

Correlation Coefficient between Different Methods of Species Diversity of Medicinal Trees in three Forests of Shabdol District of Madhya Pradesh, India

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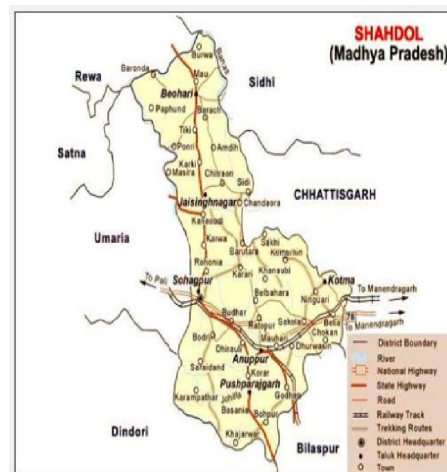
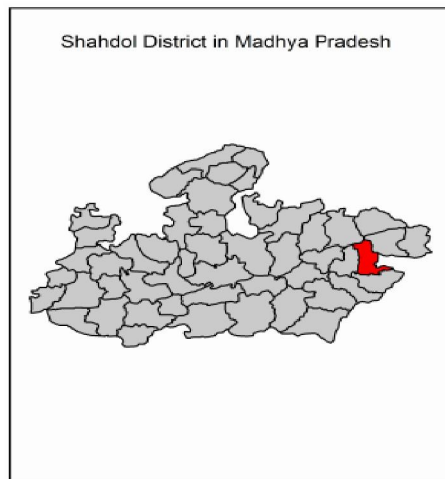
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Abstract: *The present study deals with the Correlation coefficient between different methods of species diversity of medicinal trees in three forests of Shabdol District viz Jaitpur, Jaisinghnagar and Beohari of Madhya Pradesh, India. In the study we have studied the medicinal trees of all forests of Shabdol. Covering the vast variety of medicinal plants, the author has determined the correlation coefficient, species diversity and other aspects as well.*

Keywords: Correlation coefficient, species diversity, medicinal plants, medicinal trees

I. INTRODUCTION



Map 1: Location map of Madhya Pradesh and study area of Shabdol

This work is result of carefully planned field trip of the study sites. Special efforts were made to visit the places rich in floristic wealth. The tribal and rural people utilize a number of medicinal plant, hence attention were paid to trace flora from these sites.

Biodiversity resources such as medicinal and other plants are the foundation for progress in strengthening food, health and livelihood security. The diversity of these resources also act as feedback for modern biotechnology and Industry. Effectively used, it can become a major instrument for economic prosperity of the state as well as communities (Biodiversity Board, Govt. of M.P.)



A large number of studies have been carried out all over the world on various aspects of biodiversity. Pollock *et al.* (1998) and Townsend, *et al.* (1997a) conducted Plant species richness in riparian wetlands and The intermediate disturbance hypothesis, refugia, and biodiversity in streams respectively.

Lawesson, *et al.* (1998) investigated the floristic richness of different size, age and disturbances and have analyzed the relationship between species richness and forest area in Danish Beech forest.

Materials And Methods:

A planned field work of the study sites were done during July 2014 to June 2017. Three places of the each villages were touched and the entire region was covered. The medicinal plants were collected in their natural habitat. Emphasis were given to collect the herbs in their flowering and fruiting stage.

Laboratory work includes the calculation of Phytosociological data processing, study of morphological features, dissection, identification, matching, mounting and preservation of medicinal plants. All the above processes were completed in laboratories of Department of Botany Pt. S.N.S. Govt. P.G. College Shahdol (M.P.) India. After the laboratory work, herbariums of the specimens were prepared.

The specimens were dissected and identified with the help of floristic literatures (Verma *et al.* 1985; Oommachan and Shrivastena, 1996; Mudgal *et al.*, 1997). Flora of British (Hooker, 1872-1897) and Flora of Upper Gangetic Plain (Duthie, 1960) were also referred for the cross verification. Different specimens were studied more critically and thoroughly. The help of knowledgeable taxonomists of SFRI, Jabalpur and BSI, Central Circle, Allahabad were sought to verify the identification. The specimens were also compared with the available herbarium of the above institute.

Results:

Table : Correlation coefficient between different methods of species diversity of medicinal trees in three forests of Shahdol District.

Method	Simpson Index	Shannon and Wieners Index	Mc Intosh-I Index	Mc Intosh-II Index
Simpson Index	1	0.934**	0.993**	0.931**
	2	0.828*	0.982**	0.997**
	3	0.866*	0.994**	0.899*
Shannon and Wieners Index		1	0.927**	0.763
		2	0.880*	0.795
		3	0.843*	0.567
Mc Intosh-I Index			1	0.994**
			2	0.967**
			3	0.910**

1. Jaitpur, 2. Jaisinghnagar and 3. Beohari

** and *Significant at 5% and 1%, respectively.

II. DISCUSSION AND CONCLUSION

Though the study is restricted to the values of Correlation coefficient of medicinal trees diversity of Shahdol district its finding are to a great extent relevant to the herbal remedies among the natives of the neighbouring areas. Hence, this study will be a contribution to the ethnomedicinal of the region as a whole. The information presented in Study site reveals that the highest value of the of Correlation coefficient between Simpson Index and others is 0.997 . And it is the value of Correlation coefficient between Simpson Index and Mc Intosh-II of Jaisinghnagar forest.

The highest value of Correlation coefficient between Shannon and Wieners index and others is 0.927 . And it is the value of Correlation coefficient between Shannon and Wieners index and Mc Intosh-I of Jaitpur forest.



The highest value of Correlation coefficient between Mc Intosh-I and others is 0.994 . And it is the value of Correlation coefficient between Mc Intosh-I and Mc Intosh-II of Jaitpur forest.

Overall, the highest value of Correlation coefficient on the whole table is 0.997 and is between Simpson Index and Mc Intosh-II of Jaisinghnagar forest. But the least numerical value of Correlation coefficient on the whole table is 0.567 and is between Shannon and Wieners index and Mc Intosh-II of the Beohari forest.

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