



ISSN: 2230-9926

Available online at <http://www.journalijdr.com>

# IJDR

**International Journal of  
DEVELOPMENT RESEARCH**

*International Journal of Development Research*  
Vol. 5, Issue, 07, pp. 4892-4894, July, 2015

## **Full Length Research Article**

### **RARE PLANTS OF DISTRICT MUZAFFARNAGAR, UP, INDIA**

**\*Vijai Malik**

Department of Botany M.S. College Saharanpur (U.P.) India

#### **ARTICLE INFO**

##### **Article History:**

Received 21<sup>st</sup> April, 2015  
Received in revised form  
06<sup>th</sup> May, 2015  
Accepted 23<sup>rd</sup> June, 2015  
Published online 30<sup>th</sup> July, 2015

##### **Key words:**

Rare Species, Poaceae,  
Asteraceae, Muzaffarnagar (UP)

#### **ABSTRACT**

This paper gives an insight to 70 rare species belonging to 65 genera and 37 families of Muzaffarnagar district (U.P.) collected from different localities. Out of these 59 are Dicots and 11 are Monocots. Poaceae and Asteraceae were found to have maximum rare species.

Copyright © 2015 Vijai Malik. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

#### **INTRODUCTION**

The district Muzaffarnagar is the western part of U.P. and lies in the upper Indo- gangetic plain. The whole area is fertile with sugarcane, wheat, and rice being the principal crops. It has one of the most fertile farming lands in India. The district Muzaffarnagar lies in the south of Saharanpur and is located at 29<sup>o</sup> 28<sup>1</sup> N latitude and 77<sup>o</sup> 44<sup>1</sup> E longitude. Rainfall is the most important climatic factor which affects vegetation of this area. 80-90% rainfall occurs during monsoon season from mid June to mid September and temperature varies from very high to very low in summer and winter respectively. In the month of May and June maximum temperature shoots up to 45<sup>o</sup> c and falls to a minimum up to 1<sup>o</sup> in December and January. A rare species is a group of organisms that are very uncommon or scarce. This designation may be applied to either a plant or animal taxon. The rarity term is used more commonly without reference to specific criteria. This term has not been included in the IUCN categories. The concept of rarity is established from having a very small number of organisms worldwide, usually a number less than 10,000; however, the concept is also influenced by having a very narrow endemic range and/or fragmented habitat. A rare species is which occurs very infrequently or existing in small number less than 20,000 (Nayar and Sastry, 1987, Red Data book of Indian Plants). In 20<sup>th</sup> century (before 1950) in this area the cultivated land was less but after that the cultivated land was increased resulting in loss of habitat due to which several species become rare in this area. Thus habitat loss is the major cause of species being rare and threatened. Timber harvesting, the creation of farmlands, overexploitation, loss of wetlands and water bodies etc are some

of the factors that have caused habitat loss and thus rarity of the species. This paper gives an insight to 70 rare species belonging to 65 genera and 37 families of Muzaffarnagar district (U.P.) collected from different localities (Table 1). Out of these 59 are Dicot and 11 are Monocot. Poaceae and Asteraceae were found to have maximum rare species.

#### **MATERIALS AND METHODS**

In the course of investigation from 1995-1998 & 2010-2011, the entire district was frequently surveyed. Several attempts were made for collection and study in different seasons in different botanically interested localities like Shukartal, Rohana, Shahpur, Budhana, Titawi, Kairana, Shamli, Kandhala, Jaroda, Purkaji, Charthawal, Oon, Chausana, Ganga Khadar etc. During field trips plants were collected from different localities like roadsides, garden, parks, and cultivated lands of Sugarcane, Rice, Wheat, Jowar etc. Efforts were made to collect specimens in flowering and fruiting stage and at the same time they were numbered with tags and collected in polythene bags. The collected plants were, processed, preserved and mounted on herbarium sheets following the standard herbarium techniques (Jain and Rao 1978). The history of taxonomic research of this area goes back hundreds of year when several workers like J. F. Duthie, J.F. Royle etc collected and described the plants of this region. Gupta (1961) worked out the Flora of District Muzaffarnagar and reported 341 species. Tayal and Bhasin (1970) revised list of plants of Muzaffarnagar wherein they reported 60 additional species. Similarly Malik *et al.* (2010) worked out a sacred grove in Muzaffarnagar district, wherein they have reported 120 species. The dried specimens were identified following different literatures like "The Flora of British India" by J. D. Hooker (1872-1897), Duthie's flora of Upper Gangetic Plain and adjacent

**\*Corresponding author: Vijai Malik,**

Department of Botany M.S. College Saharanpur (U.P.) India.

*Hygryza aristata**Trifolium tomentosum**Utricularia aurea**Zehneria scabra**Sapium sabiferum**Trewia polycarpa**Lotus corniculatus**Lycium europium*

Plate 1.

Table 1.

BOTANICAL NAMES	HABIT	FAMILY	LOCATION	COLLECTION NO.
<i>Achyranthes bidentata</i> Bl.	Herb	Amaranthaceae	Ramraj	1815
<i>Artemisia nilagirica</i> (Clarke) Pamp.	Herb	Asteraceae	Shamli	5074
<i>Balanites aegyptiaca</i> Delile	Tree	Balanitaceae	Kharar	3348
<i>Barringtonia acutangula</i> (L.) Gaertn.	Tree	Myrtaceae	Mzn City	921
<i>Celastrus paniculatus</i> Willd.	Shrub	Celastraceae	Shukartal	996
<i>Cinnamomum tamala</i> (Buch.-Ham.) Nees. & Eberm.	Tree	Lauraceae	Mzn City	870
<i>Circium wallichii</i> DC.	Herb	Asteraceae	Alum	4152

.....Continue

<i>Clematis roylei</i> Rehder.	Shrub	Ranunculaceae	Thanabhawan	2020
<i>Debregeasia salicifolia</i> (D. Don.) Rendle	Shrub	Urticaceae	Banat	3206
<i>Dioscorea alata</i> L.	Climber	Dioscoreaceae	Charthawal	2132
<i>Diospyros peregrina</i> (Gaertn.) gurke	Tree	Ebenaceae	Heend	2163
<i>Drypetes roxburghii</i> (Wall.) Hurusawa	Tree	Euphorbiaceae	Mirapur	3747
<i>Duchesnea indica</i> (Andr.) Focke	Herb	Rosaceae	Rampur	4143
<i>Eleusine coracona</i> (L.) Gaertn.	Herb	Poaceae	Banat	3336
<i>Galinsoga parviflora</i> Cav.	Herb	Asteraceae	Shukartal	5037
<i>Gnaphalium pulvinatum</i> Delile.	Herb	Asteraceae	Kairana	893
<i>Hedyotis affinis</i> (Roem. & Schult.) DC.	Herb	Rubiaceae	Bharsi	4191
<i>Helinus lanceolatus</i> Brand.	Shrub	Rhamnaceae	Barla	741
<i>Hygryza aristata</i> (Retz.) Nees ex Wt.Arn	Herb	Poaceae	Shukartal	1033
<i>Indigofera astragalina</i> DC.	Herb	Fabaceae	Oon	155
<i>Indigofera glandulosa</i> Willd.	Herb	Fabaceae	Shukartal	1004
<i>Ipomoea dichroa</i> (Roem. ex Schult.) Choisy	Herb	Convolvulaceae	Bamanheri	706
<i>Kirganelia reticulata</i> (Poir.) Bail.	Shrub	Euphorbiaceae	Mzn City	168
<i>Leptochloa panicea</i> (Retz.) Ohwi.	Herb	Poaceae	Mzn City	469
<i>Limonia acidissima</i> L.	Tree	Rutaceae	Kairana	875
<i>Lotus corniculata</i> L.	Herb	Fabaceae	Mzn City	3621
<i>Lycium europaeum</i> L.	Shrub	Solanaceae	Thanabhawan	2102
<i>Manilkara hexandra</i> (Roxb.) Dub.	Tree	Sapotaceae	Thanabhawan	2156
<i>Mentha piperita</i> L.	Herb	Lamiaceae	Chitora	556
<i>Merremia aegyptica</i> (L.) Urban.	Herb	Convolvulaceae	Bhopa	2660
<i>Millingtonia hortensis</i> L.f.	Tree	Bignoniaceae	Shukartal	5032
<i>Mitragyna parviflora</i> (Roxb.) Korth.	Tree	Rubiaceae	Mzn City	584 a
<i>Mollugo nudicaulis</i> Lamk.	Herb	Molluginaceae	Rohana	2611
<i>Monochoria hastata</i> (L.) Solm.	Herb	Pontederiaceae	Chitora	593
<i>Morinda tinctoria</i> Roxb.	Tree	Rubiaceae	Shamli	2037
<i>Morus serrata</i> Roxb.	Tree	Moraceae	Bahadarapur	3570
<i>Mucuna pruriens</i> (L.) DC.	Climber	Fabaceae	Shukartal	3654
<i>Nepeta graciliflora</i> Benth.	Herb	Lamiaceae	Ramraj	2981
<i>Nigella sativa</i> L.	Herb	Ranunculaceae	Mzn City	5001
<i>Oenothera rosea</i> W. Ait.	Herb	Onagraceae	Mzn City	3606
<i>Orthosiphon pallidus</i> Royle ex Benth.	Herb	Lamiaceae	Podawali	2619
<i>Otelia alismoides</i> (L.) Pers.	Herb	Hydrocharitaceae	Purkaji	620
<i>Paspalidium geminatum</i> Forsk.	Herb	Poaceae	Jaroda	1500
<i>Pavonia repanda</i> (J. E. Sm.) Spreng	Herb	Malvaceae	Mzn City	5012
<i>Perilepta auriculata</i> (Nees.) Bremek.	Shrub	Acanthaceae	Kakroli	2945
<i>Phyllanthus maderaspatensis</i> L.	Herb	Euphorbiaceae	Heend	2207
<i>Phyllanthus virgatus</i> Forst.	Herb	Euphorbiaceae	Shamli	5092
<i>Pouzolzia hirta</i> Hassk.	Herb	Urticaceae	Barla	1722
<i>Pulicaria angustifolia</i> DC.	Herb	Asteraceae	Oon	633
<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	Shrub	Apocyanaceae	Shukartal	3616
<i>Rhus parviflora</i> Roxb.	Shrub	Anacardiaceae	Gordhanpur	2628
<i>Roylea cinerea</i> (D. Don) Baillon	Herb	Lamiaceae	Janshat	2295
<i>Sageretia filiformis</i> (Roth ex Schult.) G.Don	Shrub	Rhamnaceae	Ramraj	1841
<i>Sapium sabiferum</i> (Michx.) Roxb.	Tree	Euphorbiaceae	Heend	2192
<i>Saussurea heteromalla</i> (D.Don) Hand-Mazz.	Herb	Asteraceae	Kandhala	4237
<i>Scirpus comosus</i> Wall.	Herb	Cyperaceae	Mzn City	3653
<i>Scirpus supinus</i> L.	Herb	Cyperaceae	Alum	4260
<i>Scutellaria repens</i> Buch.-Ham. ex D.Don	Herb	Lamiaceae	Shamli	4067
<i>Securinega virosa</i> (Roxb. Ex Willd.) Baillon	Shrub	Euphorbiaceae	Shukartal	5040
<i>Solanum indicum</i> L.	Herb	Solanaceae	Heend	2242
<i>Solanum torvum</i> Sw.	Shrub	Solanaceae	Alum	4124
<i>Sterculia villosa</i> Roxb.	Tree	Sterculiaceae	Janshat	2299
<i>Swietenia mahagoni</i> Jacq.	Tree	Meliaceae	Mzn City	5002
<i>Telosma pallida</i> (Roxb.) Craib.	Shrub	Asclepiadaceae	Kanyan	4098
<i>Trewia polycarpa</i> Benth.	Tree	Euphorbiaceae	Shukartal	5035
<i>Trifolium tomentosum</i> L.	Herb	Fabaceae	Mzn City	381
<i>Utricularia aurea</i> Lour.	Herb	Lentibulariaceae	Jhinjhana	2027
<i>Utricularia inflexa</i> Forsk. var. <i>stellaris</i> (L.f.) P.Taylor	Herb	Lentibulariaceae	Ramraj	3768
<i>Zehneria scabra</i> (L.f.) Sond.	Climber	Cucurbitaceae	Shukartal	984
<i>Zingiber officinale</i> Rosc.	Herb	Zingiberaceae	Banat	5090

Sivalik and Sub Himalayan tract, Kanjilal's Forest flora of Chakrauta, Dehradun and Saharanpur forest division (1901), Herbaceous flora of Dehradun by C.R. Babu (1977) etc. Besides dried sheets were also matched and confirmed with the DD Herbarium, FRI Dehradun. The herbarium sheets are preserved in the Department of Botany, M. S. College Saharanpur and C.C.S. University, Meerut. Images and list of plants various taxa are given in Plate 1 and Table 1.

**Conclusion:** Each living plant or animal may have values yet undiscovered. A species cannot survive without a home. First priority in protecting a species must be to ensure its habitat remains intact. Habitat protection is the key to protect our rare, threatened and endangered species. Habitat loss is the major cause of species being rare and endanger. Timber harvesting, the creation of farmlands, overexploitation, loss of wetlands and water bodies etc are some of the factors that have caused habitat loss and thus rarity of the species in the study area.

**Acknowledgement:** The authors are grateful to Dr. Devendra Kumar ex Reader and Head Department of Botany C.C.R. (P.G.) College Muzaffarnagar for encouragement.

## REFERENCES

- Babu, C.R. 1977. The Herbaceous flora of Dehradun. CSIR, New Delhi
- Duthie, J.F. 1903-1929. Flora of the Upper Gangetic Plain and of the Adjacent Sivalik and Sub-Himalayan Tract. Calcutta, India.
- Gupta, R.K. 1961. Flora of district Muzaffarnagar in the Doab of Rivers Ganga and Yamuna. *J. Bombay Nat. Hist. Soc.*, 58 (3): 749-775
- Hooker, J.D. 1872-1897. The Flora of British India. Bishen Singh Mahendra Pal Singh, Dehradun India.
- Jain, S.K. and R. R. Rao 1978. A Handbook of Field and Herbarium Methods. Today and Tomorrow's Pub. New Delhi.
- Kanjilal, U. N. 1928. Forest flora of Chakrauta, Dehradun and Saharanpur forest division. Bishen Singh Mahendra Pal Singh, Dehradun.
- Malik, V. I. Mohammad and Pranita 2010. Glitter of plant diversity in the sacred grove of Kharar, Muzaffarnagar (U.P.). *Indian Journal Forestry*, Vol. 33 (3): pp.337-342.
- Tayal, M. S. and Bhasin, L. 1970. Additional notes on the flora of Muzaffarnagar (U.P.) *Bull. Bot. Surv. India* 12: 203-207.