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Diversity of aquatic angiosperms in some chaurs of Madhepura district

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Abstract : The present study reveals of three water reservoir of Madhepura district that *Hydrilla, Elodia, Pistia* and *Eichhornia* are the much denser species having 100% frequency. It was found that *Eichhornia* and *Pistia* have highest density and abundance followed by *Hydrilla* and *Elodea*.

Keywords: **quadrat, density, frequency, abundance**

INTRODUCTION

Madhepura district is situated in between 25p 31' - 26p 34' latitude and 86p 19' - 87p 8'longitude in north eastern part of Bihar state and comprises two sub divisions Madhepura and Udakishunganj. It is encircled by Supaul in north, by river Ganga in south, by Purnea in east and by Saharsa in west.

The district has large number of water logged areas locally known as chaurs. Some of the larger chaurs cover 40 to 60 acres area in which water remain logged throughout the year.

A large number of aquatic angiosperms grow luxuriantly in these chaurs. The commonly present angiospermic flora of these chaurs are *Eichhornia, Pistia, Limnia, Wolffia, Elodia, Hydrilla, Vallisnaria, Ttrapa, Sagittaria.*

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MATERIALS & METHODS

The vegetarian survey in 3 chaurs of Madhepura district was conducted during the month of august using nested quadrate method. Five quadrats were laid randomly at each spot. The data obtained was tabulated and analyzed for frequency, density and abundance.

Frequency

Frequency in the degree of dispersion of individual species in an area expressed in terms of percentage occurrence. It is calculated by the following formulae :-

$$Frequency = \frac{no.\ of\ quadrate\ in\ which\ species\ occur}{total\ no.\ of\ quadrates\ studied} \times 100$$

Reunikar in 1934 proposed five frequency classes depending upon frequency value

Frequency %	Frequency class
0-20	A
21-40	B
41-60	C
61-80	D
81-100	E

Density

Density represents the numerical strength of a species in the community.

$$Density = \frac{total\ no\ of\ individuals\ of\ the\ species\ in\ all\ sampling\ units}{total\ no\ of\ sampling\ units\ studied}$$

Abundance

$$Abundance = \frac{total\ no\ of\ individuals\ of\ the\ species\ in\ all\ sampling\ units}{total\ no\ of\ sampling\ units\ studied}$$

RESULT & DISCUSSION

The frequency of *Eichhornia* and *Pistia* was 100% followed *Limnia* with 80% frequency.

SI. NO.	NAME OF SPECIES	FREQUENCY	CLASS	DENSITY	ABUNDANCE
1	*Eichhornia*	100%	E	32.2	27
2	*Pistia*	100%	E	32	26
3	*Vallisnaria*	62%	D	9	10
4	*Trapa*	40%	B	4	3.5
5	*Elodea*	40%	B	4.2	3.6
6	*Sagittaria*	40%	B	4	3.5
7	*Hydrilla*	60%	C	10	10.5
8	*Lemna*	80%	D	6.4	5.8
9	*Wolffia*	62%	D	10	9
10	*Scirpus*	20%	A	2.5	2
11	*Cyperus*	40%	B	4.5	5
12	*Nymphea*	60%	C	8	8.5

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