eISSN 2581-8996
ONLINE
THE INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN MULTIDISCIPLINARY SCIENCES (IJARMS)
A BI-ANNUAL, OPEN ACCESS, PEER REVIEWED (REFEREED) JOURNAL
Vol. 4, Issue 02, July 2021

Quantitave Analyses of soil of some plants growing near Carpet Industries

Saumya Mishra[1]
[1]Assistant Professor, Department of Botany, KN Govt. PG College, Gyanpur, Bhadohi, UP

Received: 07 July 2021, Accepted: 15 July 2021, Published with Peer Review on line: 10 Sep 2021

Abstract

The present paper describes for the first time an account of quantity analyses of soil of some plants important plants growing near carpet factories. A total of 20 species have been documented with brief notes on salient features of ecology, therapeutic uses and soil profile of each species and conservation.

Key words: quantitative, soil,carpet.

Introduction

The soil exhibits spatial variation owing to anthropogenic land use patterns and physical, chemical and biological activity. Due to diverse geographical, physiological, and ecological diversity, India is regarded as one of the mega-biodiversity centers. The demand for herbal plants is rising as a result of the flourishing traditional medicine sector. Moreover, the use of high levels of chemical fertilizers decreases the medicinal plant nutrients uptake and induces either stagnation,or decrease in yields and environmental pollution. Accurately identifying suitable medicinal plant species based on specific soil conditions is crucial for agriculture, horticulture and environmental studies. Sustainable management of the natural habitat is an environmental issue concerning biodiversity protection and the welfare of local communities because of the diminishing availability of such herbal plants and the vanishing local traditional knowledge. The availability of nutrients and organic matter in the soil affects the plant growth.

MATERIALS AND METHODS

The study was carried out in rural areas of Bhadohi district near carpet factories which includes Milkiya, kashipur, Bhadohi, Suriyawan, Gyanpur, Deegh, Abholi and Aurai. Local experienced persons and herbal practictoners were consulted to know about the use of various medicinal plants growing in their localities. Frequent field trips were made to the sites by one of the author (Saumya Mishra) and voucher specimens of plants identified as medicinally important were collected. Species identification was achieved by comparison with specimens of Indian herbarium, digital herbaria (e-Floras 2008, WCSP 2012, The Plant List 2013, POWO 2019,) and perusal of relevant literature. Medicinal values of these plants were compared with various studies especially from among the rural and tribal communities (Tiwari et al. 2012, Mishra et al. 2016, 2017, 2019,; Mishra & Mishra 2017, 2018a, b, 2019. The voucher specimens have been deposited in the herbarium of Department of Botany, KN Govt. PG College, Gyanpur, Bhadohi, Uttar Pradesh. Soil solution was prepared and tested for various parameters using modern instruments & standard protocols.

RESULTS AND DISCUSSION

In the present investigation, 20 plant species belonging to 20 genera under 16 families were described from Bhadohi District, which have been enumerated here, along with their botanical name, vernacular name, family, habit, habitat and pharmacological uses. Paedological quantitative analyses of soil was also provided such as -available organic carbon, phosphorous, potash, copper, iron, manganese, zinc in soil of each species (Table-1,).

Some of the important medicinal plants are described below:

eISSN 2581-8996
ONLINE
THE INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN MULTIDISCIPLINARY SCIENCES (IJARMS)
A BI-ANNUAL, OPEN ACCESS, PEER REVIEWED (REFEREED) JOURNAL
Vol. 4, Issue 02, July 2021

1*Alternanthera sessile* (L.) DC. Khakhi weed Amaranthaceae

Habit & habitat-Aquatic, herb, growing near semiaquatic areas, near ponds

***2 Amaranthus spinosus* L. Katili chaurai Amaranthaceae**

Habit& habitat- Terrestrial,, herb growing near wastelands and roadside

3 *Argemone maxicana L.* Satyanashi Papaveraceae

Habit& habitat-Terrestrial, shrub, growing near wastelands, grasslands , s oil alluvial, light yellowish

4 *Barleria prionitis* L. kastira Acanthaceae

Habit& habitat-Terrestrial,shrub, occurs near wastelands, fields, soil clayish

5 *Calotropis gigantia* (L.)R.Br. Safed madar Asclepiadaceae

Habit& habitat- Terrestrial, shrub,common in wastelands and grasslands, soil alluvial

6 *Chenopodium album* L. bathua chenopodiaceae

Habit& habitat- Terrestrial, herb, occurs in waste places

7 *Cissus quadrangularis* L. harjor vitaceae

Habit& habitat- Terrestrial,succulent twiner, shrub, growing as cultivated plant, occurs in hotter part of the country

8 *Curcuma domestica* Roxb. Haldi zingiberaceae

Habit& habitat- Terrestrial, herb,grown as cultivated plant

9 *Datura strumonium* L. dhatura solanaceae

Habit& habitat- Terrestrial, herb, growing near wastelands

10 *Eclipta alba* (L.) Hassk. bhringraj asteraceae

Habit& habitat- Semiaquatic plant,herb, growing near grasslands

11 *Euphorbia hirta* L. Badhi duddhi euphorbiaceae

Habit& habitat- Terrestrial, herb,common in grasslands

12 *Evolvulus nummularis* (L.)L. Safed shankhpuspi convolvulaceae

Habit & habitat- Terrestrial, herb, growing in unused places, gardens

13 *Madhuca indica* J.F. Gmel .mahua Sapotaceae

Habit& habitat- Terrestrial, tree, growing in cultivated gardens

14 *Nicotiana tobaccum* L. tambakoo Solanceae

Habit& habitat- Terrestrial,Herb, growing in grasslands, waste places, waste fields

15 *Papaver somniferum* L. Apheem Papaveraceae

Habit& habitat- Terrestrial, Herb, growing in grasslands, waste places

16 *Rauwolfia serpentine* (L.)Benth.ex.Kurz. Sarpagandha Apocynaceae

Habit& habitat- Terrestrial, shrub, growinggrasslands and wasteland

eISSN 2581-8996
ONLINE
THE INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN MULTIDISCIPLINARY SCIENCES (IJARMS)
A BI-ANNUAL, OPEN ACCESS, PEER REVIEWED (REFEREED) JOURNAL
Vol. 4, Issue 02, July 2021

17 *Solanum nigrum* L.Makoiya Solanaceae

Habit& habitat- Terrestrial, herb, grasslands, waste places, fields

18 *Strychnos* ***nux-vomica*** **L.Kuchla Loganiaceae**

Habit& habitat- Terrestrial. Tree, occurs in waste places, cultivated in gardens

19 *Tinospora cordifolia* (Willd.) Hook. F.& Thomas. Gurach Menispermaceae

Habit& habitat- Terrestrial, climber, herb, growing near waste lands, grasslands

20 Vitex nigundo **L.Nirgund Verbenaceae**

Habit& habitat- Terrestrial, shrub, growing in grasslands, wastefield

Conclusion:

The unscientific disposal of hazardous waste generated during carpet manufacturing processes, containing residual dyes, mordants, synthetic chemicals,microfibrils,aniline dyes, perflorinated chemicals, antimicrobial and moth proofing chemicals are harmful for an flora and fauna of ecosystem, crop plants, river streams, soil profile, growth of plants, causing various diseases like dermatitis,respiratory issues, carcinogenic effects, neurological problems, endocrine problems etc, in the soil, water streams poses great threat to local peoples of bhadohi district.

References

eFloras-2008. Missouri Botanical Garden,St. Louis, M.O.& Harvard Univ. Herbaria, Cambridge, MA, http://www.efloras.org

Mishra, S & S. Mishra,& R.K.Soni , 2019. *On Some Potential Medicinal Plants having natural Diuretic properties.* International Journal of Scientific Research in Science, Engineering and Technology (www.ijsrset.com). Volume 6, Issue 3. ISSN: 2394 – 4099. pp. 479- 486.

Mishra, S. &S. Mishra, 2018a. *Medicinal Plants of Bhadohi district, Uttar Pradesh and a note on their Biodiversity and Conservation*. International Journal of Scientific Research in Science, Engineering and Technology (www.ijsrset.com). Volume 4, Issue 8. ISSN: 2394–4099. Pages: 748–757

Mishra,S,S.Mishra, &R.K.Soni2018b.*Phytomedicodiversity of some Pharmaceuticals Angiosperms having Hepatoprotective Properties*. International Journal of Scientific Research in Science, Engineering and Technology (www.ijsrset.com). Volume 4, Issue 10. ISSN: 2395– 602X. Pages- 617- 623.

Mishra, S, S. Mishra, &R.K.Soni . 2017. *Medicinal Plants Curing Respiratory Diseases From Gyanpur region Uttar Pradesh.* International Journal of Scientific Research in Science, Engineering and Technology (www.ijsrset.com). Volume, Issue. ISSN: 2395 – 6011. Pages- 1031- 1039.

Mishra S.,S. Mishra &S. Tiwari 2016. *Phytomedicodiversity of Some Plants of Gyanpur Region*. Conservation of Medicinal plants Conventional and Modern Approaches, Omega publications New Delhi Pgs 174-180.

Mishra S.,S. Mishra S. &S. Tiwari, 2017. *Role of Indian women in Agriculture and health care*, Public health in India with special reference to women, children and adolescent, 113-114.

Mishra S.S.,Mishra S. &S.Tiwari.2019. *Mahilayo k Jivan Mein Aushidhiya Paudho Ki Upyogita*, Stree Vimarsh Mein Nayapan, Pgs- 129–139.

eISSN 2581-8996
ONLINE
THE INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN MULTIDISCIPLINARY SCIENCES (IJARMS)
A BI-ANNUAL, OPEN ACCESS, PEER REVIEWED (REFEREED) JOURNAL
Vol. 4, Issue 02, July 2021

POWO 2019. Plants of the World Online–Facilitated by the R. Bot. Gar. Kew, www.plants oftheworldonline.org/

The Plant List 2013. Version 1.1.<http://www.theplantlist.org>.

WCSP 2012. World Checklist of Selected Plant Families. Facilitated by the Royal Botanic Gardens, Kew. http://wcsp.science.kew.org/

Table- 1: Quantitave analyses of soil of medicinal plants growing near carpet industries of Bhadohi district, Uttar Pradesh

S.No	Botanical name	Organic carbon	Available phosphorus	potash	copper	iron	manganese	Zinc ppm
1	*Alternanthera sessiles*	0.18%	15 kg/hec	14 kg/hec	2.58 ppm	5.62 ppm	1.95 ppm	2.54
2	*Amaranthus spinosus*	0.65%	14 kg/hec	249 kg/hec	2.69 ppm	5.69 ppm	7.45 ppm	1.65
3	*Argemone maxicana*	0.45%	12 kg/hec	184 kg/hec	2.59 ppm	7.11 ppm	1.92 ppm	1.61
4	*Barleria prionitis*	0.67 %	19 kg/hec	119 kg/hec	1.49 ppm	8.37 ppm	5.09 ppm	1.27
5	*Calotropis gigantea*	0.65 %	15 kg/hec	265 kg/hec	1.57 ppm	11.92 ppm	6.51 ppm	1.37
6	*Chenopodium album*	0.67 %	16 kg/hec	217 kg/hec	2.92 ppm	1.65 ppm	7.11 ppm	2.07
7	*Cissus quadrangularis*	0.65%	14 kg/hec	217 kg/hec	2.05 ppm	2.0 ppm	7.12 ppm	2.06
8	*Curcuma domestica*	0.26 %	14 kg/hec	15 kg/hec	1.59 ppm	5.65 ppm	1.59 ppm	3.55
9	*Datura strumonium*	0.65%	15 kg/hec	217 kg/hec	2.06 ppm	2.05 ppm	7.19 ppm	2.06
10	*Eclipta alba*	0.46%	25 kg/hec	189 kg/hec	3.07 ppm	1.52 ppm	1.16 ppm	1.07
11	*Euphorbia hirta*	0.37%	16 kg/hec	249 kg/hec	1.07 ppm	3.64 ppm	5.28 ppm	3.08

eISSN 2581-8996
ONLINE
THE INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN MULTIDISCIPLINARY SCIENCES (IJARMS)
A BI-ANNUAL, OPEN ACCESS, PEER REVIEWED (REFEREED) JOURNAL
Vol. 4, Issue 02, July 2021

12	*Evolvulus nummularis*	0.44 %	14 kg/hec	185 kg/hec	0.24 ppm	7.19 ppm	1.94 ppm	1.69
13	*Madhuca indica*	0.76 %	11 kg/hec	264 kg/hec	1.76 ppm	9.75 ppm	5.71 ppm	1.22
14	*Nicotiana tobaccum*	0.11 %	19 kg/hec	14 kg/hec	0.25 ppm	6.69 ppm	1.04 ppm	1.05
15	*Papaver somnifera*	0.15 %	15 kg/hec	15 kg/hec	2.57 ppm	5.64 ppm	4.47 ppm	1.62
16	*Rauwolfia serpentina*	0.99 %	22 kg/hec	15 kg/hec	0.52 ppm	8.06 ppm	1.14 ppm	3.54
17	*Solanum nigrum*	0.65 %	14 kg/hec	264 kg/hec	1.54 ppm	11.19 ppm	3.55 ppm	1.24
18	*Strchnos nux-vomica*	0.65 %	14 kg/hec	261 kg/hec	1.87 ppm	10.25 ppm	4.92 ppm	1.34
19	*Tinospora cordifolia*	0.65 %	14 kg/hec	265 kg/hec	1.55 ppm	11.17 ppm	1.79 ppm	2.54
20	*Vitex nigundo*	0.62 %	15 kg/hec	107 kg/hec	1.7 ppm	7.15 ppm	5.9 ppm	1.26