

## Phytosociological analysis of grassland ecosystem of district Balrampur (U.P.)

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### SUMMARY

Phytosociological investigation of three study sites showed that 32 species, 29 & 25 species were associated with *Bambus bamboosa* respectively in overgrazed grassland ecosystem of Balrampur, vicinity of Rapti and Kuwana forest of Balrampur. In three the study sites highest density and A/F ratio was of *Cynodon dactylon* because it was distributed frequently. Among all reported species, density of 25% species was more than 1. However, A/F ratio varied from 0.023 – 0.167 at Balrampur grassland (Site I). At vicinity of river Rapti (Site II) and overgrazed areas villages of Balrampur (Site III), A/F ratio ranges between 0.15 – 0.105. It indicates that was the least at the Site I, but it was maximum at the Site II & III. IVI of different species at Balrampur District grassland ranges from 0.955 – 39.79 whereas in river Rapti vicinity it ranges from 2.43 to 29.43 and overgrazed areas of village Balrampur are 2.25 to 24.32. Highest IVI was exhibited by *Cyperus rotundus* in the all the study sites and lowest by *Asparagus racemosus* and *Evolvulus alsinoides* in Kuwana forest, overgrazed grassland of Balrampur and the vicinity of river Rapti respectively.

Key words : Phytosociology, Grassland, Ecosystem

**B***Bambus bamboosa* is a tall woody grass found throughout India. Particularly along river valleys and the moist situations. However this plant is most common in India but at present it is depleting in Balrampur. Bamboosa is most frequent and abundant taxon of the India growing mostly on the hilly regions of India. It is very much common economically important plant growing on the foot hills of Shivalik range. Here certain plant species are also associated and affects the Phytosociological parameters by different ways. The leaf buds administered of thread worms. The leaf juice is given with aromatics in vomiting of blood. Adecoction of the leaves is used to induce lochia after child birth. The young shoots contain hydrocyanic and benzoic acids, they are stomachic and stimulant; they are used in lung diseases. Adecoction of the joints of bamboo stem is a useful emmenagogue; it is also used as an abortifacient. Banslochan, a silicic crystalline secretion found in the clums of the female plant is a febrifuge expectorant, tonic, aphrodisiac, demulcent and pectoral. It is given in hectic fever, phthisis, asthma, paralysis complaints etc. The wood of this plant is used for the manufacture of soft toys, pulp paper and ammunition boxes. *Bambus bamboosa* is gradually decreasing in number along with its associates due to certain biotic and abiotic factors, which do not allow them to establish and reproduce naturally.

Phytosociological analysis of any vegetation forms an important part of ecological study as it provides a clear understanding of the community structure which is necessary for adequate characterization of the present community. Phytosociological methods are useful in experimental studies of communities for comparing one community with other for showing changes in a community from year to year and in fact, providing information needed about community structure and the role performed to

various species. The ecological researches for an area must include the study of communities as a whole and also the study of each individual species which collectively form that community.

The present investigation was carried out with the object to study the plant communities associated with and depleting plant species namely *Bambus bamboosa* found wild on the overgrazed village of Balrampur; to understand distribution and dominance of this particular species in all protected as well as distributed habitat.

### MATERIALS AND METHODS

The study was carried out at three sites in Balrampur namely overgrazed areas of villages, vicinity of river Rapti which is a protected forest and the Kuwana near the college campus which is a highly distributed forest. For studying Phytosociology of the vegetation. 5m. long line transect were laid randomly in different seasons throughout a year. Frequency, abundance, density and basal area of all the plant species in the community were determined. Relative dominance, relative density and relative frequency were calculated to assess Important value Index (IVI) of each species. Community coefficient was calculated to find out the coefficient of similarity<sup>4</sup>.

### RESULTS AND DISCUSSION

The data on community structure in relation to composition, density, abundance, frequency and IVI of the species in three localities are presented in tables 1,2 and 3. A perusal of data in these tables show that plant species associated with *Bambus bamboosa* in the villages of Balrampur (32) was little higher than vicinity of river Rapti (29) and in Balrampur city (25).

In all the localities *Bambus bamboosa* was found as the sentinel on the overgrazed forest of villages Balrampur against the background of sky. In the vicinity of river Rapti

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