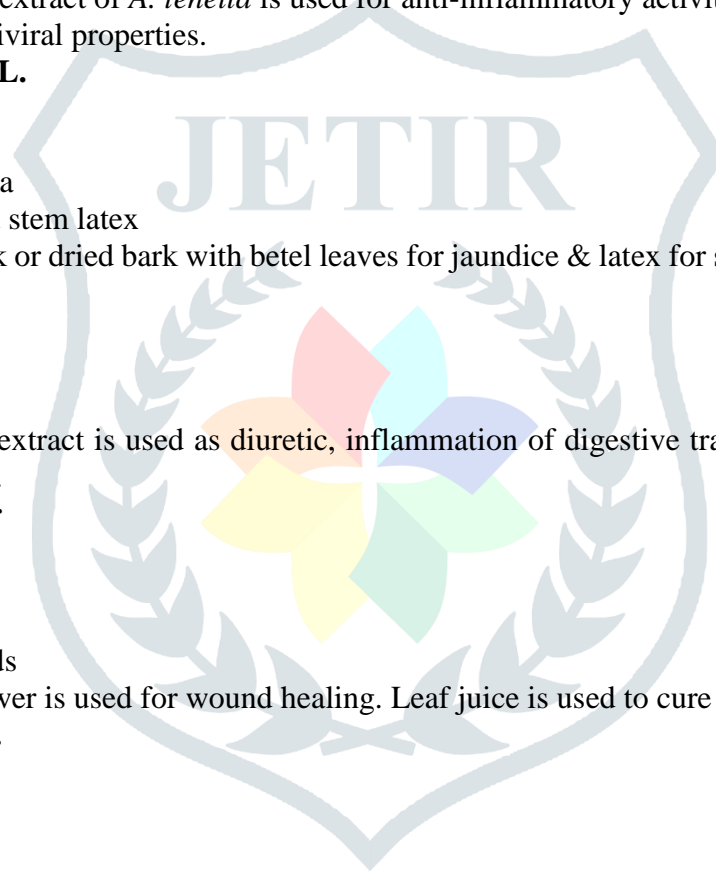
Habit - Herb

Part used - Seeds

Medicinal use - Seeds are purgative.

9) *Dinebra retroflexa* (Vahl.) Panz.

Family - Poaceae



Habit - Herb

Local name – Meshkathi

Part used - Root & culm

Medicinal use - The culm is used in form of aqueous paste for face care and decoction of root is used externally as well as internally in treatment of piles.

10)Echinochloa colona (L.) Link.

Family – Poaceae

Habit – Herb

Part Used – Whole plant

Medicinal Use – The seeds are used as millet.

11)Echinochola crusgalli (L.) Beauv.

Family - Poaceae

Habit - Herb

Part used - whole plant

Medicinal use -The root powder is applied as a styptic to wounds. The leaf extract is used as tonic & treating carbuncles sores spleen troubles cancer & wounds.

12)Eclipta prostrata (L.) Mant.

Family - Asteraceae

Habit - Herb

Local name - Maka

Part used - Leaf

Medicinal use - Leaf extract is applied on hair for strengthening them, making black and prevents falling off. The farmers and tribal apply the leaf juice on the cuts and wounds. There is popular opinion that the herb taken orally and applied externally will turn the hair black. The plant extract is applied to the body in fevers.

13)Euphorbia Heterophylla L.

Family – Euphorbiaceae

Habit – Herb

Part Used – Leaf

Medicinal Use – Leaf juice is used to treat Gonorrhoea. Decoction of leaves is used to cure cough, cold and asthma. Leaf juice is used to cure dysentery, Digestive problems, acne, jaundice etc.

14)Euphorbia hirta Linn.

Family - Euphorbiaceae

Habit - Herb

Local name - Dudhani

Parts used - Whole plant

Medicinal use - Plant decoction is given orally in the treatment of asthma, bronchitis, coughs bowel complaints stomach ache & dysentery. Leaf paste is applied in burns and scorpion stings. Leaf extract is consumed orally in gonorrhoea and snake bites. A drop of latex is poured in eye for eye complaints and is applied on eczema and scabies.

Leaf juice is given for the treatment of acute abdominal pains, infection of the mouth and to Stops local bleeding.

15)Impatiens balsamina L.

Family – Balsaminaceae

Habit – Herb

Part used – Leaves

Medicinal Use – Leaf juice is used to treat pains in joints. Flowers have cooling antibacterial, antifungal properties.

16)Oxalis corniculata L.

Family - Oxilidaceae

Habit - Herb

Local name - Ambushi

Part used - whole plant

Medicinal use - The whole plant is anthelmintic, anti-phlogistic, astringent, depurative, diuretic, emmenagogue, febrifuge, lithotriptic, stomachic & styptic. It is used in treatment of influenza, fever urinary

tract infection enteritis diarrhea boils & pimples. The leaf juice applied for insect bites burns and skin piton has an antibacterial activity

17) *Parthenium hysterophorus* L.

Family - Asteraceae

Habit - Herb

Local name - Congress, Gajargavat

Part used - whole plant

Medicinal use - Root decoction is used in dysentery and used as tonic febrifuge & emmeriagogue. *Parthenium* is also reported as promising remedy against hepatic a meiosis. Parthenin a toxin of *Parthenium* is found pharmacologically active against neuralgia and certain types of rheumatism.

18) *Portulaca oleracea* Linn.

Family - Portulacaceae

Habit - Herb

Local name - Ghol

Part used - Whole plant.

Medicinal Use - Plant juice is taken orally to cure Liver kidney, bladder problems & scurvy. It is also useful to increases milk flow in nursing mothers, good for painful or difficult urination, relieves dry coughs, shortness of breath & immoderate thirst cures inflamed eyes mouth sores. It is applied on swollen gums fasten loose teeth. Leaf juice is applied for relieves pain from burns, healing of wounds, promotes flow of urine menstrual flow, help in digestion & expulsion of intestinal worms.

19) *Sida acuta* Burm.f.

Family - Malvaceae

Habit - Herb

Part used - Root

Medicinal use - Root extract is used as rejuvenating nerve tonic & degenerative disorders.

20) *Tribulus terrestris* L.

Family - Zygophyllaceae

Habit - Herb

Local name - Sarata, Gokharu

Part used - fruits, leaves and roots.

Medicinal uses - Fruits are used as tonic. Fruits power along with wheat flour is given orally backaches and other complaints to ladies after delivery. Fruit powder is also given orally in urinary diseases. Leaf juices are referred orally in stomachs.

21) *Tridax procumbens* Linn.

Family - Asteraceae

Habit - Herb

Local name - Kurmudi

Part used - Leaves

Medicinal Use-Leaf juice is applied to check the hemorrhage of wounds and Bronchial catarrh which is an inflammation of the mucous membrane with thick phlegm. Leaf juice is given to cure dysentery & diarrhea.

22) *Xanthium strumarium* L.

Family - Asteraceae

Habit - Herb

Local name - Landaga

Part used - Leaves, roots flowers and fruits

Medicinal uses - Plant is given to domestic animals for promoting milk yielding capacity. Decoction of plant is given orally in leucorrhoea, menorrhagia and in malarial fevers. Fruits extract is applied on small pox and are having cooling effect. Flower tincture is useful in toothaches.

Following are some images of invasive weeds found during survey.



Parthenium hysterophorus L.



Impatiens balsamina L.



Celosia argentea L.



Eclipta prostrata (L) L.

*Echinocola crusgalli* (L.) P. Beauv*Euphorbia heterophylla* L.*Euphorbia hirta* Linn.*Ageratum conyzoides* L.

Conclusion

During the survey more than 22 exotic invasive weeds were recorded. They belong to 11 families. All are herbs native to Brazil, Central, south America and few from Africa, West Indies and Asia. Maximum weeds are from Asteraceae, Amaranthaceae, Euphorbiaceae, Poaceae, Cyperaceae families. Aches or seed of Asteraceae family are easily dispersed from one region to another by wind or transportation of food grains. These invasive weeds are having properties like anthelmintic, anti-inflammatory, anti-tumor activity diuretic, astringent, tonic etc. Local people use some plant parts for kidney stone, jaundice, skin diseases, cough and cold, piles, fever, burns, urinary disorders etc.

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