



“Soil characteristics and crop suitability of sandy soils in Jharkhand, India”

Shipra Joseph¹, Sandhya Joseph²

I. INTRODUCTION

Wilson has rightly remarked the history of civilization is the history of the soil and the education of the individual beings from the soil.

Soil is the surface and the adjoin horizons of the horizons of the parent material which have water air and various species of organisms living or dead this change is reflected to a certain degree in composition structure and the color whatever has rightly remarked the history of civilization is the history of the soil and the evaluation of the individual begins from the soil

Soil is the surface and this adjoin horizons of the rezones of the parent material which have water and various species of organism living or dead this change is reflected to a certain degree in composition structure and the color of the product of weathering shall is the outcome of the modification of some loses minimal mantle by geographic agent the study of soil is called PEDOLOGY.

Soil fertility is an aspect of the soil plant relationship the fertility status of the soil mainly depends the nature of vegetation climate topography texture of soil and the decomposition rate of organic matter optimum productivity of any cropping system depends on adequate supply of plant nutrients GIS is a versatile tool used for investigation of soil database and production of a variety of user specific and user friendly interactive maps

Soil horizons are founded in soil there are three soil horizons – A, B, and C

Systematically from the surface to the deep ground again these horizons have been rule divided as A0, A1, and A2

B1, B2 and B3 C and R soil as the direct product of land form a basic of land forms a basic component of land use study

II. GENERAL DESCRIPTION THE AREA

Thakur ganti block is a micro region to study it lies in the northern most part of godda district in Jharkhand province it was separated from mother moherma block with the entire eastern half part here cultivation is for a long time and form the basis for sustainable development of an over when majority of the person this too has panged by the chronic food problem as per capita arable land is decreasing in relation to rapid rate of population growth

III. SOIL CLASSIFICATION

From time to time national and international learned persons have classified soil in India royal commission of agriculture report (1928) and India soil survey schema under agriculture research council (1953) have classified soil later the work was ahead by Dr. P. Dayal (1953) Dr. E. Ahmed (1954 and 1965) Dr. R. Singh and Dr. A. Kumar (1970)

Table no 1
soil texture in Thakur fangti block (2015)

S.N	Type	Texture	Area
1	Kewal	Clay	9122
2	Kewal doras	Clay loam	5236
3	Kachuhi	Loamy sand	2113
4	Kachhari	Mud	564
5	Bal sundry	Sandy loam	451
6	Bal thar	Sandy	321



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435(Online) Volume 8, Issue 12, December 2019)

The table shows that there are six type of soil in the block kewal , kewal doras, kachuhi , kachhari, bal sundry and gorla .

1. KEWAL

Kewal has grey / yellowish black in colour on the upper layer due to this colour it also known as matiyar it hold moisture and water retaining capacity due to massive structure and sticky structure after wetting it has high percentage of clay /heavy clay

Loam with humus after mixing chemical element manure/fertilizer acidic and basic soil can be reclaimed kewal soil is found in both river banks a little away from beds it has an area of a/22 hectare in the well drained section of the block it is suitable for all crops in irrigated area yet it has significance for paddy and gram crops

2. Kewal Droras

It is composed of mainly clay and sand it is rich in organic materials and is blackish gray in colour so it is called as kewal doras it a geanular structure it is mainly suitable for wheat it is found in the northen part of this block the droducation of crops is high in irrigated area

3. KACHUHI

It is vrown /yellow in colour it is locally known as domat or loam it is situated in both banks of river bhorai butha koa dholia etc it has an area of 2113 hectare it is well drained soil with retaining water it is rich in organic materials best suited for paddy and ravir crops

4. KACHHARI

It has a mixture of mud and sand particules symbols of conglomerate is also found it is special found in both river banks in this block due to flood it has morshy land it is usefull for vegetable only during the dry session it has an area of 564 hector .

5. BAL SUNDRY

It is consisted of sand loam it has high fertility depending upon the intensity of irrifation it is suitable for paddy and rabi crops with the help of irrigation it has an area of 451 hectare it is founded in the western part and the center eastern past of this block

6. BALTHAR

It is locally brown as balua or baldhusari it is yellow in colour due to sand it has very low water retaining capasicty it is suitable for rale after well managing and irrigation millets and arhar has mostly sown during the kharif season it is found in the eastern past and norh western part of the block near madanchoubi bill and rajmahal fool hill in the east it ha an area of 321 hector

IV. SOIL TEXTURE

Soie texture studies that relative size group of the individual soil grain and its classification are based on different combination of sand silt and clay soil texture study help in concluding the most productive and profitable utilization through proper management

They have control over agriculture as the soil water is being controlled by the pore space the pore space is depended upon the distributionand size of the soil water level is higher is fine grained and compact

Balsundry and balthar have low water level thus these is possibility of well and tube well irrigation productivity is also associated with rainfall sufficient canal area produced canal area produce lesser paddy than the area away from the canal during the sufficient rainfall

The help of irrigation with the soil texture determines the suitable of crops paddy sugarcane etc prefer clay and clay loam while cereals vegetables and root crops prefer sand soil as irrigation is easy to practical.