ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 13, Issue, 01, pp.15515-15518, January, 2021

DOI: https://doi.org/10.24941/ijcr.40654.01.2021

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

DISTRIBUTION PATTERN OF SOME ETHNO MEDICINAL PLANTS OF KUNKURI IN JASHPUR DISTRICT

***Sangeeta Yadav and Lata Sharma**

Dr. C.V. Raman University, Kargi Road, Kota, Bilaspur (C.G.), Department of Botany

ARTICLE INFO

Article History:
Received 17th October, 2020
Received in revised form
28th November, 2020
Accepted 19th December, 2020
Published online 30th January, 2021

Key Words:

Kunkuri, Ethno medicinal plants,
Phytosociological studies,
Importance Value Index, Forest structure.

ABSTRACT

Ethnomedicine is study of the traditional medicine based on bioactive compounds in plants and practiced by various ethnic groups, especially those with little access to western medicines, e.g.,indigenous peoples. Phytosociological studies of the region give an idea about the structure and composition of the forest helps. For inter pretation about density dominance and frequency of the flora. The present paper deals with the phytosociological study of Kunkuri area Dist. Jashpur carried out in the year 2018-2020.Monitoring of plant communities was carried out by using quadrate method. The quadrate method includes laying down of a square sample plot of suitable size for detailed analysis of plants. It is actually the sample plot method given by Clements (1977).In this study 40 medicinal plants has been extensively studied during rainy, winter and summer season from 2018 to 2020 with special reference to their phytosociological aspects Viz. Relative Frequency, Relative Density, Relative Dominance as well as Important Value Index (IVI).

Citation: ***Sangeeta Yadav and Lata Sharma.*** "Distribution pattern of some ethno medicinal plants of kunkuri in jashpur district", *International Journal of Current Research*, 13, (01), 15515-15518.

INTRODUCTION

Jashpur District lies in the north-eastern corner of the central Indian State of Chhattisgarh adjoining the border of Jharkhand and Odisha. Jashpur Nagar is the administrative head quarters of the district. It is placed among valleys and surrounded with lush green environment. Jashpur has a rich historical culture. It was a princely state before independence. The density of the population is 132 persons per sq. km. 91% of the population is rural where as 9% belongs to the urban populace. The district is tribal- populated where 62.28%. The district is famous and rich for its tribal inherent culture where 14608 are pahadi korvas, a primitive vulnerable tribal group and 515 are the Birhor tribes. The north- south length of this district is about 85km. Its total area is 6,205 km^2. It is between 22° 17' and 23°,15' North latitude and 83° 30' and 84° 24' East longitude. Geographical area was 670/km^2 It is divided geographically into two parts. The northern hilly belt is called the Upper Ghat. The remaining southern part, is called Nichghat. The upper ghat is an extension plateau covering 1384 km2 which is about 1200 meters above sea level and is covered by a dense forest. Kunkuri is the hottest region in Nichghat during the summer and Pandrapat is the coldest region in upper ghat in the winter. It is a junction,from Jashpur all the people need to cross Patthalgaon first. It is situated between forest.

****Corresponding author*: Sangeeta Yadav and Lata Sharma,**
Dr. C.V. Raman University, Kargi Road, Kota, Bilaspur (C.G.), Department of Botany

Phytosociology is defined as the discipline which concerns itself with the study of vegetation as such, with its floristic composition structure, development and distribution. The key component of vegetation study is phytosociological information serves as prerequisite for understanding the structure and function of the vegetation. Some region of India have been quantitatively explored in terms of Phytosociological investigation (Negi and Nautiyal; 2005, Khare et al; 1985, Singh and Yadav; 2006, Ahmed et.al:, 2009. The plant material for investigation was collected randomly during rainy, winter and summer season from 2018 to 2020.

MATERIALS AND METHODS

Survey Methodology*:* An extensive survey has been conducted to study the area. The plants were identified and recorded for the phytosociological studies which includes Frequency, Density, Abundance and basal cover area of individual species. Quadrat method was used (100 X 100 cm sized) to study the herbs, shrubs and trees medicinal plants of Kunkuri Site during rainy, winter and summer season laying 10 quadrats were randomly at different site. Number of species and number of individual in each quadrats were recorded. These observation were used to calculate Frequency, Density, Relative Density, Abundance, Relative Dominance basal cover and IVI of each species by method obtained. Quantitative structure of community is determined by Frequency, Density,

Map Showing Location of Study Area

Table 1. Phytosociology of Medicinal Plant species during Rainy, Winter and Summer Season from 2018 to 2020

S.No.	Name of species	Frequency (%)	Density	Abundance	Relative Frequency (R.F.)	Relative Density (R.D.)	Relative Dominance (R.M.)	IVI
1	*Abrus precatorius*	19	47.5	46	6.6	4.65	5.340	20.40
2	*Achyranthus aspera*	59	3.32	4.47	3.10	4.840	9.25	18.56
3	*Ageratum conyzoides*	60	1.76	2.92	7.830	3.66	0.028	8.670
4	*Argemon Mexicana*	31	2.41	7.00	4.30	0.58	1.79	4.43
5	*Ageratum conyzoides*	16	0.60	3.00	2.10	0.140	0.440	1.610
6	*Acyalypha indica*	10	1.60	82.11	3.19	10.180	6.32	19.63
7	*Ageratum haustonianum*	11	2.40	1.50	4.167	0.453	0.016	10.67
8	*Achyranthes aspera*	13	0.3	1.55	11.34	2.290	3.58	10.30
9	*Alternanthera triandra*	12	00.48	2.30	5.11	0.909	2.45	15.43
10	*Amaranthus viridis*	25	0.42	12.00	1.21	0.380	1.89	10.57
11	*Boerhaavia diffusa*	22	0.6	1.40	4.23	1.62	2.67	3.56
12	*Bambusa arundinacea*	40	50.00	83.32	2.13	0.100	0.234	12.43
13	*Biophytum sensitivum*	10	1.60	3.40	3.14	3.12	0.557	11.34
14	*Boerhaavia diffusa*	10	1.60	2.10	2.56	0.456	3.755	10.32
15	*Cassia tora*	60	3.10	4.00	3.22	2.134	0.286	7.98
16	*Commenlina benghalensis*	45	0.4	1.00	1.21	3.45	3.87	30.12
17	*Chenopodium album*	15	30.40	2.12	2.78	1.20	2.19	12.34
18	*Calotropis procera*	25	8.720	3.40	3.20	0.78	0.016	4.67
19	*Cynodon dactylon*	92	30.40	16.37	1.45	35.810	50.810	99.53
20	*Datura stramonium*	67	0.3	3.56	3.21	27.118	40.70	81.86
21	*Desmodium gyrans*	18	1.50	3.3	3.89	0.100	0.65	13.56
22	*Euphorbia hyperifolia*	34	4.4	4.00	1.203	2.290	0.127	4.61
23	*Eclipta alba*	45	0.3	2.12	3.10	1.56	1.04	14.85
24	*Euphorbia geniculate*	40	0.6	3.10	6.2	0.36	0.051	7.98
25	*Euphorbia hirta*	90	28.730	5.14	8.36	0.380	0.041	1.840
26	*Oxalis corniculata*	32	1.34	3.22	5.10	5.121	2.56	1.94
27	*Ocimum sanctum*	80	3.10	43	2.06	1.21	1.67	5.89
28	*Parthenium hysterophorus*	70	2.30	2.10	1.030	4.40	2.458	7.90
29	*Paspalumdi distichum*	22	0.2	3.78	3.133	1.37	1.43	0.56
30	*Phyllanthus eracea*	20	48.5	4.23	4.167	0.321	0.931	6.320
31	*Sida acuta*	30	2.40	2.21	4.32	2.210	1.59	6.13
32	*Synedrellan odiflora*	16	1.10	1.24	12.99	1.65	0.54	0.61
33	*Scoparia dulcis*	14	0.3	3.2	13.68	3.24	2.62	0.800
34	*Tagetes erecta*	35	1.20	4.2	8.33	2.18	1.890	1.95
35	*Tagetes patula*	19	2.1	1.21	12.69	0.117	3.675	9.16
36	*Vernonia anthelmintica*	20	0.3	2.12	7.32	1.94	0.323	0.51
37	*Vernonia amygdalina*	17	1.3	1.24	0.28	0.562	0.452	0.18
38	*Vernonia cinera*	75	35.2	2.31	3.60	9.848	1.42	28.89
39	*Zinnia elegans*	40	0.6	30	0.68	0.58	3.29	2.12
40	*Zinnia angustifolia*	15	2.40	16.365	15.66	0.130	0.341	3.24

Abundance and Important Value Index gives a clear picture of community structure in quantitative terms (Shanmughavel, 1994).

The Formulae used for analyzing the data are as follows –

$$\text{Density} = \frac{\text{Number of individuals species A}}{\text{Area sample}}$$

$$\text{Relative Density} = \frac{\text{Density of species A}}{\text{Total density of all species}} \times 100$$

$$\text{Dominance} = \frac{\text{Total cover of basal area of species}}{\text{Area sampled}}$$

$$\text{Relative Dominance} = \frac{\text{Dominance of species A}}{\text{Total dominance of all species}} \times 100$$

$$\text{Frequency} = \frac{\text{No. of plots in which species A occurs}}{\text{Total number of plots sampled}}$$

$$\text{Relative Frequency} = \frac{\text{Frequency value for species}}{\text{Total frequency values of all species}} \times 100$$

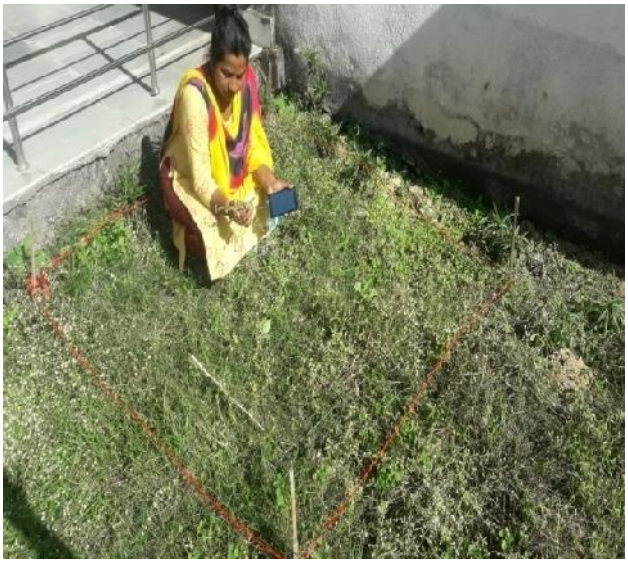
$$\text{Abundance/ Quadrate} = \frac{\text{Total no. of species A occur in all quadrates}}{\text{Total no. of quadrate in which species A occur}}$$

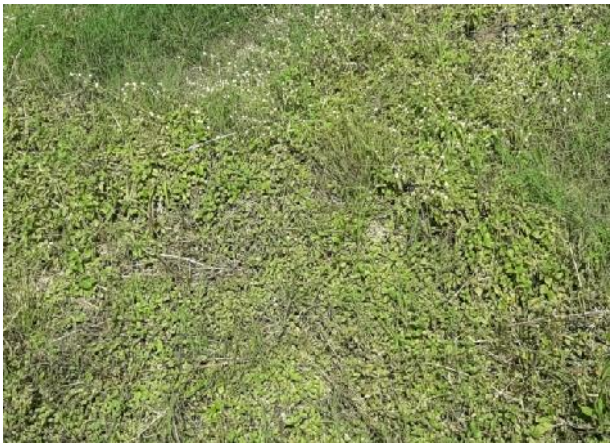
$$\text{Relative Frequency} = \frac{\text{Total no. of species A occur in all quadrates}}{\text{Total no. of quadrate in which species A occur}}$$

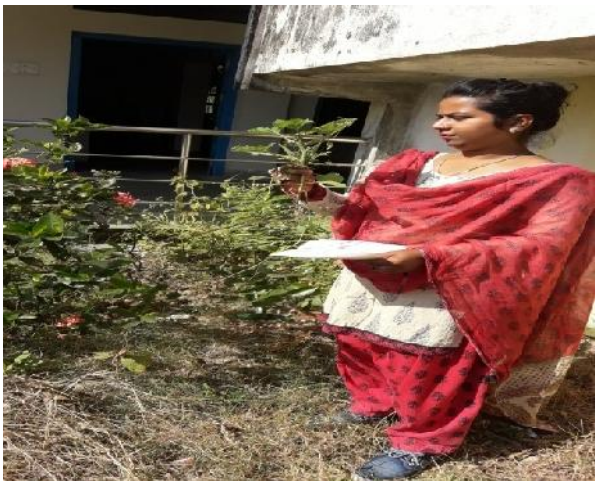
$$\text{Important Value Index} = \frac{\text{Relative Density} + \text{Relative Dominance} + \text{Relative Frequency}}{3}$$

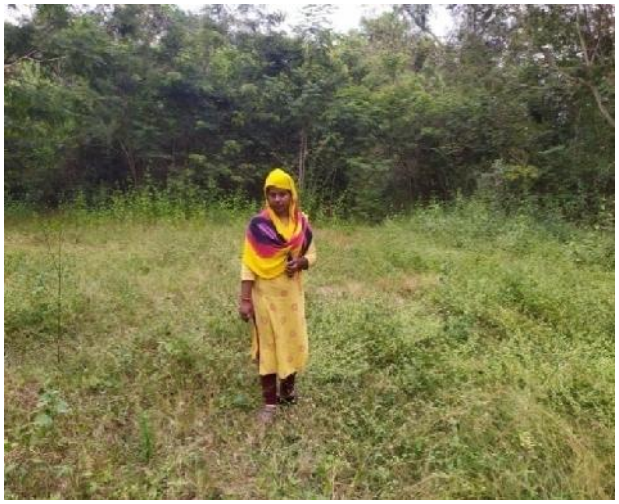
Identification of the study area done with the help of standard floras such as Hooker (1973), Roy G.P.B.K.Shukla $ Bhaskar Datta (1992).

Photo plate – Kunkuri Site









Observation: In the survey conducted during rainy, winter and summer season from 2018 to 2020 in Kunkuri site of Jashpur district total 40 medicinal plants were observed whose Phytosociology is tabulated in the table 1 represented in photograph.

RESULT AND DISCUSSION

The density measurements may over emphasize the importance of a species that consist of how many individual are present in unit area. The frequency measurements emphasize the importance of distribution of individuals belonging to a particular species in the vegetation sampled. Therefore, species diversity is the best measures of community structure. Dominant families recorded in the study area according to descending order Fabaceae, Euphorbiaceae, Asteraceae, Rubiaceae, Malvaceae, Apocynaceae, Cucurbitaceae and Lamiaceae. The list of total number of different plant species (herbs, shrubs and trees) recorded during field survey and their analysis values as per formulae are depicted in Table 1. The percentage of medicinal plants found in the study area is about 25%. It is clear from the above observations that out of 40 selected medicinal plants *Cynodon dactylon, Uforbia hirta*, maximum value of RF, RD, RM, IVI followed by *Datura stramonium, Vernonia cinera, Abrus precatorius plant Scoparia dulcis*, has minimum value of RF, RD, RM, IVI.

Conclusion: The study area of Kunkuri, Jashpur district show remarkable presence of medicinal plants (25%). Biological communities are dependent on the environment condition and resources of its location. It may change if there is any change in the environment. A number of variable like temperature, humidity, rainfall, soils characteristic, topography etc. are responsible for the composition of biotic communities is reflected by a change in the distribution pattern Density, Diversity, Frequency, Dominance and Abundance of natural species of flora and fauna existing in the ecosystem (Anonymous 1987, 1998).

Acknowledgements: We are thankful to the following individuals Dr. Ignace Kindo for their advice in organizing and analyzing the data. We are grateful to administrative officials at zonal and district levels in the study area.

REFERENCES

Annonymous. 1987. U.S.FDA. Environmental Assessment Technical Assistance Hand book Washington, D.C:U.S. Food and Drug Administration.

Anonymous.1998. Central pollution Control Board, Vol-I, Ministry of Environmental and Forest, Govt.of India, New Delhi.

Ahmed S.A; Kadam J.A. Patil S.S. and Baig M.M. V. 2009. Biological efficiency and nutritional contents of Pleurotus Florida Singer cultivated on different agro – wastes. Nature and Science 7 CU; 44-48

Clements F.E.1977. Research Methods in Ecology (reprinted Edition), Arno press. Ltd. US of America.

Hooker J.D. 1973. Flora of British India, Vol.I-VII, Bisher Singh Mahendra pal Singh, New Delhi.

Khare P.K. Yadav V.K. and Mishra G.P., 1985. Phytosociological structure of some forest communities in Central India J.Trop. For.1 (4): 321-326.

Negi C.S.and Nautiyal S.,2005. Phytosociological Studies of A Traditional reserve Forest Thal Ke Dhar, Pithoragarh, Central Himalaya, India, Indian forestry: 519-534.

Roy G.P., B.K. Shukla & Bhaskar Datta.1992. Flora of Madhya Pradesh, Ashish Publishing House, Panjabi bagh, New Delhi.

Shanmughavel ap.1994. Phytosociological Studies of Dimbam Hill, Satyamongalum Forest Division, Tamilnadu. Van Vigyan Journal of the Society of Indian Foresters Vol 32, No 4, October-December, Year.

Singh J.S., Singh S.P. and Gupta S.R.,2006. Ecology, Environmental and Resource Conservation, Anamaya Publishers, New Delhi, 668.

Vigyan Journal of The Society of Indian Foresters Vol 32, No 4, October-December, Year.

****