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Some Invasive Alien Flora of Warud region Dist. Amravati (M.S.)

[1]Dr. P. J. Deshmukh and [*2]Dr. M.B. Bobade

[1&2]Department of Botany, Mahatma Fule Arts, Commerce & Sitaramji Chaudhari Science Mahavidyalaya, Warud, Dist. Amravati Affiliated to S.G.B.Amravati University

ABSTRACT

Alien species are exotic or non- native organisms that occur their outside adapted ranges & dispersal potential. Many alien species support our forming & forestry system in a big way. However, some of the species become invasive when they are deliberately or unintentionally outside their natural habitats into new areas where they express the capability to establish, invade and outcompete native species. The present study deals with the study of some Invasive alien plants of Warud region, Dist. Amravati, (M.S.), India. A Total No. of 12 Invasive alien plants belonging to 8 families have been recorded. During the analysis most of the dominant species are herb than the tree & shrub. *Alternanthera sessilis, Calotropis gigantea, Calotropis procera, Celosia argentia, Parthenium hysterophorus, Lantana camara, Datura metel, Hyptis sp., Xanthium Argemone maxicana, Vernonia sp.* are some poisonous species found during the study & Most of the invasive species are used locally as medicine, Food Fodder as well as fuel. Better planning & reporting of the new plants in the area are needed early identification & control invasive alien plant species in different seasons. Since the flora of Warud region has not beneficially explored, this study is help in compilation of flora Warud region.

Keywords: *Invasive Alien species, Exotic, Biodiversity, India*

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*Author's Correspondence

Dr. M.B. Bobade

Department of Botany, Mahatma Fule Arts, Commerce & Sitaramji Chaudhari Science Mahavidyalaya, Warud, Dist. Amravati. Affiliated to S.G.B.Amravati University

mangesh.bobade123[at]gmail.com

1. Introduction

Alien species are exotic or non- native organisms that occur their outside adapted ranges & dispersal potential. Many alien species support our forming & forestry system in a big way. However, some of the species become invasive when they are deliberately or unintentionally outside their natural habitats into new areas where they express the capability to establish, invade and outcompete native species.

According Kavita Gupta; National Bureau of Plant Genetic Resources, About 40% of the species in the Indian flora are alien, of which 25% are invasive. R. R. Rao and R. Mu-rugan (Central Institute of Medicinal and Aromatic Plants) discussed the richness of Indian flora and presented a list of major adventive weeds which included Asteraceae weeds such as *Parthenium hysterophorus*, *Eupatorium adenophorum*, *Eupatorium odoratum*, *Mikania micrantha*, *Ageratum conyzoides*, *Galinsoga parviflora*, etc. A list of invasive alien species of Chhattisgarh was presented by K. K. Khanna and *Parthenium hysterophorus* L., which is an exotic species from Tropical America that has naturalized most of India because of its strong invasive potential, attracted several presentations. This weed was first reported in India in 1951 from Maharashtra. The weed is an aggressive colo- nizer of degraded areas with poor ground cover and exposed soil such as fallow wastelands, roadsides and overgrazed pas- tures. It does not usually become established in undisturbed vegetation or in vigorous pastures, and there is a marked inverse relationship between existing plant cover and native weed density. *Parthenium hyster- ophorus* is considered as a noxious weed because of its prolific seed production and fast-spreading ability, allelopathic effect on other plants, strong competitiveness with crops and health hazard to humans as well as animals. The weed is highly al- lergenic and causes respiratory problems, dermatitis and asthma. However, except for allelopathic aspect and crop–weed inter- action, almost no study is available on the impact of this weed on the ecosystem processes. A presentation by A. S. Raghu-

banshi *et al.* (Banaras Hindu University) demonstrated the effect of *P. hysterophorus* on soil nutrient pools and processes in agro ecosystems. It was also emphasized that time and season of sampling also has strong influence on the observed results. The study concluded that in order to assess impact of invasive species, long-term studies are needed as adverse effects take time to appear.

2. Method & Materials:

During the study intensive floristic survey were undertaken of Invasive alien flora in different areas of Warud region, dist. Amravati Maharashtra, India Floristic survey of alien flora is done in every season. The survey was carried out during September 2019- March 2021. Floristic analysis were very clearly indicate that Invasive alien species.

3. Study Area:

Warud is a tehsil place of Amravati district in the Indian state of Maharashtra. Amravati is situated at 20.30oN to21.50oN and76.35oE to 78.27oE. Warud is situated between 21o28 0”N 78o16’0’’ and 21.46oN 78.26oE. Warud tehsil is the eastern end of Amravati district, major part of which borders Madhya Pradesh. The Northern border of Warud tehsil is the mountainous stretch of Satpuda Hills.

4. Characteristics of features of Invasive species:

Invasive alien flora possess characteristic feature like “Pioneer Species” in varied landscapes, tolerant of wide range of soil and weather , generalist in distribution , proceduces, copious amounts of seed that disperse easily , grows aggressive root systems, short generation time, high dispersal rrates, long flowering and fruiting periods, broad native range , abundent in native range. Preliminary data from one intresting study shows that invasive species are likely to have relatively small amounts of DNA in their cell nuclei apparently. The cells in these plants are able to devide & multiply more quickly and consequently the entire plant can grow more rapidly than species with higher cellular DNA content. This gives them a leg up in disturbed sites.

Argemone mexicana

Family :- Papaveraceae
Common Name :- Prickly Poppy
Native from :- Maxico
Distribution in India:- Throughtout
Propagation: - By Seeds
Description:- Erect herbs, to 70 cm, spiny, sap yellow. Leaves alternate, dissected, semi-amplexicaule, membranous, margins spiny, midrib thick. Flowers terminal, solitary, yellow; Fruit Capsule, oblong, spiny, dehiscing apically downwards; seeds rugose .
Remarks: - Aggressive colonizer, Found in Scrubland, fields.

Alternanthera sessiles

Family :- *Amranthaceae*
Common Name :- Smooth joyweed
Native From :- Tropical America
Distribution :- Throughtout India
Propagation:- By Seeds
Discription :- Soft-stemmed prostrate perennial herb, hairy, later glabrescent; leaves elliptic, ovate-rhombic to spatulate, hairy beneath; flower greenish-white in axillary sessile heads; bracts less than half as long as tepals ; tepals similar, white, ovate-oblong, acuminate, outer 3 3-veined, inner 2 1-veined; pseudostaminodes shorter than stamens, 3-4- toothed; utricle obcordate, brown.
Remarks: - Occasional weed along with edges of tanks. Found in Ditech & in marshy places.

Calotropis gigantea

Family :- *Asclepiadaceae*
Common Name :- Madar
Native from :- Trop. Africa
Distribution in India:- Throughtout
Propagation :- By Seeds
Discription :- It is a large shrub growing to 4 m tall. It has clusters of waxy flowers that are either white or lavender in colour. Each flower consists of five pointed petals and a small "crown" rising from the center which holds the stamens. The aestivation Calotropis is valvate. The plant has oval, light green leaves and milky stem.
Remarks: - Aggressive colonizer Found in waste land, Scrub land.

Calotropis procera

Family :- *Ascalpiadaceae*
Common Name :- Milky weed
Native from :- Tropical Africa
Distribution in India :- Throughtout
Propagation:- By Seeds
Discription:- Errect, Flowering shrub about 2-5 m tall, leaves deccusate, obovate, subsessile, stem containing milky latex, Infloresence polychasial cyme, flowers are purple & white,Fruit Elario follicle, numerous brown seeds with white silky hairs.
Remark :- Aggressive colonizer, found in waste land.

Celosia argentea

Family :- *Amranthaceae*
Common Name :- Wool Flower
Native from :- Tropical America
Distribution in India :- Throughtout
Propagation:- By Seeds
Discription:- Errect herb to 1m**,** with a straight, juicy and unbranched stem. Its elliptic leaves lanceolate, are green or red- tanned with terminal inflorescences, thick and flattened, velvety, in the form of ridge crest, in the colors red, whitish, roseate or creamy yellow.
Remarks:- Aggressive colonizer, found in Field & scrub land.

Cuscuta reflexa

Family :- *Cuscutaceae*
CommonNam:-Dodder
Native from :- Mediterranean
Distribution in India :- Throughtout
Propagation:- By Seeds
Discription:- Stout twiners; yellowish. Flowers sessile in lateral racemes. Calyx cupular, lobes herbaceous, suborbicular. Corolla cream colored, funnel-form; lobes ovate-triangular, erect, Fruit Capsule succulent, globose-conical. Seeds black.
Remarks:- Aggressive colonizer, Occasinal stem parasite on garden shrub

Datura metel

Family :- *Solanaceae*
Common Name:- Dhotra
Native from :- Tropical America
Distribution in India :- Throughtout
Propagation:- By Seeds
Discription:- *Datura metel* is a shrub to 1.4 m tall and somewhat variable in appearance. Its stems are slightly furry, with dark violet young shoots. With hairless leaves, oval to broad oval, flowers are immensely varied, and can be single or double. Flower colour ranges from white to cream, yellow, red, and violet. The fruits are knobby, not spiny with blunt protuberances, or with longer prickles.
Remarks :-Aggressive colonizer, occasional weed on distered ground.

Hyptis suaveolens

Family :- Lamiaceae
Common Name:- Rantulas
Native from :- Tropical Mexico
Distribution in India :- Throughtout
Propagation:- By Seeds
Discription:- Hyptis an erect annual herb branched and measuring between 50 cm and 2 m high. It is a plant strongly aromatic, entirely pubescent, 4-angle stem marked with strong axillary inflorescence loose group of small blue flowers.
Remark: -Aggressive colonizer, Found in field, scrub, waste land.

Lantana camara

Family :-Verbenaceae
Common Name:- Raimuni
Native from :- Tropical America
Distribution in India :- Throughtout
Propagation:- By Seeds

Discription:- A thorny shrub upright, half climbing or sometimes more or less hanging, reaching 2-3 m in height. The stems and branches are angular, bearing curved spines, arranged along the edges. The leaves are simple, opposite, decussate with rough lamina, oval, regularly dentate with acute apex.

Remark: - Aggressive colonizer, found in waste land.

Parthenium hysterophorus

Family :-Asteraceae
Common Name:- Congress grass
Native from :- Tropical America
Distribution in India :- Throughtout
Propagation:- By Seeds
Discription :- A much-branched, annual, erect, herbaceous plant that forms a basal rosette of leaves during the early stage of growth. Mature stems are greenish and longitudinally grooved, covered in small stiff hairs and become much branched at maturity. Leaves are simple with stalks and form a basal rosette during the early stages of growth. The lower leaves are relatively large and are deeply divided Numerous small flower-heads (Capitulum) are arranged in clusters at the tips of the branches in terminal panicle, white or cream in colour are surrounded by two rows of small green involucre bracts. Fruit achene consist of a black seeds
Remark :- Aggressive colonizer, found in waste, scrub land.

Vernonia cinereal

Family *:-Asteraceae*
Common Name:- sadodi
Native from :- China
Distribution in India :- Throughtout
Propagation:- By Seeds
Description:- An erect, rarely decumbent, annual herb grows up to 75 cm in height. Stem: slender, grooved and ribbed. Leaves: simple, alternate, variable in shape, broadly elliptic or lanceolate, membranous or coriaceous. Flowers: pinkish and purple, rounded or flat-topped corymbs. Achenes: oblong, terete, & slightly narrowed at the base. Fruits: oblong achenes, slightly narrowed base, white hairs on one side.
Remarks:- Aggressive colonizer, found in waste , scrub land.

Xanthium strumarium

Family :-Asteraceae
Common Name:- Gokhru
Native from :- North America
Distribution in India :- Throughtout
Propagation:- By Seeds
Description:- plant is coarse, erect, branching, annual herb which reproduces solely by seed; stems 30 to 150 cm tall, tough, with short dark streaks or spots and covered with short hairs which give a coarse texture; leaves alternate, triangular-ovate to broadly ovate in shape, base often cordate, margins irregularly toothed or lobed, both surfaces rough-pubescent; flowers monoecious, male flowers inconspicuous, many-flowered heads 5 to 8 mm across, clustered at the tips of branches or axillaries above the female flowers, female flower heads axillary, greenish, two flowers in the head enclosed by the involucre; fruit, a hard brown, ovoid bur, 1.5 to 2.5 cm long, covered with hooked spines 2 to 4 mm long, and with two terminal beaks, fruits readily stick to clothing and fur, and thus are easily spread; seeds (achenes) black, two in each bur, one above the other.
Remarks:- Aggressive colonizers, Found on road side.

5. Result & Disscussion

In present paper, total 12 Invasive allien species are studied belonging to 8 families. Botanical name, Family, Native place, Distribution in, Propagation , description & remars are given. Tropical America (6 species) region contribute the greastest to the number (50%) follwed by Africa region (20%). Other regions which contribute minority are Mexico, China, Mediterranean.

Habit wise analysis shows that most of the invasive alilen species are herb (70%) than shurb (20%) and trees (0%) & Climbers (10%). Of the 8 families, Asteraceae(30%), Amranthaceae(20%), Asclepiadaceae (20%) are most dominant families, followed by Solanaceae, Verbenaceae, Cuscutaceae, papaveraceae & Lamiaceae.

The invasive allien flora are aggressivly colonizers in distribution areas and cause ecological damage to india's natural area, speedly disappearance of threatened & endemic species, Loss of native biodiversity, Degradation of habitats leading to extinction of ecosystems, Loss of plant species, particularly fruit bearing wild bushes and shrubs that form the food base for wildlife at different tropic levels and also serves as cover for Tiger, Loss or decline of wildlife populations, Loss of or reduction in ecosystem services ,High incidence of man-wildlife conflicts,Replacement of grasslands in protected areas ,Altering ecosystem functions, nutrient cycle, fire regime, hydrology, energy budget, reduction in recreation values of landscapes,enhancement of soil erosion and loss of moisture.

Invasive alien plants pose a major challenge for most of the countries and across the rest of the developing world. They are a cross-cutting issue and thereby affect all major economic sectors of countries – agriculture, environment and trade. Most significantly, humans are both 'drivers' and victims of invasive plants. A lack of comprehensive management responses to the issue has created and is perpetuating the unprecedented introduction of new invasive plant species into countries and the rapid expansion of existing invasive species. What is more, the problems continue to escalate in rural areas, with serious negative impacts on the livelihoods of the people. So, it is clear that there is a crisis in the making. In some countries, communities try to control or utilize invasive species, including some invasive plants, but this rarely works and has yet to be demonstrated to be sustainable.

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