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*North Asian International Journal*

*Of*

*Multidisciplinary*

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ISSN NO: 2454 - 2326

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## SOIL TYPES AND VEGETATION IN KASHMIR VALLEY

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### Introduction

As per Rajatarangi Kashmir valley was a lake called Satisar the river of kings. It is all most surround by the great himalayas and the pir panjal range.



For hundrand of millon years Kahmir valley remained under sea, According to hindu mythology, the lake was drained by the great rishi or sage kahsyap son of marchi, son of brahma, by cutting the gap in hills at baramulla when kashmir has been draned. Geologists believe that kashmir valley was earlier affected by earthquakes and the water of satisar lake flowed out living behind lacustrine mud on the marigan of the mountains known as karewas. The karewas are mostly found in west of river jehlum were these table lands attain a hight of about 385 meter above the level of the valley. These karewas protrude towards the east and look like tange shaped. As a result of an earthquake, the water that filled the area formed the wular lake, the largest lake in India

## **Soil Types of Kashmir Valley:**

According to Dr. A.N. Raina, who has made a profound study of Kashmir basin soils, there are eight types of soils which are named in local Kashmiri dialect. They are as following.

### **Gurti (Silt)**

It is alluvial soil, rich in clay, organic matter and nitrogen contents. River Jhelum and its tributaries deposit this silt in flood plains of verinag, Doru, Budgam, Baramulla, Bindipora, Kulgam, Pulwama, Sumbal, Sopore, Shopian, Achabal, Pampora and Anantnag. The soil can withstand scanty rainfall and need no heavy manuring

### **Bahil (Loam)**

It is a rich loam of great natural strength with dark colour when dry. Overdose of chemical fertilizer make paddy plants run to leaf and cause a disease (Raj). This fertile soil need no manuring.

### **Sekil (Sandy)**

It is a light loam with a sandy sub-soil, yields good results when properly flooded in case of paddy crop. It spreads over the north west of Kashmir along sindh river basin.

### **Surzamin (Vegetable Soil)**

It is wide spread along the waterways of the valley. In other words it is the light soil of the cities e.g. rotten vegetables and fruit etc. This soil is best suited for vegetables growth garden crops

### **Lemb**

The land beneath the lakes and springs, becomes stiff and hard when dried. It is known as shath, sandy soil formed by Mountain Rivers. It is not so productive for crops.

### **Floting Garden Soil**

It resembles the chinampas of old Mexico, mostly found in Dal Lake, used as floating market gardens. On floating rafts in the Lake reeds, clay and grass beds are placed. In the amalgam spread over the rad everything is provided, required for plant growth.

### **Karewa Soil**

It is the old silt deposited by Tethy's Sea or lacustrine deposits covering almost half of the valley. This soil is permeable containing coarse brown sand, becomes more harder with increasing depth. It is uncultivated dry table lands of Kashmir due to poor nitrogen and organic matter.

### **Nambal Soil (Peaty)**

It is a peaty swamps or marshes containing a little lime or is friable. Wuler lake is the largest tract of this type of soil. All other lakes in the valley contain such soils. The irrigation water seeps away through the sub-soil, thus suited for maize and rape, seeds.

The Jammu and Kashmir state is known for its saffron, paddy, orchards and other fruits and crops which assumes a great significance of its soil. The thick alluvial soils rich in organic matter and nitrogen content, are confined only to valley bottoms (foothills) and terraces, where fluvio-glacial soils are located. Podzol soils are formed by pine and coniferous forests.

### **Kashmir valley**

The Kashmir valley along with Doda and Poonch districts lie in temperature zone with an alluvial soil rich in nitrogen and organic matter. This alluvial soil is of two types; new and old. The new is very fertile as it is enriched every year by silt of mountain streams. The old alluvium (karewas) is of less fertility, but with good and moderate rains and proper tillage it gives excellent results.

### **Vegetation:**

There are certain factors which produce a variety of vegetation in different regions of Jammu and Kashmir state viz. lithology, slope, altitude, climate soil and rainfall. It varies from the Himalayan meadows of Ladakh to the evergreen coniferous forests on the gentler slopes and scrub forests of foot hills to the deciduous trees of southern Pir Punjab and its valley. The state has a forest area of cover 22604sq.km. Forests often grow in those areas which receive sufficient rainfall. In Kashmir valley forests grow on places with more than 100 cm annual rainfall.

In the outer plains and outer hills of the state which receive scanty rainfall (less than 100 cm.) scrub forests predominate which are called as *Toona* and *Grewia*. These include trees of mangoes, berries, papal, acacia, phulai, bamboo, jund, kaimal and black berries. The slopes of Siwalik hills which receive more rainfall than outer plains, grow trees such as neel, amaltas, sheesham, pine, ber, kikar and hing etc. The forests cover more than 58 percent of the area of Kashmir region whereas the jammu tract has about 46 percent of its area under forests. The district wise area under forest cover is, Doda 50%, kathua 28%, Srinagar 29%, baramulla 71% and anantnag 60%. "Species have strong regional association with the punctuation by the altitudinal zones though in general coniferous forests account for about 85 percent of the forest area."

The northern slopes of middle Himalayas (Chenab Valley), since they receive more than 100 cm. Annual rainfall, are covered with thick vegetation of coniferous forests. These forests include chir trees with deodar at higher elevations, besides the kail and partial trees. The valley of Kashmir is rich in forests which contain variety of trees such as fir, pine, partial, mulberry walnut, chinnar and other fruit trees. On higher elevations in Bhadarwah, Kistwar, Baramulla, Anantnag, Gulmarg etc. There are meadows of grass often used by Gujjars and Bakarwals for grazing their

cattle. The pirpanjal is full of both couifereous forests and deciduous trees. Ladakh, though very vast in area is having almost no vegetation cover except some stunted cedars and willows which grow on some moisture strips.

The Kashmir valley has its own type of vegetation cover which is different to that of middle mountains and form one of its greatest.

### **Climate:**

About 5 months experience temperature below freezing point, the radiation and insolation are extremely rapid resulting extremes of temperature in shade and sunshine, causing frost and sun, stroke at the sane time. January is the coldest month with a temperature of minus. The important towns are Kargil and Leh, besides Dras, Rong, Zanskar, Nubra, etc. The monsoon is utterly weak because of great Himalaya barrier. Blowing snow in January and February reduces visibility to few meters with extream of fog in morning hours. The low temperature , low relative humidity and dry weather are the chief characteristics of the climate of ladakh, which restricts the cultivation of crops, however some cereals, foddors and vegetables are raised, besides some dry temperature fruits.

### **Afforestation**

With a view to reduce the rate of depletion of forest cover and to protect the forest reserves of Jammu & Kashmir, the state forest department has covered more than 32000 heceters of land under its massive afforestation drive during the last four years under different schemes.

State government considering the gravity of the situation due to enormous devastation of forests in the state has taken numerous steps.

Despite financial constraints, forest department alone has covered an area of more than 19000 hectarts centrally sponsored schemes and another 1500 hectares under plan schemes.

### **Geographical conditions**

Wheat is rabi crop, grown in winter. It grows best in a cool, moist climate and ripens best in warm dump climate, the temperature at the sowing season should be about 50-F and at the ripening season it should be 70-F. Well drained loams and clayey loams with fine tilth are considered to be the best for wheat cultivation. However, good crops of wheat are raised in sandy loams and black soil. It grows in a tropical, sub-tropical temperate and cold zone even beyond 67- north latitude. It can stand the cold of severe winters at an altitude of 10 thousand feet above sea level. It requires a temperature of about 20-C and at ripening time it should be between 25-C to 27-C. It requires a rainfall of 30 cm. conducive at interval. Well drained alluvial soil, uniform in texture is ideal for wheat cultivation. In J&K state

it is sown in October and November and harvested between April and May. In Jammu and Kashmir state wheat is rabi crop for Jammu plains and a Kharif crop for Kashmir valley and lower reaches of Chenab valley.

### **Exhaustion of soil Fertility**

Soil erosion on account of heavy downpour of rain is the main reason of exhaustion of soil fertility. Million of tones of soil are drained to the sea every year resulting in sheet and gully erosion. The fine topsoil is blown away by the strong winds in hot and arid regions. Thirdly the soil is exhausted by depletion which result by the continuous cultivation of same crop every year, without restoring its lost fertility.

### **Limited Plain Area for Cultivation**

One of the main reason responsible for slow growth of agriculturer in state is limited cultivable area.

### **Conclusion:**

The soil survey can enable us to find out the fitness of various types of soil for the cultivation of various types of crops. Because all land may not be fit for all crops. But in J&K state the agriculture is characterized by lack of planning in the utilization of land.

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