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Impact of Essential Nutrient NPK Importance for Agriculture Production

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Abstract

In this paper on attempt has been made to study the NPK importance of soil. The present study has been taken to have an idea of chemical characteristic of soil properties in agriculture for health and food purpose. The quality of soil is controlled by physical, chemical and biological components of soil and their interaction. In chemical properties the roll of essential elements are very important such as PH, electrical conductivity, organic carbon, copper, zinc, magnesium, manganese, iron, phosphorus, nitrogen, potash etc. There are five samples were collected from different site every sample has various properties. In observation table one the data of all essential elements are given. The normal value of organic carbon is in between 0.12% to 0.13%. The value of nitrogen is minimum, the value of potash is minimum for sample-2 and value of phosphorus is suitable for sample-3 (Jaspur Garden). The natural nutrients such as phosphorus, potassium and nitrogen etc. Improve plants growth. These chemical fertilizer with varying concentration improve the growth of plants. Research in this area not only upgrade our recognition of soil science but this knowledge agriculturists.

Keywords: Soil Quality, fertility, dielectric, nutrients, dielectric constant.

Introduction

The Role of soil of fertility, fertilizer and proper exercise of process is very important, progressive formers utilize update and Innovative approach. It is well none soil is extra ordinary complex medium. It consistent of heterogeneous mixture gases, liquid and solid material.

Textural analysis of soil is very important with the help of textural analysis Researcher is research at the goal. With the help of soil texture formers give desired production.

There are 12 class of soil textural that is loam, silt, silt sand, clay, silt clay loam, clay loam, silt loam, sandy loam, loam sandy sand.

The role of fertilizer are interconnected with micronutrients and macronutrients.

In soil different chemical properties 12 parameter are important but NPK play pivotal role in farming.

The basic description are In NPK are given below

Nitrogen: Nitrogen is one of macronutrients which is required in large amount for plant growth. Crops usually take nitrogen from the soil. In the form of nitrate (NO3-) and ammonium ions.

In generally the nitrogen found in soil two forms organics nitrogen fertilizer and organic nitrogen fertilizer.

Phosphorus Fertilizers: Phosphorus Fertilizers Phosphorus has rightly been called in aster key to agriculture as low crop production. In Phosphorus Fertilizers element is present in the form of phosphate or super phosphate salt. Superphosphate it is water soluble fertilizer. It contain monocalcium phosphate, dicalcium phosphate and tricalcium phosphate, gypsum, silica, iron Ammonium. Superphosphate is the cheapest fertilizer. Nitrophosphate is highly hygroscopic. It is suitable for acid soils.

Potassium: Potass is an important nutrients for helping plants resist lodging. Potassium promote a high concentration of sugars in cells. These fertilizers are soluble in water which means that potassium is readily available to plants. Common potassium fertilizers potassium chloride, potassium sulphate, kainite, wood ashes. Generally potassium fertilizer uses in alkaline oil.

Materials & Methods

Soil sample are taken from different location of Chhattisgarh soil samples are collected from different location of herbal garden land at the depth of around 0-15 cm soil samples is taken.

This procedure was repeated while preparing composite samples represents all five sites covering from Chhattisgarh. The samples dried in the open atmosphere, to remove the moisture. Sample were collected from five places (c.g.) details are-

i). First sample (S1.) has been collected from: Auri Gabhra Raipur CG.

ii). Sample two (S2.) was collected from: Old Sarkanda Bilaspur.

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iii). Sample three (S3.) was collected from: Karamgarh Jashpur Arra CG.
iv). Sample four (S4.) was collected from: Kulmali Bastar CG.
v). Sample five (S5.) was collected from: Sirri Rd, Machandra Tamara Durg CG

Table 1: Chemical Properties with Soil Samples.

S no	Parameter/samples	Samples 1	Samples 2	Samples 3	Samples 4	Samples 5
1.	PH	7.12	6.7	6.5	6.3	6.9
2.	EC(ds/m)	0.1	0.2	0.1	0.1	0.1
3.	OC(%)	0.12	0.54	0.78	0.27	0.135
4.	N(kg/hact)	137.77	150.3	137.77	87.67	100.2
5.	P(kg/hact)	16.12	2.688	10.75	16.12	17.92
6.	K(kg/hact)	504	448	347	604	459
7.	Zn(ppm)	2.438	1.68	3.084	2.154	2.230
8.	Fe(ppm)	20.82	17.6	65.54	46.14	24.24
9.	Cu(ppm)	1.750	0.504	0.184	0.236	0.172
10.	Mn(ppm)	20.20	15.42	18.19	24.19	14.97
11.	B(ppm)	5	3	1	2	2
12.	S(ppm)	25	17.5	15	22.5	25

Table 2: Standard Value of NPK.

S. No.	Normal Value (Kg/Hr)		
	N	P	K
1	280-560	10-25	145-337

Table 3: Observation-2

S no	Samples	Nitrogen (Kg/Hr) N	Phosphorus (Kg/Hr) P	Potassium (Kg/Hr) K
1.	Sample 1 (S1)	137.77	16.12	504
2.	Sample 2 (S2)	150.3	2.688	448
3.	Sample 3 (S3)	137.77	10.75	347
4.	Sample 4 (S4)	87.67	16.12	604
5.	Sample 5 (S5)	100.2	17.92	459

Result & Discussion

For nitrogen all sample it has found that the value is minimum. The value of phosphorus in suitable for sample 1, sample 3, sample 4 and sample 5. The value of potassium of sample 3 (Jaspur) is suitable.

The study of NPK is very important all those. It is very simple in general. But micro analysis of NPK at grass root level provide ultimate result. NPK elements play an important role in the physiology and growth of the plant Humans have been dependent on plants since the advent of utilization for food and medicine. Various types of fertilizer containing essential elements are now being added to agriculture land. Some essential microelements required by the plants, nitrogen (N), Phosphorus (P) and potassium (K). Major macronutrients include phosphorus (P), potassium (K) and nitrogen (N).

Observation: 1

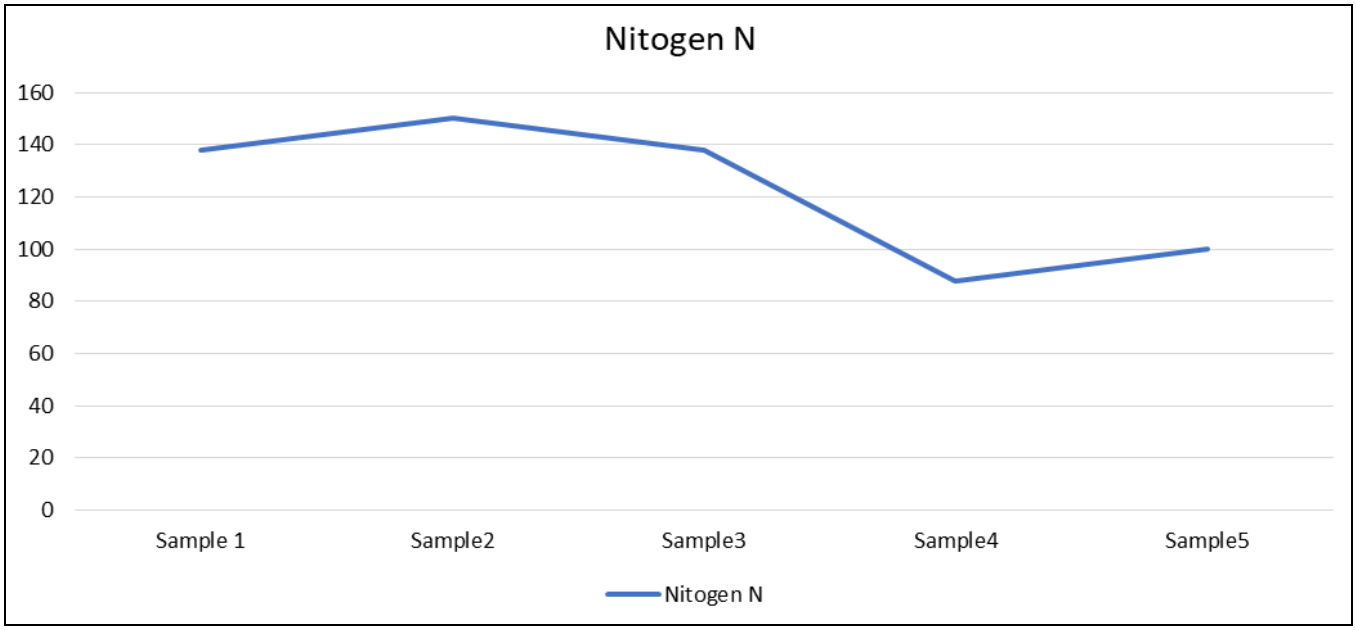

Fig 1: Variation of N of different sample

Observation: 2

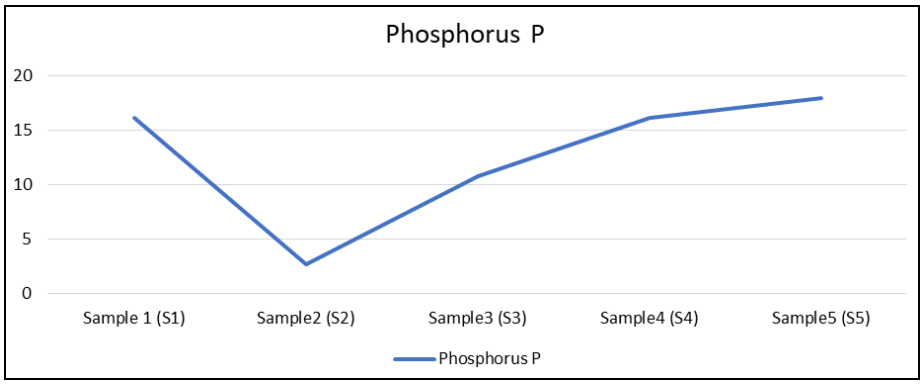

Fig 2: Variation of P of different sample

Observation: 3

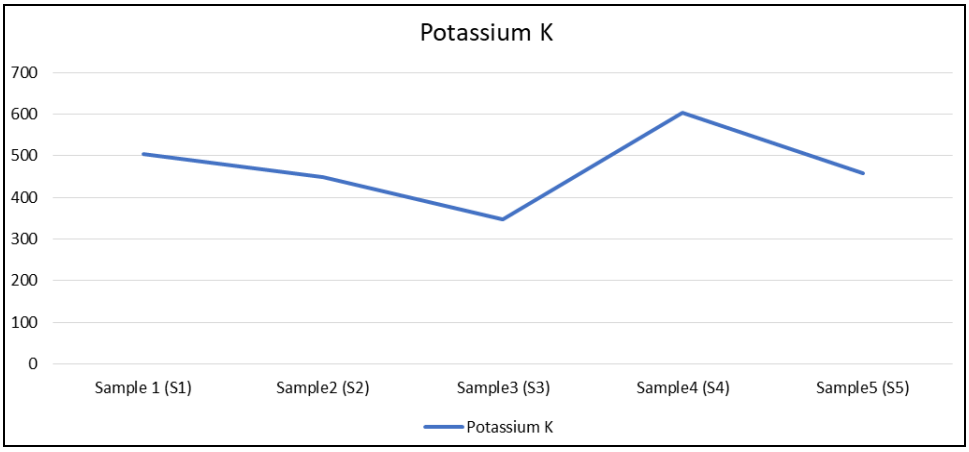

Fig 3: Variation of K of different sample

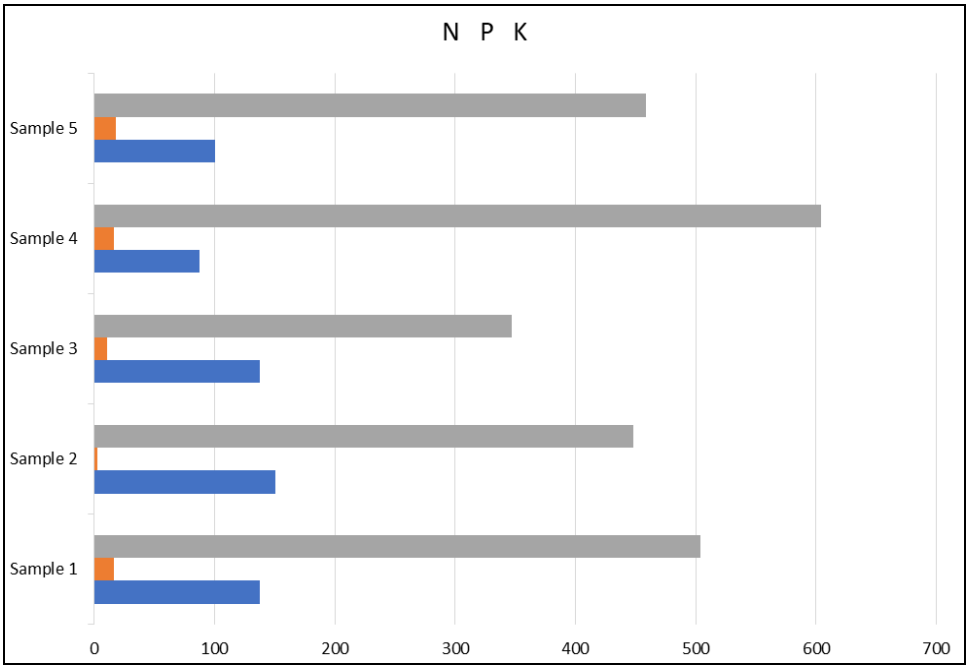

Fig 4: Compare to Nitrogen (N), Phosphorus (P) & Potassium (K) of different sample

Conclusion

Jointly NPK is the Eye of Constitutively. NPK is the pancia for any farmers. Without knowledge of quantity of NPK nothing can be predicted.

In the beginning state progressive former takes care. The texting of NPK in their field.

There are five sample were collected for different location. Every sample has different properties. In observation Table first show five sample have been fabulated.

Soil health is an inherent characteristic of soil. Healthy soil ensure optimum moisture content, significant amount of micronutrient lower level of pesticide, proper agriculture is

strongly closely related with soil health. To fulfil the sustainable agriculture combine use of organic and inorganic fertilizer increases crop production and improve soil fertility. Crop residues and other residues should manage in proper way to increase organic carbon content in soil. Moisture contain is proper way in soil the crop production increase. In sustainable land management, right use of fertilizers, water and pesticide effective crop culture through direction for sustainable agriculture in the world.

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