BOTANY STUDY PROJECT

"A Study of Soil P^H Values in Jadcherla town"

Presented by

Group: 5

K.PADMA	Bt. B.C	1933006445558
C.ANITHA	Bt. B.C	1933006445519
RAJASRI BHAI	Bt. B.C	1933006445611
NAGANJALI	Bt. B.C	193300644

SUPERVISOR NAME: Dr. P. SRINIVASULU

AY: 2021-2022

DEPARTMENT OF BOTANY

DR. BRR GOVT. DEGREE COLLEGE JADCHERLA

NAAC Accredited with B++ Grade

MAHABUBNAGAR-509301

TELANGANA

NAAC Accredited with B++ Grade

MAHABUBNAGAR-509301

TELANGANA

DECLARATION

We hereby declare that the investigation results incorporated in the present project titled "A Study of Soil P" Jadcherla town" were originally carried out by us under the supervision of P. Srinivasulu, Department of Botany, Dr. BRR Govt. Degree College Jadcherla, DistMahabubnagar. No part of this work has been submitted to any other university or institution for the award of any Degree.

Date:

NAME OF THE STUDENT	HALL TICKET NUMBER	SIGNATURE
K.PADMA	193006445558	K. Padma
C.ANITHA	193006445519	Anitha
RAJASRI BHAI	193006446011	T. Rajasri bai
A.NAGANJALI	193006445502	A. Naganjali

CERTIFICATE

This is to certify that the present work titled " A Study of Soil P^H Values in Jadcherla town" is the bonafide work of , **K.PADMA, C.ANITHA, RAJASRI BHAI, A.NAGANJALI** under my supervision. No part of this work has been submitted to any other University or Institution for the award of any Degree or Dimploma.

Date:

Dr. P. Srinivasulu
Research Supervisor

ACKNOWLEDGEMENTS

We express my heartfelt gratitude, respect and indebtedness to Dr. P SRINIVASULU, Dr.B SADASHIVAIAH Assistant Professor, Department of Botany, Dr. BRR Govt. Degree College Jadcherla for their valuable guidance encouragement, timely suggestions and immense patience throughout the period of work, without which it would not have been possible to complete the work.

We convey my gratitude and thanks to P. Srinivasulu, Head, and Department of Botany of providing the necessary facilities.

We express deep sense of gratitude to Dr.Appiya Chinnamma Prinicipal, Dr. BRR Govt. Degree College Jadcherla for his moral and technical support for the project work.

SOIL P^H INTRODUCTION

Soil P^H or soil reactionis an indication of the acidity or alkalinity of soiland is meascareed in P^H units soil P^H defined as tha megatic logariyhm of thr hydrogenong thr P^H scale goes ammount of hydrogens in soils

Increase the soil P^H decreales thus becoming more acident frome P^H 7 to 0 soil is increasengly more acident adn frome P^H 7 to14 soil is incresingly more alkalineo or basic

Desriptive terms commenly associated with certain ranges in saol P^H are

EXTREMELY ACID

Than 4.5 lemon 2.5,uniger 3.0,stomach acid 2.0,soda2.4

VERY STRONGLY ACID

Than 4.5-5.0, beer4.5-5.0,tomatoes 4.5

STRONGLY ACID

5.1-5.5 CARRTS 5.0 asparagus 5.5, boric acid 5.2,cabbage5.3,

MODERATELY ACID 5.6-6.0 Potates 5.6

Slightly acid 6.1-6.5 solmod 6.2,coosmiel 7.0

MODERATELY ALKALINE

9.84 Sea water 8.2 sodium bicarbote 8.4

STRONLY ALKAINE 8.5 -9.0 BOREAE 9.0

VERY STRONGLY ALKALINE THAN 9.1- MILK OF MOGNAL10.5 ONIA 11.1 TIME 12

Soil P^H provides various clues about soil properties and is easily detnminedg the most accrate mothod of determining soli P^H is by a P^H meter a second methods wich is simple and easy but lest accurate tha using a P^H meter consists of using certaion indicators or dyes

Many dyes change color with an increate or decrease of P^H in making a P^H determination on sail the simple is stured with the dye for a few minitus and the color cloer this methods is accrate cough for most purposes kits(P^H) containg the necelfory chemicals and colorchals are aavialble from garden stores the amy be considerable variation in the soil P^H from one spot in a field or lawn to another tp determine the average saol P^H of a field or lawn its is necessary to collect soil fro, sekval

locations and Combine into one sample. The effect of soil P^H great on the Golubility of minerals or nutrients, fourteen of the Seventeen essential plant nutrients are obtained from the soil, before a nutrient can be used by plants in must be dissolved in the soil solution, most minerals and nutrients are more soluble or available in alid soils than in neutral or slight alkaline soil.

phosphorus is never readily soluble in the soil but is most available in soil with a P^H lenge centered around 6.5 extremely and strongly acid soils (PH 4.0-5.0) can have

high concentrations of soluble aluminum, Iron and manganess which may be topic to the growth of some plants, A P^H renge of apprarimately 6 to tary promotes the most ready availability of plant nutrients. But some plants, such as azaleal, roodendrons, blucherries, white potatoes and canifertrels, talerate, strong acid soils and conifer trees, tolerate strong acid soils and grow well also some plants do well only in slightly acid to moderately alkaline soils. However a slightly alkaline (P^H 7.4-7.8) higher PH soil can cause a problem with the availability of Iron to pin oak and a few other trees in central new

your causing chlorosis of the lowers, which will put the tree under stress leading to tree decline and eventual morality.

The soil p^H can also influence plant growth by its effect on activity of beneficial microorganisms Bacteria that decompose soil organic matter are hindered in strong acid soil. This prevents organic matter from breaking down, resulting in an accumulation of organic matter and the tic up of nutrients, particular nitrogen that are held in the organic matter,

Soils tend to become acidic as a result of

1) rainwater leaching away basic ions calcium magnesium, Potassium and sodiam

2)Carbon dioxide forms decomposing organic matter and root respiration dissolving in soil water to form a weak organic acid

3) formation of strong organic and inorganic acids. Such as nitric and sulphuric acid from decaying organic matter and oxidation of ammonium and sulphur fertilizer, strongly acid soil are usually the result of action of the strong organic! The and inorganic acids.

Lime is usually added to acid soil to increase soil pH, the addition of lime not Only replaces hydrogen ins and raises soil pH there of eliminating most major pH, thereby crime Problems associated

REVIEW OF LITERATURE.

for the realization of the topic of research, relevant information in the international scientific arena was collected through studies of diverse literature from text books/ literature International scientific Journals, environmental progress report from different agencies Internet websites reports by governmental agencies, substantial knowledge was gather review of what other scientist written on issues concurring with the a last literature review have research topic is made, was then undertaken to gather information on the research in the field soil in different area.

Rhoades JD. et al. 1999. 5tudied the soil salinity in. electrical conductivity method bulks and assessed the by more Practical which is based on direct measurements of bulks soil electrical conductivity (EC) made upon undistubed soils using geophysical

this methodology is especially well suited for Intensive mapping and monitoring

Challa oet al (2000) Charactreid and classified four representative problematic Vertisols occurring on upper and lower Maharashtra Plateau distributed in continuously irrigated zone of Ahmed Nagar And Akola districts under-semi-and ecosystem Khandwad and Kadambhe soils of Piedmont plain are dark grayish brown while Amalnar and Valpi oils of flood plain are dark yellowish browncolor Amalha and valpi soils of flood showed higher Calcium Carbonate content than the other soils.

Sankaram Ayala and E. V. S. Prakasa Rao 2002. In "Perspectives of soil fertility management with a focus on fertilizer use for crop productivity" have mentioned the need of Agricultural development strategy for India in the 21st century through increasing productivity of the land under cultivation, with reduced costs of production and efficiency of inputs with no harm to the environmental quality. They have me use 2/8 prime requisite, the promotion of health of the soil-plant-environment system to tom economic exploitation under overuse and abuse of the inputs as if with impurity. To this end, a new strategy of promoting ecotechnologies, a blend of traditional practice and modern advances (as agro-ecosystems) replaces existing methods to eliminate its grave consequences. This is the agro-ecosystem management, a prudent design for economic viability of the farmer and ecological sustainability of crop yields they have exhibited a farmers land health card which actually is important for the farmers but its use is not in practice.

Soil Survey and Soil Testing Department (2002) Land report. The information about the soil types of various talukas of Pune district is given. There is a mention about shallow clay soils etc. But by the correct mention by analytical study is necessary.[

Shaik. N. M. et. al. 2004.Studied Information and Communication Technology in agricultural development by three ICT projects in Maharashtra Madhya Pradesh and Andhra Pradesh. Their study describes the organisation of each project; discusses the types of farmers involved and assesses their utilization of the services; and looks at the backgrounds and performance of the functionaries who manage the projects. The projects studied varied with respect to the type of services provided, but these included marketing information, extension advice, information about rural development programmes, and other information from government and private sources.[30]

Sreevani A. et.al.2004. Studied. Arbuscular mycorrhizal (AM) fungi supporting the rhizosphere soils of tomato (Lycopersicomesculentum Mill.) and their relation to some soil physico-chemical characters. They surveyed ten soils, all of them were sandy loam type and most of them were deficient in N, P, K and other nutrients. A total of 20 different AM fungal species belonging to 5 genera i.e. Acaulospora, Entrophosphora, Gigaspora, Glomus and Sclerocystis were observed. Among the fungi, the genus Glomus is represented by seven species namely G. fasciculatum, G. hoi, G. halon, G. monosporum, G. mosseae, G. reticulata and G. aggregatum, Acaulospora by six species namely A.dilatata, A. laevis, A. mellea, A. morrowide, A. nicolsonii and A. rehmii; Sclerocystis by three species namely S. pakistanica, S. sinuosa and S. microcarpa and one species each of Entrophosphora i.e., E. schenckiiand

Gigaspora, G. margarita. Among the ten localities studied, Osmania University Botanical Garden and Shamshabad were found to have a greater number of AM fungi. Soils with neutral to slightly alkaline pH (pH 7 to pH 8) had a greater number of AM fungal propagules Le, 1228 spores/100 g soil whereas alkaline soils with pH 8.5 to pH 9.5. (pH higher than 8.0) have not favoured mycorrhizal fungi. The

maximum number of spores (1228 spores/100 g soil) of AM fungi was obtained in soils with more than 30% of moisture content. However, soils with less than 20% of moisture did not support the growth of AM fungi (419 spores/100g soil). Soils, which are nutritionally deficient in zinc, copper, nitrogen, phosphorus and potassium were observed to have a greater number of AM fungal propagules (1228 spores/100g soil). On the other, the soils with high levels of the above ned

nutrients inhibited the population of AM fungi (419 spores/100g soil)

Bouma, J.; Scott, C. 2006. The possibilities for dryland crop yield imprin India's semiarid regions: Observations from the field. Comprehensive Assessment discussion paper no. 3. Colombo, Sri Lanka: Comprehensive Assessment Secretariat discussed that if dry land crop yields are to improve at a broader scale, interventions might be needed to change dryland crop production from a default option to a positive choice. This would not only require changes in the broader incentive structure, like market prices and household demand, it would possibly require local water demand management as well. Since, without access to irrigation the risks of dryland production in population-dense India are simply too large, water use needs to be spread more evenly and its use managed within the limits of natural and artificial recharge. However, regulating local (ground) water use is notoriously difficult and it seems unlikely that local water demand management would become a reality soon. Hence, with unequal access to resources, to improve the productivity of dryland agriculture larger interventions are needed than merely investments in soil and water conservation. What these interventions should be remains open as further research would need to be done, but instead of a pure focus on physical potential, farmers' interviews suggest that the socio-economic constraints for dryland production need more attention as well.[8]

WajahatNazifSajidaPerveen and IftikharSaleem. 2006. Carried out a study of the micronutrient status of soils of district Bhimber (Azad Jammu and Kashmir) at 30 different locations. The objective of the experiment was to study the status of micronutrients and their relationship with various physiochemical properties. Soil samples were collected at a depth of 0-30cm and analyzed for AB-DTPA extractable Iron, Copper, Zinc, Manganese and hot water soluble Boron. The AB-DTPA extractable Iron, Copper, Zinc and Manganese ranged

from 5.37-23.36, 0.59-4.38, 0.74-2.08 and 4.59-21.08 mg kg AB-DTPA extractable Iron, Copper and Manganese was found high in all sites while Zine was low in 26.66%, medium in 70% and high in 3.34% sites. Hot water soluble (HWS) Boron ranged from 0.02-0.84mg kg Hot water soluble Boron was found low in 80% and medium in 20% sites. AB-DTPA extractable Iron and Manganese gave negative significant correlation with soil pH and lime content. Iron was positively significantly correlated with silt Copper, Zinc and hot water soluble Boron were positively significantly correlated with organic matter. Both Iron and hot water soluble Boron gave negative significant correlation with sand. Other physiochemical properties of soil showed either negative or positive non-significant correlation with micronutrient during the study.[34]

Vinay L.2007. Characterization and classification of soil resource of Bhanapur

microwatershed (Koppal district) for land evaluation. According to his findings soils were sandy and clayey in nature with low and high water holding capacity respectively. The pH. organic carbon and bulk density of soils showed irregular trend with depth, wh carbon decreased with depths. The soils were acidic to alkaline in nature and increased with depth in few pedons. Whereas, calcium carbonate content varied throughout the depth of profiles. Calcium and magnesium were the dominant exchangeable cations followed by sodium and potassium. The black pedons under study

were classified as very fine, clayey, montmorollite, calcareous, isohyperthermie, TypicHaplusterts, and red soil pedons belonged to Entisols and Alfisols. Pedon 1 was classified as fine silty, mixed isohyperthermic, deep Ustifluent. The pedons 2, 3 and 4 were classified as loamy, mixed, isohyperthermic, psammaticHaplustalfs. The pedon 5 was TypicHaplustalf and mapped into six mapping units by GIS technique. Land capability classification showed that majority of soils belonged to class III and IV lands with limitations of erosion, wetness and soil properties. Soil site suitability evaluation for wheat, cotton, sorghum, sunflower, maize and pearl millet showed that soils were moderately (S2) and marginally suitable ($3) for these crops. Groundnut and pigeon pea are moderately (S3) and some crops like paddy, wheat and potato were not suitable. The mapping of available nutrient status by GIS technique indicated that majority of the area was low to medium with respect to available N, P. K and S. Among the micronutrients, zinc was the major constraint followed by copper and the selected area was rich in iron and manganese content. nic

Research progress Report (2007-2011) Indian institute of Soil Sciences. Soil Biodiversity-Biofertilizers reports on launching of "Genetic Diversity of Rhizobia of Indian

Soils" 830 rhizobial strains of 20 major legumes were isolated and characterized. Work on 16s rDNA diversity in progress. Major programme on "Soil Genomics" for assessing structural and functional diversity of microorganisms in various soils (degraded, chemical and organic farming, pesticides pollution) launched. Clonal libraries of 16s rDNA and nif H. amoA sequenced for diversity analysis. It also reports microbial diversity of submerged lands (Diara, Tal) in Eastern India, "Havelis' lands in Madhya Pradesh and in rice soils of NEH region explored and effective strains of biofertilizer organisms cultured and deployed. Also about Mycorrhizal diversity in upland rice soils in eastern India and of cyanobacteria in submerged rice soils (using molecular tools) which were assessed. Biofertilizer strains with PGPR activity to withstand abiotic stresses identified. It reports about Bionutrient package for rice in Bihar, soybean and rabi pulses in Madhya Pradesh; aerobic rice in Tamilnadu; groundnut in Saurashtra: groundnut, pigenpea and maize in Andhra Pradesh:, sweet sorghum in Maharashtra; millets, fodder and vegetables in Orissa which showed improved yields, nutrient savings, improvement in fertilizer use efficiency and improvement in quality of produce also about Liquid Biofertilizer Technology and delivery systems of inoculants further refined. Further it reports for Biocontrol and Biofertilizer agents developed for temperate vegetables and fruit crops. The Front line demonstrations carried out on biofertilizers in tribal areas of Orissa and Madhya Pradesh and in resource poor farmers in Maharashtra, Tamilnadu, and Bihar launched, and Biofertilizer production from effective microbial cultures of the project during 2007-11.[27]

Ramesh V, Wani et al. (2007) conducted study to learn about the role of various agricultural practices on soil nutrient dynamics and its relationship with SOC in various land use systems of semi-arid tropics (SAT). They observed that irrespective of bioclimatic zones. land use under horticultural and agricultural systems in general, and paddy systems in particular, bad maximum content of organic carbon and total N. The soil parameter 171ay fraction also influenced the total N and total P, and hence organic carbon in black and red soils showed significant positive correlation with total N and P. Results indicated that perennials could sequester carbon better when compared to annual crops. The nutrient stocks and soil organic C and N ratio (carbon/nitrogen C: N), and carbon/phosphorus (C:P) were computed in addition to SOC for the purpose of identifying the maintained soil quality. It was observed that the C:N ratio varied from 16:1 to 22:1 under different zones and it was highest

and lowest under semiarid zones. The C: N ratio of studied soils under various systems was wider than commonly accepted values reported for other tropical soils.[25]

K.V. ChethanKumaret. al. 2008. Studied the AM fungal association in Sidacardifolia from different parts of Karnataka. They determined AM colonization in the roots, spore load and Phosphatase activity in the root zone soil collected from different parts of Karnataka and found AM root colonization more in the roots of Sidacardifolia collected from Kolar and least in case of root samples collected from Tumkur. They found that soil collected from Kolar had a highest spore density and least spore density was observed in case of soils collected from Mandya. Alkaline phosphatase activity of the rhizosphere soils collected from Tumkur was more compared to other four locations. Acid phosphatase activity was high in Kolar soils. Phosphatase activity was much related to AM fungal activity. They found that there were 64 isolates comprising 15 species of AM fungi Important genera of AM fungi as Glomus, Acaulospora and Scutellospora Genus Glomus was found to be more dominant in all the locations. Acaulosporalacunosa, Glomus melanosporus, Glomus fulvum and Glomus fasciculatum were the dominant species prevalent. AM fungal diversity in the rhizosphere soils of Sidacardifolia was highest in Hassan and least in case of Bangalore.[19]

Dr.Balasaheb D. Ghodke(2009) in the article Determination of Agricultural Productivity in Daundtahasil of Pune District have mentioned about the attempt made to identify crop productivity regions and the factors involved in it The study aimed at computing of crop productivity for Daundtahsil having diversity in soil, local relief and irrigation. The region exhibits rolling plain with local undulations sloping at north. Hill range passes in east west direction in south. The productivity data, at village level has been collected during fieldwork both on yield and acreage for the selected major crops in selected villages. This data has be utilized to obtain crop productivity for six villages. These villages are repr

tahsil. These villages are 1) Koregaon, 2) Tamhanwadi, 3) KusegaonadiMergalwadi and 6) Watluj. Productivity of Jowar- Local topography, soil type and rainfa distribution influence the productivity of jowar. Least productivity is recorded in the central part in the village Mergalwadi where soil is coarse shallow to medium black. Jowar is Rabi crop requires less amount of water. It is a drought resistant crop. Village Koregaon and Wathuj situated in the north and east shows high productivity the productivity pattern of jowar has increasing trend toward east and west. Variation of soil type, local relief and rainfall changes in productivity in the west and east part. Productivity of Sugarcane- Sugarcane is long duration crop grown in medium black and deep black soil with assured supply of irrigation. The highest productivity of sugarcane is in Watluj (132.260) situated in the eastern

Method: - To find the PH value of clay, Solution: - Use the module as a modifier and select the check key, notebook or pen. Please help improve this article or section by expanding it.

Result: -

If you want to know more about this search topic, please contact PH Viluva in the PH file in the database or in the PH file in the PH file.

Colony. Soil PH Value

*Indra Nagar. : -9.3

*Gaud Shankar: - 8.5

* K.K Colony. : -8.5

** Housing Board -2:- 8.2

* Srinivasa Nagar. : - 8.2

Badepalli. :- 8:2

*Avancha Road. : - 8:

Most of the above functions in turned out to

be blue.

My opinion: -

The pH value of the door can be found through this project. Ay mattientha PH kaligivundiani naaku oka avagaahana vachindi ippativaraku nenu sekarinchina mothamvidhulalonimatti PH aadaramgaekkuvagakonnividhilalomattisekarinchinatharvaata aa vidhikichendhinamattikavar

paina aa vidhiperusamayam date ninamoduchesamualaagenenusekarinchinamattinimaakalashaalalokitheesukellimattiloni PH viluvanu I took it to find out. Please help improve this article or section by expanding it. I look forward to hearing from you soon, but I'm still trying to find a solution to the problem. Please help improve this article or section by expanding it. tharvaata aa neetirangu has been changed to different colors like red, green, yellow, blue.

Referance :=

*. Thomas "Soil pH and soil Acidity" Methods of soil Analysis. SSSA. Book Series. PP. 475-490

*. Slessare. E.W.; Lin. Y:Bingham, N.L; Johnson, J.G: Dai y; Schimed. J.P: Chadwick, O. A C11 November 2016) "water balance creates a threshold in soil pH at

the global scale"

* lab orucensland Department of Enviroment and Heritaga protection "soil PH Www.qld. 15 may gov.au. Retrieved 15 2017

* Soid survey Division staff, "soil survey manual 1993. Chapter 3" Soil Conservation service, u.s Department of Agriculture Handbooks 18.

Retrieved 2017-05-15

* Bargrizan, sima: smerniks. Rohald J.: moslay Luke (November 2017)

USDA-NRCS, sal PH Guides for Educators: Soil oxuality kit, www.nres.cusda

-eved

15 may 2017.

* USDA-NRCS Soil PH Guides for Educators; Soil Quality kit. www nocs.usda Retrieved 15 may 2017

* Sparks, Donald; Environmental soil 2003, Academic Press, London, UK Chemistry

+ US EPA. OAR (2016-02-09) "What is Acid Rain?" US EPA. Retrieved 2011-01-15.

* Brady, N, and weid, R. The Nature and Properties of soils 13th ed 2002

* Rout, Gr.R; samantaray,s; Das, P (January 2001) Aluminium toricity in Plants

a review "Agronomic 21

*shavrukov, yusi, Hiral Yoshihiko (January 2016)

Trung, Email (1946). "The Liming soils" Science in farming USDA yearbooks 1941-1947

PP. 566-576

* Ellis. Boyd, foth Henry (2017-03-09) soil fertility Second fertility second edition sodic soils

Plantsinaction, science, ut.edu, au Retrieved 19 may 2017.

*Soil Quality Indicators: PH NCRS, USDA

solutions to soil problems; High pH extension Retrieved 2017-02-26

+ 190 Summer, malcalm&; yamadaTouioshi (November 2004) farming with acidity Communications in Soil Science and plant Analysis

& Rout, Gr. R. Samantaray 5: Das. P (January 2001) "Aluminium toricity in Plants

Cox, Loralic SOLUTIONS TO SOLL PROBLEros"

Trung Emil (1946) "The Liming of soils" Science

Cape JN (1 January 1993) Direct damage to vegatation caused by acid rain and polluted Cloud Definition of Cntical trees Levels Environmental pollution for forest

+ Oosterbaan, R.J 'soid Alkalinity (Alkaline-sole Soils)

AabDakara. Piero (21 July 2014) "O ccurrence

coreopsis, effects, recommended intake and Possible dietary use of selected trace compounds

Hansson, Karna; Olsson Bengt A; olsson, mats;

Johansson, Olf: Kleja, Dan Berggren (August 2011 Differences in said proper -tier in adjacent stands of Scots Pine, Norweg spruce and silver birch in SW Sweden' forest.