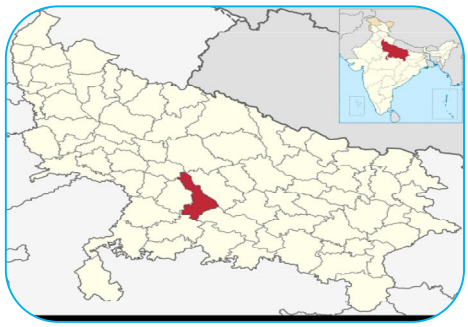
REVIEW OF RESEARCH
ISSN: 2249-894X
IMPACT FACTOR : 5.7631(UIF)
VOLUME - 11 | ISSUE - 4 | JANUARY - 2022

CONSEQUENCE OF PHYTOGEOGRAPHICAL STUDY OF KANPUR DISTRICT

Dr. Nupur Budhodhia
Assistant Professor, Geography Department,
D.A.V. College, Kanpur.

ABSTRACT:



The totality of the land as opposed to the centers of flora, fauna and phytogeography around the land. Soil supports plants and micro-organisms and correlates with the quality of surface and ground water and airborne spores. It is true that man has a strong connection with the land and soil of his birth. It is clear that the person loves and relates to everything around his birthplace. Perhaps the soil symbolizes the whole area. Soil plays an important role in terms of prosperity, productivity and utility. Agriculture and forestry have a close and important relationship with soil. A particular set of crops and forests require a particular type of soil. Obviously, agriculture-based and forestry resource-oriented industries; Handicrafts and small-scale enterprises create interstices around soil features. Edaphic elements related to earth and soil science are of great value in the geography of a region. The natural properties of the soil are no longer maintained. There is heavy pollution stress and simultaneous changes in soils, resulting in variations in the local geology.

KEY WORDS: *Soil supports plants and micro-organisms, productivity and utility.*

INTRODUCTION:

The natural medium for the growth of land plants is the unorganized material found on the earth's surface. The material naturally occupying the earth's surface, which is influenced by weather conditions including parent material, temperature and humidity, as well as action by micro and macro-organisms over a period of time, is called soil, which may vary. from parent rocks in many physical and chemical properties. Soil is a component of soil. Among the various factors affecting soil productivity, soil fertility status is perhaps the most important limiting factor responsible for crop production. A fertile soil is one that is capable of providing plant nutrients in adequate and available form to growing plants.

Naturally, Kanpur has its share of agricultural land and forest apart from industries. The quality of soil and its usefulness are washed away by industrial pollution on the one hand and pesticides and insecticides on the other. But the fact remains that soil quality and nature are of paramount importance for agriculture, home gardening parks, roadside trees and forest development. Due to intensive farming and adoption of high-yielding varieties, the nutrient status of the soil is rapidly depleted and the future of crops can be adversely affected. A soil test helps identify any nutrient deficiencies. The purpose of soil testing is to assess the nutrient status and know the optimal requirement of manure and fertilizer

for the crop. Proper dose of fertilizer will increase production and utilization of fertilizer economically. 'Government of India is also of the opinion that the use of fertilizers should be increased to increase the production of food grains, and efforts should be made to provide proper balanced fertilizers to the farmers of the country based on soil testing. Increasing food grain production at a faster rate.

As there is a huge shortage of fertilizers in the country, judicious use of fertilizers is essential, which is not possible without soil testing. Soil testing is one of the most important factors for increasing agricultural production in the country at low cost. In view of the limited availability, efficient use of fertilizers is essential and the cost of agricultural production must be reduced. So, all the sources of manure losses have to be identified and better utilization of manure is possible only through soil testing. Understanding the soil crop relationship is essential so that proper uptake of nutrients by growing crops is possible. Apart from foliar feeding, fertilizer is mixed directly into the soil to feed the crop, it is necessary to know the exact fertility status of the soil, which is the objective of soil testing. Soil fertility is a constantly changing aspect due to nutrient uptake by crops. The nutrients that are removed are given by fertilizers and manures, if they are given without soil testing, they are not necessarily according to the needs of the crop, so we can say that the crop cannot produce the lowest cost.

PHYSIOGRAPHY AND SOILS OF KANPUR:

Since landforms are often evolutionary and have great importance in shaping the human environment, Phytography is the study of these landforms and the processes and factors responsible for shaping them. is Uses and their interrelationships. Factors involved in physicochemical processes are more or less related to factors of soil formation and pedogenic development of soil. Soil, being a three-dimensional natural body, cannot be studied by surface features alone. But, however, the inter-relationships between physiography and land use/land cover provide sufficient classes for soil scape delineation. Physiological interpretation was carried out using IRS 1C geocoded LISS 3 imagery and Sol toposheet at 1:50,000 scale and based on pre-field interpretation and semi-detailed survey. The following major physiographic landforms are delineated,

- Ganga Alluvial Plain (GAP)
- Yamuna Cheek Pain (YAP)
- Ravines (RA)
- River (RI)

These units are further subdivided based on differences in topography (slope), erosion, natural vegetation, drainage etc. The soils under different mapping simulations are described in the table below.

Table 1.1 Photographical Units

PHYTOGRAPHY	UNIT
Eanpm Type -1 Recent Alluvium of Ganga Alluvium Plant	**GapT1**
Kanpur Type2: Lowland of Ganga Alluvium Plain	**GapT2**
Kanpur Type3: Upland of Ganga Alluvium Plain	**GapT3**
Kanpur Type4: Central Lowlands of the Ganga Alluvium Plain	**GapT4**
Kanpur Type5: Flats of the Yamuna Alluvium Plain	**YapT5**
Kanpur Type6: Upland of the Yamuna Alluvium Plain	**YapT6**
Ravines	**RA**
Rivers	**RI**

Table 1.2 Soil and Land Characteristics have the Mapping Units

Map Unit	Texture	Drainage	Slope	Erosion Hazard	Coarse Fragment (%)
GapT1	S-Sil	Imperfectly	Flat	el	0
GapT2	L-Cl	Moderately well	Flat	el	0
GapT3	Sl	Well	Gently Slopping	el	0
GapT4	Cl-L	Very Poor	Flat	e0	0
GapT5	Sl-L	Moderately Well	Flat	el	0
GapT6	L-Cl	Imperfectly	Gently Slopping	el	0
RA	Sl-L	Somewhat Excessive	Gently Slopping	el	30
RI	-	-	-	-	-

Table 1.3 Distribution of Soil Association Under Different Mapping Units

Map Unit	Geomorphology	Topography	Land Use	Soil Association
	Ganga Alluvial Plain			
GapT1	Resent Alluvia	Flat	Cultivated	Kanpur Type1
GapT2	Lowland	Flat	Cultivated	Kanpur Type2
GapT3	Uplands	Gently Slopping	Cultivated	Kanpur Type3
GapT4	Central Lowland	Flat	Cultivated	Kanpur Type4
	Yamuna Alluvia Plain			
GapT5	Flats	Flat	Cultivated	Kanpur Type5
GapT6	Uplands	Gently Slopping	Cultivated	Kanpur Type6
RA	RAVINES	Gently Slopping	Scrub	Yamuna Ravines
RI	RIVER	-	-	-

GANGA ALLUVIUM PLAIN

- Kanpur Type2- Lowlands of the Ganga Alluvium plain
- Kanpur Type3- Uplands of the Ganga Alluvium plain
- Kanpur Type4- Central Lowlands of the Ganga Alluvium plain

YAMUNA ALLUVIUM PLAIN

- Kanpur Types Flats of the Yamuna Alluvium plain
- Kanpur Type6- Uplands of the Yamuna Alluvium plain

RAVINES

RIVER

The eight numbers of physiographic-soil mapping units were delineated Table 1.1. DESCRIPTION OF PHYSIOGRAPHIC UNITS AND SOILS

Alluvial plain:

Ganga and Yamuna and their tributaries form this soil unit. The soil is very deep and the drainage conditions are somewhat high to very poor. These units are cultivated for various crops like wheaten beans.

GapT1

This unit has an almost level slope. Soil erosion is slight. These units leave incomplete because there are no pieces in this unit. The soil texture varies from sand to silty loam.

GapT2

This unit has an almost level slope. Soil erosion is slight. These units have moderately drained soils. No course pieces are covered in this unit. Soil texture varies from loam to clay loam.

GapT3

This unit is gently sloping. Soil erosion is slight. These units have well-drained soils. No course pieces are covered in this unit. The soil texture in this unit is sandy loam

GapT4

This unit has an almost level slope. Soil erosion is negligible. These units have highly drainable soils. No course pieces are covered in this unit. Soil texture varies from clay loam to loam.

Phyto-Geographical Mapping of Kanpur:

The total geographical area of Kanpur city and Kanpur countryside is 6176.5 Sq.km. The area has zero natural forest except for a few trees planted by the forest department on barren land. This entire land has been degraded in the last few decades, due to grazing, illegal cutting of trees without understanding the consequences. Hence the natural vegetation has almost disappeared and the forests are nominal. The forest department has declared some reserved areas, which are as follows.

- Roadside plantation area
- Alongside the Rail lines plantation area
- Alongside Canals plantation area
- On GRAM SAMAJ lands plantation area
- Ravine lands plantation area
- Forest zones

1. ROADSIDE PLANTATION AREA:

But in these, there are only a few rows of trees, which are of the same species and same age. It seems that in the beginning only a particular tree species was planted on different areas. As time passed most of the trees died. And different types of trees species were planted on the same area. This must be the effort to plant the same species. So in the row of shade giving trees there was a mixture of old as well as new trees. The old roadside plantation consists of Ficus lacor Buch. Ham, Dalbergia sissoo, Mangifera inica, Azadirachta indica, Syzygium cumini, Tamarindus indica linn, Terminalia arjuna W. & A., Albizzia lebbek (linn)/Ben sterculia urens Roxb., Ficus Roxb., Ficus religiosa linn, Pongamia pinnata (linn), Ficus bengalensis linn. etc, which are planted in rows and in the new plantations the trees which are mainly planted are Eucalyptus hybrid, Prosopis juliflora, Delbergia sisoo Roxb. with these, there are a mixture of Cassia siamea, Acacia auriculiformis. Terminalia balerica, Albizzia procera, Haplophragma adenophyllum Terminalia arjuna, Acacia auriculiformis, Bauhinia variageta, Cassia fistula Parkinsonia aculeata tree species. New species have replaced the old tree plantations in the last two decades. Now these plantations are in two or three rows. These consist of mainly Dalbergia sissoo, Mangifera indica, Syzygium cumini, Terminalia arjuna, Eucalyptus hybrid plantations. After 1970 Eucalyptus hybrid is the main plantation compared to other species, Since 1975 multi-row plantation technique is adopted by the forest department and are planted at lesser distance and in more rows. At some places Terminalia arjuna, Pongamia pinnata, Syzygium cumini have been successfully planted in multi rows. And in a few years these have turned to be shade-giving rows.

The roadside plantation planted by the Forest Department is of the same age. Acacia nilotica was planted in the rows along the sides of the rows and on the outer border to save the planted trees. Now these babul trees have become thick. Some roadside areas, which are affected by USAR Prosopis, are successfully planted in some areas. In most of the rows the ground between the trees is open and in some places bushes are visible. In this place Ghar Badu, Ruta Sugar, Azadirachta Indicu, Acacia

Arabica/A. Nilotica species are found. Most of the trees have lost their shape due to age. Growth has since stalled.

2. ALONGSIDE THE RAIL LINES PLANTATION AREA:

Most of the land along the railway line is amputee. In some places old trees viz. Dalbergia sissoo, Azadirachta indica, Syzygium cumini, Madhuca indica are seen in the boundaries of the railway line. In the remaining area either water logging is their or Zizyphus jujuba are there. New plantations are mostly not successful. In some places Acacic arabica/A. nilotica, Prosopis can be seen.

3. ALONGSIDE CANALS PLANTATION AREA:

On both the sides of the canals the irrigation department had planted trees, which were mostly in one or two rows for providing shade Syzygium cumini, Dalbergia sisoo, Madhuca indica etc. shade giving trees were planted here. The forest department is planting trees under social forestry project since 1979. As per the needs of the villager's multi row plantation are done. In the planted species the main species is Eucalyptus hybrid. Apart from Eucalyptus hybrid, Pongamia pinnata, Syzygium cumini, Dalbergia sisoo, Cassia siamea have also been planted. But most of the rows are still vacant.

4. ON GRAM SAMAJ LANDS PLANTATION AREA:

Most of the land, which was given to the forest department by Gram sainaj are wasteland. In these areas vegetation is all most nil after the contract with the Gram samaj. The forest department encouraged the plantation but generally the lands are laying waste.

5. RAVINES LANDS PLANTATION AREA:

In 1901 Mr. Harbert Dampdun who was a forest officer planted Acasia nilotica, along the ravines (850 acres), which were near the Kalpi Railway line. In 1912, 130 acres of forest area, which is also known as Allen, forest in Nawabganj in Kanpur. Dr. H.D. Allen did the plantation through Silviculture. In 1916, 125 Acres of land was increased in Allen Forest Kanpur. In 1919, Kanpur Improvement Trust got the plantation done around Allen Forest bagh area at its own cost through the forest department. In this way the work on the ravines got a thrust. Kanpur contains 0.55 lack hectares of ravines. The problem of ravines is very dangerous. In these ravines maximum area is slowly planted, through the forest department. The remaining ravines are dry with no vegetation and all in possession with Gram samaj, where in the name of vegetation on the mounds Capparis deciduas, Acacia leucophloea, Salvadora persica, Apluda mutica , Cynodon dactylon, Streblus asper, Desmostachya Carissa carandas species vegetation are found. The species in degraded condition naturally in ravines areas are follows:

Acacia leucophloea, Prosopis cineraria, Azadirachta indica, Holoptelea intergrifolia Acacia catechu, Balanites uegypticu, Flucourita indicu, Cupparis deciduus, Carissa carandas, Zizyphus nummularia, Dichrostachys nutans, Salvador persica, Desmostachya bipinnata, Apluda mutica, Bothriochloa pertusa.

6. FOREST ZONE:

90 zones are there in forest Department. In which new species of trees are planted from the experimental point of view along with old trees.

CONCLUSION:

Kanpur district conducted experiments on farmers' fields as well as state farms in different soil regions of the district. Large-scale experiments on both kharif and rabi crops have shown that nitrogen is a universal requirement for all crops and soil types and that phosphate is a requirement only for soil types. Contrary to the hitherto held belief, it has been found that application of phosphate-to-phosphate deficient soils is highly beneficial for crop production and increasing soil fertility. However, this response is only achieved when phosphate fertilizers are applied to deer at a depth of 3 to 4 inches and only in the presence of adequate nitrogen.

REFERENCES:

1. Chandel S.R.S. (1998), A Hand Book of Agriculture Statistics, Anchal Prakarshan Mandir, Kanpur
2. Ghosh A.B. Bajaj J.C., Hasan R. and Singh D. (1983), Soil Water Testing Method. IARI New Delhi.
3. Gupta P. (1991). Bio-pollution Studies of ALGALE of GANGA WATER. Ph.D. Thesis, Kanpur University, Kanpur
4. Mukharji K.G., Agarwal M.K. and Saxena A.S. (1969). Where from Allergenic fungal spores are coming? In "Aspects of allergy and Applied Immunology", New Heights Publishes, New Delhi-2: 181-189.
5. Pandey A. (1992). Studies on Major Pollutants of Kalinadi and Microorganism. Ph.D. Thesis. Kanpur University, Kanpur.