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Improvement of Plant Quality in Sagaon Village

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Abstract:

Making use of any organic matter, including alcohol in industry waste (spent wash) is used in the shiralaTehsil region in sagaonvillage. To study investigate the effect of spent wash on maize crop. The spent wash treatment consisted near about per 15 days. The chemical characteristics on soil compaction measurements through electrical conductivity in geometrical investigations. The pH value of soil sample is also taken to obtain the chemical characterization of soil. Boththecharacterization study important for improvement of soil quality and productivity. It shows that positive result. This positive was found in the maize crop. This study has been into this topic. (15,16,17,18,19,20)

Keywords: Soil Fertility, chemical characteristics.

Introduction

Maize is the most important cereal crop next to wheat and rice in the world. In India, it ranks fourth after rice, wheat and sugarcane. Mize is cultivated in all the seasons' viz., kharif, rabbi and summer with a production of 14.71 million tons from 7.23 million hectare area with productivity of 19.04 quintals per hectare.

Under the present trend of exploitive agriculture in India, inherent soil fertility can no longer be maintained on the sustainable basis. It is said that nutrient supplying capacity of soil declines steadily under continuous and intensive cropping system. The use of optimum levels of N, P and K failed to maintain yield levels probably due to increasing secondary and micronutrient deficiencies and also unfavorable alterations in the physical and chemical properties of soil.

The disposal of waste water from industrial source is becoming a serious problem throughout the world. One of the most important environmental problems faced by the world is management of waste water. Different industries creating a variety of waste.Water pollutants which difficult and costly to treat.The use of industrial waste water as soil. In India approximately 110 million of distillery of spent wash are discharged and used for soil. Plants require nutrients to grow fertilizer in to high concentration can also affect plant function thousandsof acres have been lost from production in this way. But applied in the farmer's field particularly in dryland as a source of plant nutrient & irrigation water.

Soil salinity has been measured using electrical conductivity for more than 100 years. In 1940 the accepted method for determining soil salinity. The plant grows best pH between pH 7 & pH 9. (15,16,17,18,19,20)

METHODS OF ANALYSIS:

1) **Collection of the Sample:** Sample is collected as per the recommended procedure. [1,2,3]

2) **Required Chemicals**: All of the chemicals are prepared as per the recommended procedure. All of the chemicals are used AR grade. [10]

3) **Instruments**:[9]

a) PH meters- Model EQ-610

b) Conductivity Meter- Model EG-660

c) Simple meter scale

ANALYZED RESULTS:

The samples are collected as per the recommended procedure andoriginal sample taken from analysis the results are found these results areas given below –[3,5,8,12,13,14]

observation table No. 1

Days	Without spent wash 10^{-3}Mhos	With Spent Wash 10^{-3}Mhos
1	0.25	0.25
2	0.28	0.25
3	0.23	0.22
4	0.24	0.19
5	0.21	0.19
6	0.24	0.22
7	0.25	0.23
8	0.20	0.22
9	0.22	0.20
10	0.25	0.20
11	0.23	0.20
12	0.23	0.19

Graph:1

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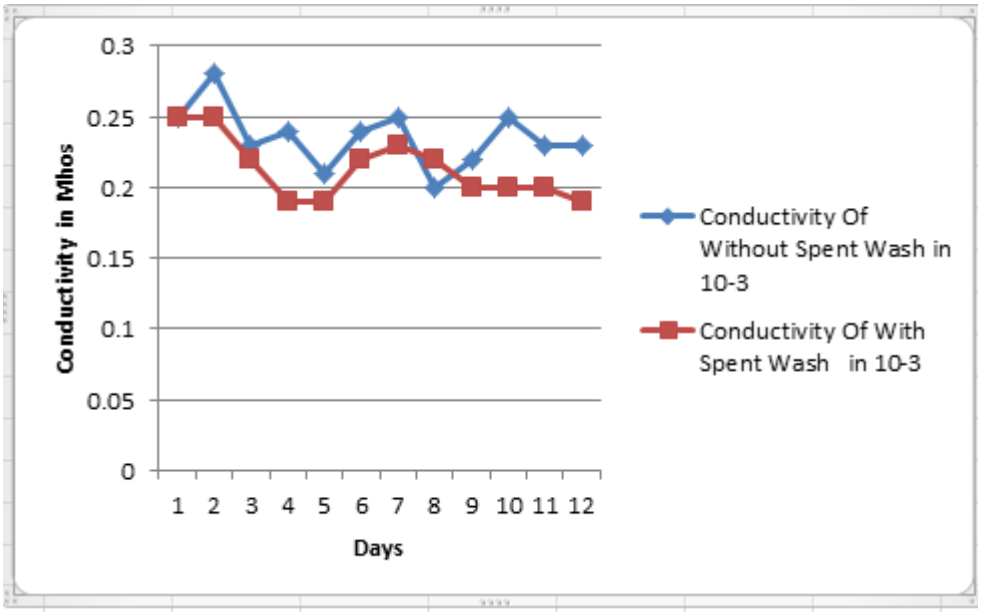

observation table No. 2:

Day	without spent wash	with spent wash
1	6.54	6.50
2	6.57	6.48
3	6.61	6.63
4	6.63	6.60
5	6.69	6.5
6	6.74	6.51
7	6.79	6.4
8	6.84	6.38
9	6.88	6.21
10	6.92	5.92
11	6.96	5.81
12	7.2	5.67
13	7.4	5.61
14	7.7	5.53

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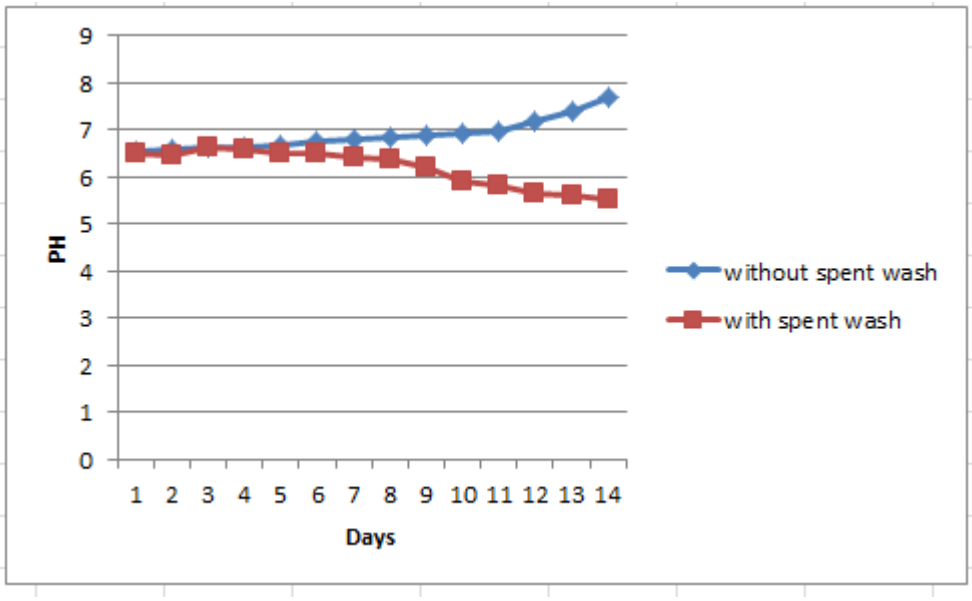
Graph: 2



observation table No. 3

Days	Length in cm With Spent Wash	Length in Cm without spent wash
1	–	–
2	9.6	9.4
3	16.0	14.3
4	22.9	20.4
5	30.9	28.9
6	36.6	38.3
7	52.4	48.4
8	63.8	61.1
9	75.9	72.1
10	89.9	85.6
11	103.1	99.9
12	128.3	120.8
13	149.2	140.8
14	151.3	143.5

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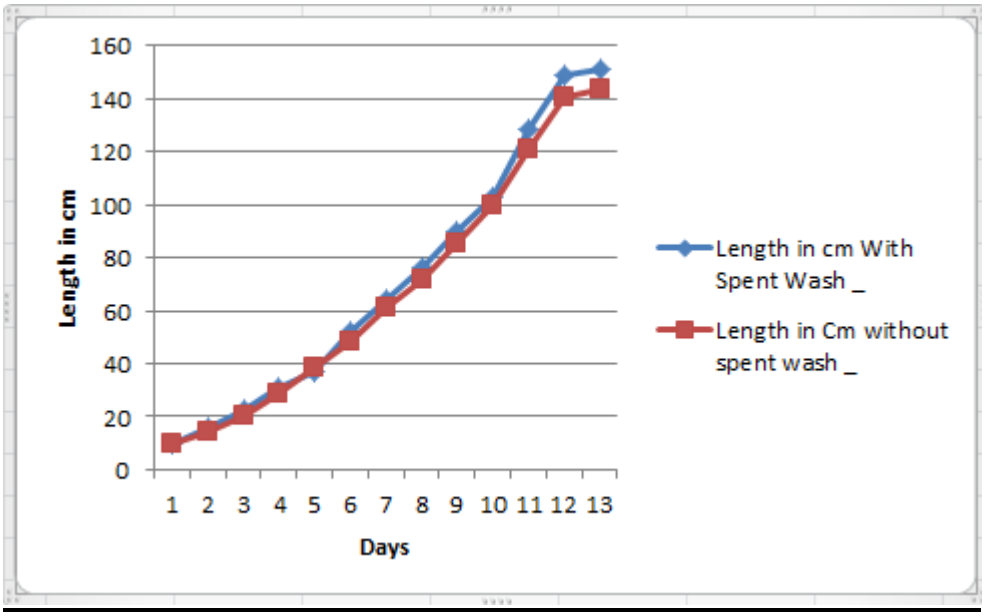
Graph: 3



Productivity :-

After the 3 and ½ Month crops have matured then It harvested and to select in each plot4 maize crops and it weighed to observe that the difference between the productivity. This data has been mentioned in observation table.

observation table No. 4

Maize Wt. in gm

Sample	MaizeWt.
Without spent wash	200.137
With spent wash	305.320

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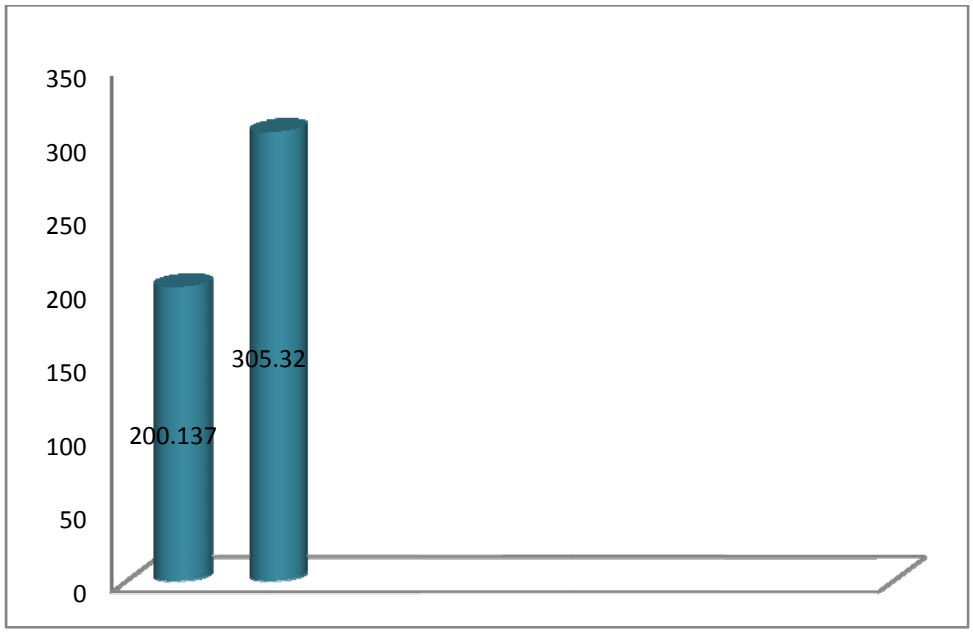
Graph: 4



RESULT

The result obtained in the investigation entitled "Response of maize to spent wash are discussed with basically spent wash as a source of nutrient, its effects on growth, yield on soil properties during the crop season and over the season.

As per the observation pH value is mentioned in observation table no. 1 & graph is plotted. pH against days graph no. slight variation should be occurs in pH any one effect should be observed on plant growth. The comparative data in observation table as well as in graph.Should be done.

In the table no. 2 the conductivity of soil variation comparative data spent wash and without spent is given by using the same data days against the conductivity graph is plotted. In these graphs variation should be observed & spent wash plots conductivity increases as compare to the without spent wash plot. But the positive effect should be observed on plant growth as well as productivity.

In every week height of maize crop measured and these heights of plot A and Plot B means spent wash and without spent wash is measured large amount of diff. should be observed in the height. With the help of obs. Table and graph these things are mentioned.

Then the productivity comparison should be done both plots A and B. Four maize crops in each plot have taken separately and harvested it and weighed max. amount of diff. should observed the spent wash plot weight is higher than that of without spent wash plot. These data have mentioned in table and fig.

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REFERENCES:

1. http://www.iiasa.ac.at/Research/LUC/External-World-soildatabase/HTML/

2. ftp://ftp.fao.org/agl/agll/docs/guidel_soil_descr.pdf

3. Van Reeuwijk, LP 2002. Procedures for soil analysis (6th ed.).Technical Paper 9, ISRIC, Wageningen(http://www.isric.org/Isric/Webdocs/Docs/ISRIC_TechPap09_2002.pdf)

4. Van Reeuwijk LP 1998. Guidelines for quality management in soiland plant laboratories, FAO, Rome(http://www.fao.org/docrep/W7295E/W7295E00.htm)

5.Smit AL, Bindraban PS, Schröder SJJ, Conijn JG and van der MeerHG, 2009. Phosphorus in agriculture: Global resources, trends anddevelopments. Report to the Steering Committee TechnologyAssessment of the Ministry of Agriculture, Nature and Food Quality,The Netherlands. Report 282, Plant Research International incollaboration with the Nutrient Flow Task Group (NFTG),http://edepot.wur.nl/12571

6. Report on the first meeting of the Advisory Panel of theInternational Museum of Soil Standards, a joint project of UNESCOandThe Netherlands, 1967

7. van Reeuwijk LP 2002. Procedures for soil analysis (6th ed.)Technical Paper 9, ISRIC, Wageningen

8. USDA-NRCS 2004. Soil Survey Laboratory Manual Soil SurveyInvestigations Report 42 (ver. 4.0), USDA-National ResourcesConservation Service, Washington.

9. Instrumental methods of analysis. Hobert H. Willard, Lynne L.Merritt, Jr.

10. Text book of practical organic Chemistry – A. I. Vogels

11. Murugaragavan, R., 2002. Distillery spent wash on crop production in dry land soils. M.Sc. Thesis, Tamil Nadu Agric. Univ.,Coimbatore.

12. Effect of spent wash on red soil in shiralaTahsilDist-sangli ,M.S.India Entire Research ,Vol.-4, Issue- 6 ,Thane, October 2012.

13. Effect of spent wash on black soil in shiralaTahsil Dist. sangliM.S. India Entire Research, Vol.-1, Issue- 1 ,Thane, January 2013

ISSN 2348 – 7968

14. Red soil quality improved by using the spent wash. OnlineInternational Inter disciplinary Research Journal,(BI-monthly)ISSN : 2249-9598,volume III,Issue- VI,Nov-Dec 2013.

15.**Effect** of cyclic phytoremediation with different wetland **plants** on municipal wastewater M Farid, M Irshad, M Fawad, Z Ali, AE Eneji… - International Journal …, 2014 - Taylor & Francis

16. Pseudomonas fluorescens JH 70-4 promotes Pb stabilization and early seedling **growth** of Sudan grass in contaminated mining site soilJ Shim, AG Babu, P Velmurugan… - Environmental …, 2014 - Taylor & Francis

17.**Effect** of Nutrient Solution **pH** on the Vegetative and Reproductive **Growth** and Physiological Characteristics of Rose Cv.'Grand Gala'in Hydroponic SystemHRRoosta, I Rezaei - Journal of **Plant** Nutrition, 2014 - Taylor & Francis

18.Effect of cyclic phytoremediation with different wetland **plants** on municipal wastewater M Farid, M Irshad, M Fawad, Z Ali, AE Eneji… - International Journal …, 2014 - Taylor & Francis

19.[PDF] from innspub.net**[PDF] Impact** of selected industrial effluents on morphological and biochemical characteristics of Brassica juncea.S Ali, SZ Shah, WM Khan, M Zahid, W Murad… - International Journal of …, 2014 - innspub.net

20.Modelling **electrical conductivity** of soil from backscattering coefficient of microwave remotely sensed data using artificial neural networkWPhonphan, NK Tripathi, T Tipdecho… - Geocarto …, 2014 - Taylor & Francis