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Soil Fertility and Its Consequences for Vidarbha Region

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ABSTRACT

India is the country where the 90 % population is depends on farming .the main income of source is their farms , but now a days development in technology is carried by farmers to earn maximum money . for that they use various types of pesticides various methods which gives them temporarily profit but that effects on human health , climatic change , water quality , soil quality , the use of pesticides makes land barrel .if the soil is rocky an on slope area that soil is infertile in nature because of runoff , in this paper we discuss about the eastern side of Maharashtra called vidarbha there is one town name yavatmal which have many issues of infertility of soil so what is the properties of that soil and which crops are taken in that particular area will discuss below . the max no of farmers suicide is from vidarbha because the rainfall is not sufficient and the type of soil found mainly black cotton soil the water holding capacity is poor that effects on directly the fertility of soil so we trying to found out the solution for that whole problem.

KEYWORDS: Rainfall , Soil properties , Fertile soil , Climatic change .

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INTRODUCTION

soil is the earthy material which plant growth occurs . soil have different layers which site reports may helps to h is differs by physical chemical and micro logical characteristics . soil is the result of rock due to weathering and erosion process , it contains organic matter , water , air and bacteria etc. which may varies in quality due to farming , parent material , and weatherchanging.

Yavatmal district is situated in the eastern Maharashtra. with the help of Google map the latitude longitude are shown in picture.



Fig. location trace by Google map

and there farmers are taken main crops like cotton , soyabean , jawari , bajari , turetc essential nutrients are supplied by the soil for proper growth of plants .hence the quality of crops and yields depends on the properties of soil . In these paper we identify the properties of soil and their effects on agriculture purpose . soil physical properties are very important for testing the fertility index of soil . in that NPK values plays an important role , if the NPK is high or less then some supplements are required to enhancing the fertility . the atmospheric temperature and quality of soil decides which yield should be taken , according to results and from past too many years the farmers of yavatmal taken crops like cotton , soyabean , tur it required less water and it survive in there temperature , but because of excessive use of pesticides and repeat the crop up to continue 2 to 3 years makes the soil dull then the quality of product and quantity of product may decrease which goes in loss for farmers for provision of all these is required so by analyzing that soil properties may gives some sort of result . inthis we calculate the physical properties of soil chemical properties and biological properties for improving the quality and which supplements are required is identified.

LITERATURE REVIEW

I. impact of BT cotton – A case study of yavatmal district of Maharashtra state .

In this paper they shows the soil condition , like yavatmal districts mainly area is situated on hilly area the type of soil is found in rocky soil and black cotton soil both soil doesn't have the good water holding capacity so the rain water can't be hold in soil. The main crop is taken in that area is cotton, BT cotton is the type which gives the maximum quantity of yield and the income increase that the regular cotton. but the advantages is always comes with some disadvantage that BT cotton may sucks the pesticides which is more dangerous for human health the nausea vomiting are occurs when in contacts with BT cotton . and it may stays longer time in our body that makes dangerous for body that's why this BT cotton is not really good for soil also that's why BT cotton is rejected in compare with regular cotton type .

II.physic chemical analysis of soil from some farms of digras region of district yavatmal in Maharashtra , India .

The regular condition of soil is sandy and the silt is maximum so that the soil water holding capacity is too poor. Those effects on the quality of decreasing in the physical and chemical properties therefore the physic-chemical analysis is necessary because of that the current condition is define and the quality should help to decide the supplements. The use of chemical fertilizer is increasing that makes the soil infertile because of that chemical fertilizer the toxic chemicals are remains in the soil properties that again goes in the plants which may harm the human body. in this paper they did the analysis in which they includes the testing of pH EC ,organic carbon , total nitrogen , phosphorous , potassium and with this the particle size distribution results are done in that there are mainly rocky soil is present the rocks are large , silt is intermediate , and clay is very fine . This paper gives me the idea about the total types of soil available in the yavatmal district .



Fig. burnt plants after using more pesticides.(ref no . 1)

HISTORY OF SOIL

The earth crust which is loose in material like stone to gravel to sand to silt to clay. It contains the organic material, air, water, that is help to grow the plants from which we can survive. it helps us for agricultural purpose so that we can make maximum yield. Soil contains various types of nutrients from which we can identify the quality of soil or type of soil . and to identify them the analysis process is carried out the productivity of soil was depends on erosion of soil , rainfall , runoff but now a days the urbanization and industrialization gives the too much waste product mix with soil . and that effects the quality of soil the infertility index is now increasing .

There is various types of soil present in atmosphere , the properties of soil change on every some distance the fertility of soil is totally depends on the atmosphere of surrounding the locality use of soil rainfall is define the properties . The main physical properties affects the fertility that's the NPK value this value shows fertility index. Nitrogen, phosphorus, potassium, organic carbon, pH , electric conductivity this physical properties shows us the contains present in soil . Likewise the porosity, particle size water holding capacity is also defines the soil .as the black cotton soil is good for cotton because that crop doesn't need the too much water , because the water holding capacity of black cotton soil is very poor. It means the type of soil decides which type of crop should be taken so we can take maximum crop.

EFFECTS OF SALINITY

Salinity means contains of salt presents in soil which damage soil. This may cause by the naturally such as mineral weathering or by gradual withdrawal of ocean. it can be also possible by artificial process such as irrigation and road salt . There is various types of reason which may leads to salinity, dry land salinity , salinity due to irrigation and from that soil tolerance on crops , and regional effects .

In yavatmal district the land in that area is maximum sloppy the soil property is found maximum black cotton soil which have water holding capacity is very poor so the properties of soil may contains maximum of salt because of the runoff , and minimum waterfall. This reason and the weather is also hot so the evaporation process is fast which may deposit salt to the soil , and saline soil doesn't helps to fast growth of plants and supply of nutrients may not goes to the plants because of salinity of soil .

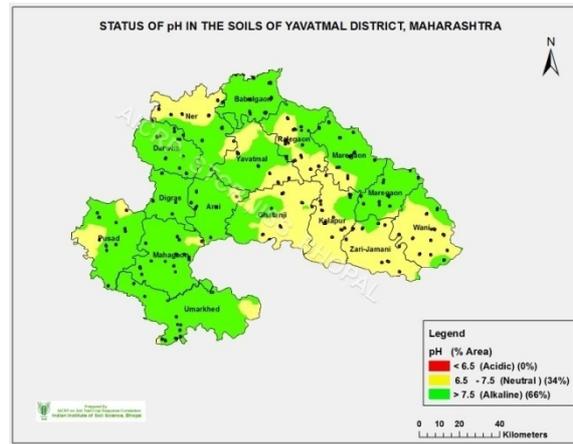


Fig. Showing pH of yavatmal district. (ref no. 08)

Like pH all the physical properties of soil shows the soil of yavatmal is maximum saline by naturally. So the infertility is increase.

EXISTING METHODS TO IMPROVE FERTILITY

The main work to decide the fertility of soil is to make a analysis with using the physical and chemical properties of soil which gives the idea about the which contain in soil is maximum and minimum so can we do something to neutral the soil . in the yavatmal district the salt contain is more so land is become barrel for agriculture purpose . so then the use of pesticides is to be avoid to maintain the organic content off soil and the organic compost may helps to increase the fertility of soil . The use of compost with the help of vermicomposting or organic compost is widely used by farmers .it gives the long last fertility of soil .

CONCLUSION

Existing methods of removing salinity are not economical and effective. Author involved in research activity for alternate methodology for effective reduction of salinity and increases the fertility performance in economical way. The reduction of salinity with the help of organic material is should be used for increasing fertility of soil . The simplest way find out to fight to the salinity problem in economic way.already the condition of farmers is too poor , because of less rainfall and poor condition of soil already they are in loss so by providing the economical way to find out the solution on saline soil . it means conditioning of soil , long last advantage in increasing properties of fertile soil , use of organic waste to make the soil fertile and achieve the economic condition is the solution of problem.

The use of this organic material which is use for the conditioning of soil is easily available in no cost .and the process is to easy that farmers can easily adopt and use for their better use.

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