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WEED FLORA OF CULTIVATED FIELDS FROM OSMANABAD, MAHARASHTRA.

S. L. Korekar

Department of Botany, Yashwantrao Chavan Mahavidyalaya, Tuljapur.

Abstract:-Weeds grow on soil along with crop plants.. It has been noticed that certain weeds are found associated with specific crops. The research area was extensively surveyed to investigate weed species in crop fields of Osmanabad district in Maharashtra state. The study was based on extensive and intensive field surveys made in different Kharif and Rabi seasons during 2012-2013. Crop fields from the study area were surveyed for the weed studies. About 59 weed species were collected from different fields of Osmanabad district. Weeds belong to 20 plant families, but certain families particularly Poaceae, Asteraceae, Euphorbiaceae, Amaranthaceae, Cyperaceae and Fabaceae constitute the major weed flora. Moreover, the farmers of the studied area used a number of weeds as a fodder and green vegetables.

Keywords: Weed flora, Osmanabad, Crop fields, survey.

INTRODUCTION

Weeds grow on soil along with crop plants. But this growth of weed is not desirable in the monoculture system. These undesired plants deplete the nutrients, water and space allotted for the intended crop, and finally cause huge reduction in crop yield. Weeds, in crop field, reduce input efficiency, interfere with agricultural operations, impair quality and act as alternate hosts for several insect pests and diseases. Some weeds release toxic substance which affects the crop growth.

A weed can be defined as those plants whose negative values outweigh their positive values. Weeds are divided into Rabi and Kharif weeds. Rabi weeds infest the rabi season crops, while kharif weeds infest the kharif crops. The majority of weeds are annuals with high reproductive potential (Grime, 1979, Walker and Evenson, 1985; Eberlein et al. 1988) Majority of the population of Osmanabad is living in the rural areas and their dependence is mainly on agricultural products. The cultivated area of agriculture and forests are decreasing rapidly due to growing population, so the available resources are not sufficient to fulfill the requirements of the growing population. Weeds reduce production of crops through competition for nutrients, water, light and space. Specific damages caused by weeds include a lower crop yield, less efficient use of land, higher cost to control insects and plant diseases, poor quality products, more water management problem and lower human efficiency (Klingman and Ashton, 1982). "Weeds as an undesirable, injurious, unsightly trouble-some plants which interfere with cultivated crops and affect human affairs" (Thakur, 1984). In this sense, it is very important that plants listed as weeds are attributed by the situation in which they adversely affect man's affair or social life. Weeds are unwanted and undesirable plants, which interfere with the utilization of land and water resources and thus adversely affect human welfare. They can also be referred as plants out of place. Weeds compete with the beneficial and desired vegetation in crop lands, forests, aquatic systems etc., and poses great problem in non-cropped areas like industrial sites, road or rail lines, air fields, landscape plantings, water tanks, water ways etc. Weeds are an important factor in the management of all land and water resources, but its effect is greatest on agriculture. There is no reliable study on worldwide damage due to weeds.

STUDY AREA:

Osmanabad district is located in the southern part of Marathwada, between 17.35 to 18.40 North latitude

and 75.16 to 76.4 East longitudes. It is located about 600 meters above the sea-level. The total geographical area of Osmanabad district is 7512.4 sq. kms, of the total geographical area 241.4 sq. kms area is urban and 7271.00 sq. kms. area is rural, indicating the dominance of the rural sector i.e. 97%. There are a total number of 737 villages in the district (Agril census 2011).

Agriculture and allied activities are the main sources of livelihood for majority of rural masses and control the economy of the district. Total geographical area of Osmanabad district is 748500 ha, the net sown area is 584400 ha. (78.1%) and total gross cropped area is 752300 ha. The soils of the district can be divided into two categories. In the first category, the soils are black and fertile; a part of the district has light soils. Due to such characteristics of the soils, both kharip and Rabi crops are raised in the district. About 46.21 % of total gross cropped area is under Kharif crops and 36.87% is under rabi crops. The crops such as kharip Sorghum, Bajra, Maize, , pulses like Tur, Gram, Green gram, Black gram; oilseeds as Soybean, Safflower, Sunflower, Groundnut ; sugarcane and Fruits, Vegetables are common. Proportion of Soybean is maximum in Kharif season followed by Tur, kharip Jowar, etc. Similarly proportion of rabi Jowar is maximum in rabi season. Wheat, Sugarcane, Gram is cultivated on irrigated area.

MATERIAL AND METHODS:

The present work is based on the results of more than a year of study on the weeds flora of district Osmanabad with special reference to their association with Kharif and rabi crops. Excursions were undertaken monthly during the research period. The crop fields which were surveyed during the research period included Soybean, Tur, kharif Jowar, Green gram, Black gram, Maize, Sunflower, Safflower, wheat, gram, rabi Jowar etc. Weed species with high frequency were collected to know the Botany of plants. Plants were identified by using floras of Naik 2000; Hooker, 1972-1987; Cooke, 1901-1908. Plant photographs have been taken on the spot during survey.

Table-1: Weeds Flowering from July- October.

BOTANICAL NAME	FAMILY	COMMON NAME
<i>Acalypha indica</i> L.	Euphorbiaceae	Indian nettle, Khapi.
<i>Acalypha hispida</i> burm.f.	Euphorbaceae	Cats-tail.
<i>Alternanthera pungens</i>	Amaranthaceae	Reshim kata
<i>Ammannia baccifera</i> L.	Lythraceae	Bhar-jambhul
<i>Amaranthus viridis</i> L.	Amaranthaceae	Math
<i>Amaranthus spinosus</i> L.	Amaranthaceae	Kate-math
<i>Andropogon pumilus</i> Roxb.	Poaceae	Tambat.
<i>Aristida adscensioins</i> L.	Poaceae	Kusal.
<i>Aristida funiculata</i> Trin &Ruper	Poaceae	Pandhre kusal
<i>Arilostolochia bracteolate</i> .Lamk.	Aristolochiaceae	Kidamar.
<i>Artemisia pallens</i> Wall.	Asteraceae	Davana
<i>Brachiaria erusiformis</i> (J.E.Smith)	Poaceae	Shiprut
<i>Brachiaria ramosa</i> (L).	Poaceae	Chapsura
<i>Chapsura reptans</i> (L).	Poaceae	Chiman-chara.
<i>Cassia tora</i> (L.) Roxb.	Caesalpinaceae	Tarwat
<i>Celosia argentea</i> L.	Amaranthaceae	Kurdu
<i>Chionachne koenigii</i> (Sperg)	Poaceae	Kate karvel
<i>Cleome viscosa</i> L.	Cleomaceae	Pivali tilvan
<i>Commelina benghalensis</i> L.	Commelinaceae	Kena
<i>Commelina diffusa</i> L.	Commelinaceae	Kena
<i>Convolvulus arvensis</i> L.	Convolvulaceae	Chandvel
<i>Cymbopogon martini</i> Roxb.	Poaceae	Rosha gavat
<i>Cyperus rotundus</i> L.	Cyperaceae	Lavala
<i>Cyperus tenuispica</i> L.	Cyperaceae	Nager motha
<i>Cyperus pangorei</i> . Rottb.	Cyperaceae	Tambat.

<i>Cyperusscariosus R.</i>	Cyperaceae	Nager motha-Large
<i>Dentanema indicum (L.)</i>	Asteraceae	Sonkadi
<i>Dichanthium forelanthum (Del.)</i>	Poaceae	Marvel
<i>Dichanthium pertusum(L.)</i>	Poaceae	Palva
<i>Dinebra retroflexa (Vahl) Panzer</i>	Poaceae	Lona
<i>Eleusine indica (L.) Gaertner</i>	Poaceae	Mar-nachani
<i>Euphorbia hirta L.</i>	Euphorbiaceae	Dudhani
<i>Euphorbia indica Lam.</i>	Euphorbiaceae	Dudhani
<i>Glossocordia bosovallia (L.f.)</i>	Asteraceae	Khadak shepu
<i>Launaea procumbens (Roxb.)</i>	Asteraceae	Pathari
<i>Lagascea mollis Cav.</i>	Asteraceae	
<i>Martynia annua L.</i>	Martyniaceae	Kena, Winchu.
<i>Parthenium hyterophorus L</i>	Asteraceae	Gajer ghas.
<i>Phaseolus trilobus (L.) Aiton & auct.</i>	Fabaceae	Ran moogi
<i>Physalis minima L.</i>	Solanaceae	Popati
<i>Portulaca oleracea L.</i>	Portulacaceae	Ghol
<i>Portulaca quadrifida L.</i>	Portulacaceae	Ghol
<i>Setaria pumila (poir.)</i>	Poaceae	kolwa
<i>Sida acuta Burm. f.</i>	Malvaceae	Madanghanti
<i>Sonchus asper (L.) Hill</i>	Asteraceae	Mhatari
<i>Spermacoce articularis L.</i>	Asteraceae	
<i>Striga asiatica (L.) Ktze.</i>	Scrophulariaceae	Talakh
<i>Vernonia cinerea (L.) Less.</i>	Asteraceae	Sahadevi.
<i>Xanthium strumarium L.</i>	Asteraceae	Kutri.

Weeds Flowering from November-June (Autumn Weeds)

BOTANICAL NAME	FAMILY	COMMON NAME
<i>Ageratum conyzoides L.</i>	Asteraceae	Osandi.
<i>Biophytum sensitivum (L.) Don.</i>	Oxalidaceae	Lajalu
<i>Dichanthium aristatum(poir.) Hubb.</i>	Poaceae	Marvel
<i>Dinebra retroflexa (Vahl) Panzer.</i>	Poaceae	Lona
<i>Euphorbia microphylla Heyne ex. Roth.</i>	Euphorbiaceae	Pisola
<i>Melilotus indicus (L.) All.</i>	Fabaceae	Ranmethi.
<i>Merremia aegyptia (Linn.) Urban</i>	Convolvulaceae	Undir kani
<i>Polygonum plebeium R. Br</i>	Polygoniaceae	
<i>Psoralea corylifolia L.</i>	Fabaceae	Bawachi.
<i>Stemodia viscosa Roxb.</i>	Scrophulariaceae	
<i>Themeda triandra Forssk.</i>	Poaceae	Batani.
<i>Tribulus terrestris L.</i>	Zygophyllaceae	Sarata,Gokhru.

RESULT AND DISCUSSION:

Weed flora of the study area is comprised of 59 species distributed across 20 family's .The dominant weeds prevailing in crops were *Aristida adscensioins*, *Cyperus spp.*, *Dichanthium spp.* *Chapsura reptans*, *Commelina spp.*, *Commelina spp.* *Vernonia cinerea*, and *Tribulus terrestris* .The other reported weeds were of rare occurrence. The detail list of weeds identified in crop fields in the study area along with their scientific names, family and Local names are given in Tables 1.

The predominance was shown by, Poaceae,Asteraceae,Euphorbiaceae Amaranthaceae ,Cyperaceae and Fabaceae represented by 14,10,05,05,04 and 03 weed species respectively. Commelinaceae, Convolvulaceae, Portulacaceae and Scrophulariaceae were represented by two species each. Malvaceae,Solanaceae,Cleomaceae, Martyniaceae, Caesalpiniaceae, Oxalidaceae, Aristolochiaceae,Lythraceae, Polygoniaceae and Zygophyllaceae were by oniy one species in study area. Weeds grow in crop fields and these unwanted plants can one of the major additional sources of the ethenomedicinal importance of the human diet.

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