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A Preliminary Survey of Local Angiospermic Flora in Shahjahanpur, UP, India

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District Shahjahanpur occupies the southest corner of Rohilkhand division and is located at 27.88°N 79.91°E. It has an average elevation of 194 metres (600 feet). It is situated at the junction of two rivers, namely Khannaut and Garra. The climate of district Shahjahanpur is generally defined to be tropical monsoon type. District Shahjahanpur is subdivide into three zones and samples of different variety of angiospermic plants were collected and about 30 plant spp. were identified, belonging to 18 families; collected plants were classified into two angiospermic categories dicot and monocot; among them dicot plant were found more likely in comparison to the monocots, and the family Euphorbiaceae found Dominating among the studied angiosperm families. In this survey we have observed medicinal plants in excess along with great variation in the flora at Shahjahanpur.

Keywords : Shahjahanpur, Flora, Angiosperm, Polypetalae, Khannaut and Garra.

INTRODUCTION

District Shahjahanpur occupies the southest corner of Rohilkhand division and is located at 27.88°N 79.91°E. It has an average elevation of 194 metres (600 feet) and is between the parallels of North latitude and East longitude. It is situated between two rivers Garrah & Khannaut. The climate of District Shahjahanpur is generally defined to be tropical monsoon type. The cursory and annual vegetation of this area shows the characteristic emergence of summer, rainy & winter season.

District Shahjahanpur has the following three main season: Winter season (November to mid march), summer season (mid March to June), and monsoon season (July to September). Major crops of the District Shahjahanpur are Wheat, Gram, Mallets, Potatoes and Sugarcane. Much of the area of Shahjahanpur is covered by a deep layer of soil spread by the slow moving rivers i.e. Fertile alluvial soil, Sandy, Clayey loam soil are mostly found.

The proposed study was done in Shahjahanpur with the objectives such as to identify and collect the floristic elements of the area and to study the Plant species for knowing the status of individual plant species in the study area.

MATERIAL AND METHODS

I. District Shahjahanpur is subdivide into three zones on the basis of soil type *i.e.* Fertile alluvial soil, Sandy, Clayey loam soil. (Table-1)

II. Various plant samples were collected from different zones of Shahjahanpur from time to time (March 2015 to December 2015); as it was the flowering and fruiting period to facilitate the process of identification and was done according to Bentham and Hooker's system of classification (1872 -1897).

III. Taxonomic characteristics used to distinguish one plant from another include flower color, vegetative characteristics, fruit, and fall color.

Table 1: showing the no of plants collected and the no of species

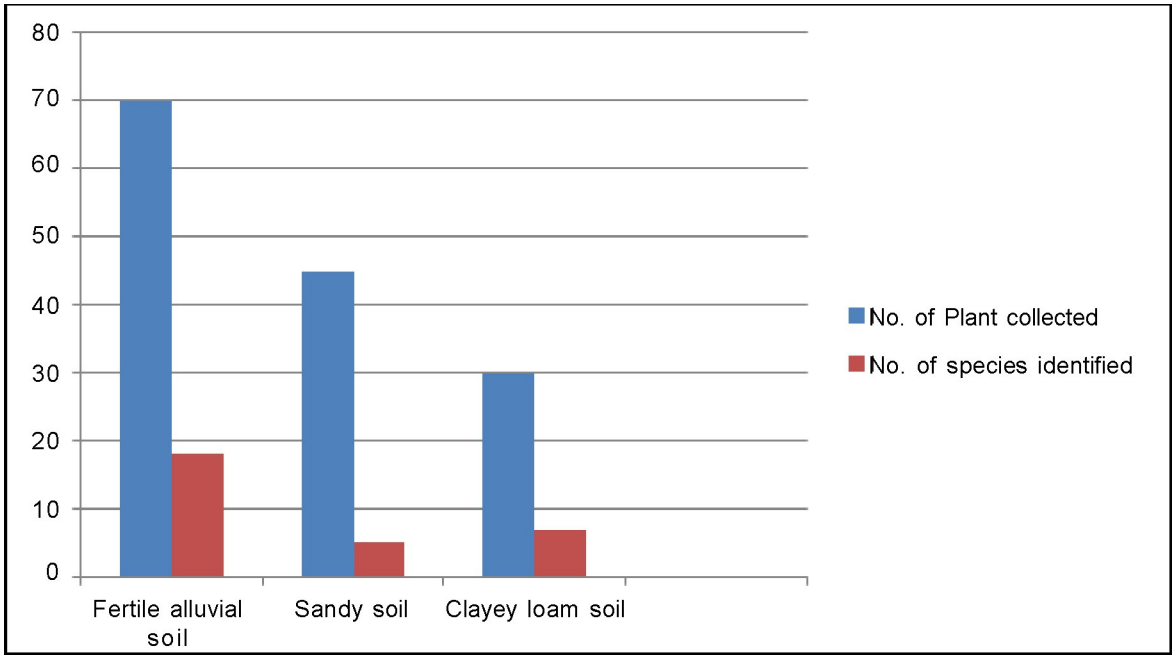
S.No.	Soil type	No. of Plant collected	No. of species identified
1	Fertile alluvial soil	70	18
2	Sandy soil	45	05
3	Clayey loam soil	30	07

RESULTS AND DISCUSSION

The present research work is based on the indigenous knowledge of most commonly used plant. Each plant species is provided with its botanical name, common name, family and uses. By examining the plant material samples collected from the four side locations of District Shahjahanpur. The species under observation are described below: (table 2).

TABLE 2: SPECIES IDENTIFIED AND THEIR CHARACTERISTICS

SN	BOTANICAL NAME	COMMON NAME	FAMILY	SPECIAL CHARACTER	ECONOMIC IMPORTANCE
1	*Ranunculus scleratus*	Jaldhania	Ranunculaceae	Lamina much dissected	leaves are used as vesicant
2	*Argemone mexicana*	Peeli kataili	Papaveraceae	Calyx highly caduceus	The seeds oil is illuminant and lubricant
3	*Fumaria parviflora*	Indian fumitory	Papaveraceae	Flowers are dull white with purple tips	As ayuevedic medicine
4	*Capsella bursa pastoris*	Shepherd's purse	Brassicaceae	Triangular flat fruits which are purse like	Fumaric acid has been isolated form this plant
5	*Brassica compestris*	Sarson	Brassicaceae	Corolla cruciform	seed oil used for cooking
6	*Stellaria media*	Chickweed	Caryophyllaceae	Obdiplostaminous stamenous	It is edible and nutritious
7	*Hibiscus rosa sinensis*	Gurhal	Malvaceae	Epicalyx is present	A dye is obtained
8	*Citrus medica*	Nimbu	Rutaceae	Polyadelphous stamen	The fruit juice is rich in Vitamin C
9	*Murraya koenigii*	Meethi neem	Rutaceae	Seed are poisonous, obdiplostamenous	The leaves used as an ayurvedic medicine
10	*Rosa santana*	Rose	Rosaceae	multiple superior ovary	used for commercial perfumery
11	*Mussaenda luteola*	Ashantiblood	Rubiaceae	Stipules interpetiolar	Grown as ornamental
12	*Gnaphalium palustre*	Western marsh and weed	Asteraceae	wooly hairs are present	used in intensive back pain
13	*Vernonia amygdalina*	Ironweed	Asteraceae	bark is rough	Anti-oxidant benefits
14	*Sonchus brachyotes*	Sow thistle	Asteraceae	Calyx reduced to hairy pappus	As medicine
15	*Eclipta prostrata*	Bhangra	Asteraceae	Heterogamous flower	used in spleen enlargement
16	*Parthenium hysterophorus*	Gagar ghans	Asteraceae	Trichomes are present	As medicine
17	*Ageratum conyzoides*	Chick weed	Asteraceae	Calyx reduced to hairy pappus.	used in fever , headache
18	*Catharanthus roseus*	Sadabahar	Apocynaceae	Latex present	grown as an ornamental
19	*Solanum nigrum*	Mokoi	Solanaceae	Placenta are highly swollen	Used in chronic enlargement of liver
20	*Mazus pumilus*	Japanese mazus	Scrophulariaceae	Corolla personate	An infusion of plants is given as tonic
21	*Ocimum sanctum*	Tulsi	Lamiaceae	Gynobasic style	used in chronic diarrhoea and dysentery
22	*Achyranthes asper*	Lat jeera	Amarenthaceae	Spinous tips	As medicine
23	*Chenopodium album*	Bathua	Amarenthaceae	Flower usually with one whorl of perianth	used as vegetable and fodder
24	*Ricinus communis*	Arandi	Euphorbiaceae	Alternate stipulate leaves with latex	seeds are the source of castor oil
25	*Euphorbia pulcherrima*	Laal patta	Euphorbiaceae	Calyx and corolla both are absent	Grown as an ornamental
26	*Euphorbia hirta*	Asthma weed	Euphorbiaceae	Calyx and corolla both are absent	used in the treatment of cancer
27	*Euphorbia thymifolia*	Choti dudhi	Euphorbiaceae	Latex present	Grown as an ornamental
28	*Asphodelus tenuifolius*	pyaji	Liliaceae	Flowers trimerous	Oil is used in paints, varnishes and soaps
29	*Triticum aestivum*	Wheat	poaceae	Ligule present	Cultivated as a food crop
30	*Musa paradisiaca*	Banana	Musaceae	Fibrous adventitious root	Fruits are edible



Graph1: showing the no. of plants collected and the no. of species

All sample plants were classified and listed as per the classification of Bentham and Hooker (1872) at single glances; and recorded the physical attributes of authenticity of the plants. For the collection of various plant species we searched various places in different and collected different variety of Dicot and Monocot plants. During our survey to all places we found that the dicot plants are more common in comparison to the monocots. Moreover in angiopermic plants medicinal plants are found majorily in District Shahjahanpur. In Dicot the plants of Polypetalae, Gamopetalae and Monochlamydeae were observed but plants of Polypetalae were found more in numbers in comparision to other subclasses. The polypetalae plants were found to the family of Ranunculaceae, Papaveraceae, Brassicaceae, Caryophyllaceae, Malvaceae, Rutaceae, Rosaceae etc.

The commonly found plants have the applications *viz.* the seeds of family Papaveraceae of Polypetalae were commonly used to extract oil which is further used as illuminant and lubricants by various chemical processes. These oils are toxic in nature and hence, they are harmful for human beings. The members of family Rutaceae are found to be rich in vitamin C. Members of Brassicaceae are used for vegetable creeping. We have also collected some more plants of subclass Gamopetalae which were associated to the families Rubiaceae, Asteraceae, Apocynaceae, Solanaceae, Scrophulariaceae and Lamiaceae etc. The members of family Asteraceae of gamopetalae have charecterstic wooly hairs present on their outermost covering where calyx reduces to hairy pappus. We have also found the members of subclass-Monochlamydeae *i.e.* Amaranthaceae and Euphorbiaceae etc. The members of the family Euphorbiaceae are found in majority. The characteristic property of the subclass-Monochlamydeae is that their calyx and corolla both are absent. Plant species of genus *Euphorbia* were observed producing latex.

Similar studies were done by Uniyal *et al.,* (2002) and Choudhary and Wadhwa (1984) who also surveyed the different Himalayan regions and identified the valuable plants. During the course of study, 30 plant species were studied and collected from the different zones of the Shahjahanpur Out of the 30 plant species, 18 families were found prominent. In this current survey we have observed medicinal plants in excess in the area. Present investigation shown that the family Euphorbiaceae that includes *Ricinus communis, Euphorbia pulcherrima, Euphorbia hirta* and *Euphorbia thymifolia* found Dominating among the studied angiosperm families.

A great variation in the angiospermic plant spp. also observed at Shahjahanpur. The survey was in actual an attempt to setup a base for the further intensive and focused studies for the floral diversity as well as the recognition of the useful plants for the human kind by any mean. It was an approach to make survive the recognition and existence of natural flora. This investigation will be helpful to authenticate the status and usefulness. Various aspects of the ecological concern such as harvesting practices, status, commercial uses, population decline and density of the plant shown the fragility and suggests to take proper preventing measures to not to species fall into the extinction category from wild category in the near future.

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