

21) Ghol/ Chighal/ Purslane

Botanical name: *Portulaca oleracea*

Family: Portulacaceae

Description: It has smooth, reddish, mostly prostrate stems and the leaves, which may be alternate or opposite, are clustered at stem joints and ends. The yellow flowers have five regular parts and are up to 6 mm (0.24 in) wide.

Economic importance: Whole plant is used as a vegetable and known to reclaim saline soils.



22) Ran Popati

Botanical name: *Physalis minima*

Family: Solanaceae

Description: It is broad leaved, small, erect, annual, pubescent herb. The flowers are cream to yellowish with edible yellowish fruit encapsulated in papery cover.

Economic importance: The plant is bitter, appetizing, tonic, diuretic, laxative, useful in treating inflammations, earache, enlargement of the spleen and abdominal troubles. The fruit is considered to be a tonic, diuretic and purgative.



23) Deepmal / Copper leaf/ Indian mercury

Botanical name: *Acalypha indica*

Family: Euphorbiaceae

Description: It is an erect annual herb with numerous branching and finely pubescent stem. Broad ovate rhombic leaves with long petiole, arranged spirally with acute blades and crenate-serrate margins. The flower spikes are axillary with monoecious flowers.

Economic importance: The crushed plant is used for skin parasites, scabies and other skin problems. The root decoction is also taken to treat asthma, intestinal worms and stomach ache.



24) Erect spiderling

Botanical name: *Boerhavia erecta*

Family: Asteraceae

Description: It is a broadleaved perennial weed with glabrous and woody stem. The leaves are somewhat fleshy, ovate/ovate-lanceolate/lanceolate with opposite and unequal arrangement. The inflorescences are determinatively cymose, fruits are sticky when ripe and adapted to dispersal by humans and animals.

Economic importance: It is used in traditional medicine and leaves used as vegetable and fodder.



25) Gokharu/ Burweed

Botanical name: *Xanthium strumarium*

Family: Asteraceae

Description: It is an annual much-branched herb with erect stems (20–150 cm high) without spines; stems are stout, green, brownish or reddish-brown, and roughly hairy.

Economic importance: It is used for various medicinal purposes, including the treatment of malaria in India.

ble and the seeds as condiment substitute for mustard and cumin. Leaves and seeds are also used to treat infections, fever, rheumatism and headaches.



26) Piwali Tilwan/Tick weed

Botanical name: *Cleome viscosa*

Family: Cleomaceae

Description: It is an annual herb with glandular-hirsute leaves of acute-obtuse apex, and the inflorescence is a raceme with trifoliate flowers.

Economic importance: It is occasionally used as a leaf vegetable and the seeds as condiment substitute for mustard and cumin.

Leaves and seeds are also used to treat infections, fever, rheumatism and headaches.



27) Rui/Madar/Dudhi

Botanical name: *Calotropis giganteae*

Family: Apocynaceae

Description: It is a broadleaved shrub with branched, gregarious, young branches covered with white, cottony hairs, contains milky latex.

Economic importance: The plant is reported as effective in treating skin, digestive, respiratory, circulatory and neurological disorders and was used to treat fevers, elephantiasis, nausea, vomiting, and diarrhoea.



3. Weed management

Types of measures	Description
A) Preventive measures	Selection of pure seed material, use of weed seed free manure, avoid feeding weeds to the farm animals, clean farm machineries before using, proper disposal of weeds.
B) Mechanical measures	Fallow cultivation, soil solarisation, tillage, hoeing, hand weeding, digging, cheeling, sickling, mowing, burning, flooding, mulching etc.
C) Chemical measures	
a) Broadleaved weeds eg. Dhatura, Pathri, Kombda, Ekdandi, Maath, Congress grass, Satyanashi, Chandvel, Dudhi etc.	Pendimethalin 30% EC 1000 – 1200 ml / acre, 2,4-D 58% SL 400-1000 ml/acre, Atrazine 50% WP 400-800 g/acre etc.
b) Narrowleaved weeds eg. Hariyali, Kusal etc.	Pendimethalin 30% EC 1000 – 1200 ml / acre, Isoproturon 75% WP 1000 g ai/ha, Sulfosulfuron 75% WG 13.5 g/acre.
c) Sedges eg. Lavala	Halosulfuron methyl 75% WDG 36 g/acre.
e) All types of weeds	Glyphosate 41% SL 800-1200 ml/acre, Paraquat 24 % SL 850-1600 ml/acre etc.

ICAR-NIASM Technical Folder No. 53

Prepared by

Aliza Pradhan, Rohit Karde, Pravin B Taware, Debasmia Mohanty and Jagadish Rane



Agrisearch with a human touch

For details please contact:

Director,
ICAR-National Institute of Abiotic Stress Management
Malegaon, Baramati 413 115, Maharashtra
Tel: 02112-254057, Fax: 02112-254056
Website: www.niam.res.in



Weed Diversity at ICAR-NIASM



ICAR-National Institute of Abiotic Stress Management
Baramati, Pune, Maharashtra 413 115

Weed Diversity at ICAR-NIASM

1. Introduction

National Institute of Abiotic Stress Management (ICAR-NIASM) is located at 18° 09' 30.62''N; 74° 30' 03.08''E; MSL 570 m at Baramati in Pune district of Maharashtra. It is situated in the eastern part of Pune district, which is a part of the Desh or Western Maharashtra region. It falls under the agro- ecological region Deccan Plateau, hot and semi-arid climate (AER-6) and agro-climatic zone AZ-95 i.e., scarcity zone of Maharashtra. The long-term average annual rainfall is 560mm, and this is restricted to south-west and retreating monsoon. Because of low rainfall, the soils in the area are shallow and poorly developed. Even though, being located in a scarcity zone with poor and shallow soils, NIASM is inhabited with wide ranges of weed species having economic and medicinal importance.

2. Major weeds at NIASM

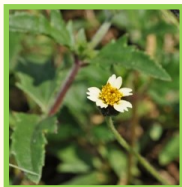
1) Ekdandi/Kambarmodi

Botanical name: *Tridax procumbens*

Family: Asteraceae

Description: It is a broadleaved weed with daisy-like yellow-centered white or yellow flowers with three-toothed ray florets. The leaves are toothed and generally arrowhead-shaped.

Economic importance: Anticoagulant, antifungal, insect repellent, helps to cure skin diseases and heals cuts and boils.



2) Ghaneri

Botanical name: *Lantana camara*

Family: Verbanaceae

Description: It is a broadleaved perennial, erect sprawling shrub with broadly ovate, opposite, and simple leaves and have a strong odour when crushed.

Economic importance: Helps to treat cancer, skin itches, leprosy, chicken pox, measles, asthma and ulcers. Also used as an ornamental plant.



3) Laal dudhi

Botanical name: *Euphorbia heterophylla*

Family: Euphorbiaceae

Description: It is a broadleaved weed with hollow stems that may be branched or simple with angular ribs with leaves commonly having a whitish or bright red base.

Economic importance: Helps in constipation, bronchitis and asthma.



4) Mothi dudhi

Botanical name: *Euphorbia hirta*

Family: Euphorbiaceae

Description: It is a broadleaved, erect or prostrate annual herb with a solid, hairy stem that produces abundant white latex.

Economic importance: Used in herbal tea, asthma, skin diseases, dengue fever and malaria.



5) Punarnava

Botanical name: *Boerhaavia diffusa*

Family: Asteraceae

Description: It is a broadleaved widely dispersed weed with small violet colour flowers.

Economic importance: used as a green leafy vegetable and fodder. It also helps in arthritis, inflammation and anaemia.



6) Pathri

Botanical name: *Sonchus arvensis*

Family: Asteraceae

Description: It is a broadleaved weed with long serrated leaves and produces conspicuous yellow flower heads.

Economic importance: used as a green leafy vegetable and salad, also as herbal tea for asthma, cough and fever.



7) Sarrata

Botanical name: *Tribulus terrestris*

Family: Zygophyllaceae

Description: It is a noxious weed with opposite and pinnately compound leaves. The flowers are lemon yellow; produce small and woody fruits having long sharp and strong spines.

Economic importance: Helpful in urinary disorders, kidney stones, enhanced immunity and fatigue.



8) Bathua

Botanical name: *Chenopodium album*

Family: Amaranthaceae

Description: It is a broadleaved weed; leaves are alternate and varied, waxy-coated, un-wettable and mealy in appearance.

Economic importance: Highly nutritious green leafy vegetable and a trap crop for leaf miners.



9) Maath

Botanical name: *Amaranthus spinosus*, *A. viridis*

Family: Amaranthaceae

Description: It is a broadleaved and annual herb with an upright, light green stem with terminal panicles with few branches, and small green flowers with 3 stamens. The *spinosus* species is spiny in appearance.

Economic importance: Green leafy vegetable, helps to cure jaundice and animal feed.



10) Katekoranti/Satyanashi

Botanical name: *Argemone Mexicana*

Family: Papaveraceae

Description: It is a broadleaved, annual herb, with erect, branched, usually prickly stem and exudes an unpleasant-smelling yellow sap when cut. Leaves are alternate, deeply lobed with irregularly Leaves are alternate, deeply lobed with irregularly toothed, spiny margins, more or less sheathing the stem.

Economic importance: Helps to cure jaundice, malaria, kidney pain and laxative. Also used as a phytoremediation in saline soils.



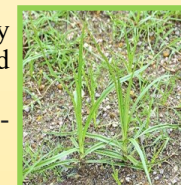
11) Lavala

Botanical name: *Cyperus rotundus*

Family: Cyperaceae

Description: It is a perennial sedge, where young plants initially form white, fleshy rhizomes, in chains from which new shoots and roots grow, and from the new roots, new rhizomes grow.

Economic importance: Famine food, helps to cure fever, digestive disorders and nausea. It has an antibacterial property.



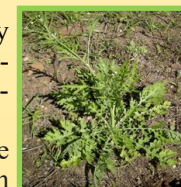
12) Congress grass

Botanical name: *Parthenium hysterophorus*

Family: Asteraceae

Description: It is a broadleaved, annual herb with loosely hairy stem. The leaves are alternate and deeply lobed into narrow segments. The inflorescences are grouped into 4 or 5, in small globular heads with white flowers.

Economic importance: It is a highly toxic weed which can cause skin diseases and breathing problems but it can be used as green manure.



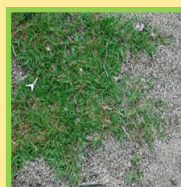
13) Hariyali

Botanical name: *Cynodon dactylon*

Family: Poaceae

Description: It is a narrow leaved perennial weed. Generally propagate through runners; the stems are slightly flattened, often tinged purple in colour.

Economic importance: Religious importance and can be used to treat indigestion and urinary disorders as well as fodder for animals.



14) Kusal/bluestem grass

Botanical name: *Andropogon spp.*

Family: Poaceae

Description: It is narrow leaved, coarse, sometimes tufted plants with flat or folded leaf blades and solid or pithy hairy stems. The flower spikelets are typically clustered at the stem tips or in the leaf axils and produce fruits with straight or twisted awns.

Economic importance: Fodder and helps to prevent soil erosion.



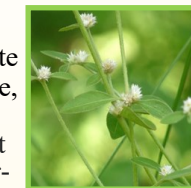
15) Reshimkata

Botanical name: *Alternanthera sessillis*

Family: Amaranthaceae

Description: It is a broadleaved perennial herb with prostrate stems, rarely ascending, with sessile flowers having shiny white, glabrous bract and bracteoles.

Economic importance: Tender shoots are used as a vegetable. It is used to cure urinary disorders, has laxative and cooling properties as well as a source of fodder.



16) Makoy/Kamoni

Botanical name: *Solanum nigrum*

Family: Solanaceae

Description: It is a broadleaved weed with ovate to heart-shaped leaves having wavy or large-toothed edges; petiole 1 to 3 cm long with a winged upper portion. The flowers have petals greenish to whitish, recurved when aged and surround prominent bright yellow anthers.

Economic importance: Berries are eaten when ripen, leaves are boiled and eaten. It has laxative, narcotic, sedative and diuretic properties.



17) Field bindweed/Chandvel

Botanical name: *Convolvulus arvensis*

Family: Convolvulaceae

Description: It is a broadleaved perennial vine with spirally arranged leaves and trumpet shaped white-pale pink flowers; generally propagate through woody underground rhizomes.

Economic importance: Ornamental plant and sometimes used in dyestuffs.



18) Dhotra/Dhatura

Botanical name: *Datura stramonium*

Family: Solanaceae

Description: It is a broadleaved, erect, annual, freely branching herb with stout, erect, smooth, and pale yellow-green to reddish purple stem that forks off repeatedly into branches and each fork forms a leaf and a single, erect flower.

Economic importance: It is used in respiratory disorders, inflammation, asthma and it has anaesthetic properties.



19) Kombda/Cock's comb

Botanical name: *Celosia argentea*

Family: Amaranthaceae

Description: It is a broadleaved, small, annual, erect herb. With flattened spike inflorescence having terminal flowers.

Economic importance: Green leafy vegetable, fodder and coloured species used as an ornamental plant.



20) Chimanchara

Botanical name: *Eragrostis unioloides*, *E. minor*

Family: Poaceae

Description: It is an annual grass or sometimes perennial, erect herb, rooting at nodes. Terrestrial, it grows in many dry as well as moist habitats.

Economic importance: It is used as a forage grass for animals, but it is not considered to be of high value or of great importance, it is unable to tolerate heavy grazing.

