



IMPROVING BLACK SOIL QUALITY BY USING SPENT WASH

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ABSTRACT:

The analysis must base fertilizer divisions on the probability of yield response to fertilizer. Soil tests indicate relative elements of micro nutrient availability at the time of sampling. While spent wash was given the to increase elements of micro nutrients in the soil, means it shows that there is improvement in soil fertility in the year two time spent wash given due to this reason less amount. Fertilizer required it productivity also increases the increases in elements [4,5,11,12,13]

Keywords: *Soil; Fertility; Micronutrients.*

INTRODUCTION:

Farmers practicing precision agriculture can now collect more detailed information about the spatial characteristics of their farming operations than ever before. Because the components of soil can vary widely. Soils are divided into different groups no two soils are the same even if they in the same general classification. The composition of the soil will vary depending on the physical and chemical composition (factors) which vary due to location. In this area three different types soils were observed each of soil taken for analysis from this soil one soil selected it before one year because large need food grains as well as large amount of costly fertilizers are given to soil for productivity increases. But expenditure and productivity value are compared then less amount. In this paper collected soil samples are kept in tray spent was given in the year than after one year sample analyzed it. It shows that total amount of constant was increased and things have been maintained into this paper [1, 6, 11, 14]

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) Atomic Absorption Spectro Photo Meter-Model
 - d) Spectro Photo Meter-

ANALYZED RESULTS:

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

Table 1

Sr.No	Parameter	Unit	Observed value	Limit
1.	pH		7.44	6.5-8.5
2	E-Conductivity	Mmhos/cm	.16	<4.0
3.	Nitrogen	Kg/ha	55.71	100-200
4.	Phosphorous	Kg/ha	22.82	30-40
5.	Potassium	Kg/h	235	110-280
6.	Sulphur	Kg/ha	175	114-1823
7.	Calcium	%	0.94	0.1-3.2
8.	Magnesium	%	0.10	0.1-0.3
9	Organic Carbon	%	0.72	>0.50
10	Iron	ppm	2.36	2.5-4.5
11	Manganese	ppm	0.30	1.0-2.0
12	Zinc	ppm	0.46	0.5-1.2
13	Copper	Ppm	0.35	0.3-0.5
14	Chloride	ppm	152	141-425

The selected soil sample taken and spent wash was sprayed on it and then after one year sample dried and given analysed the following results are found[3,5,8,12,13,14]

Table 2

Sr.No	Parameter	Unit	Sprayed Observed value	Limit
1.	pH		7.8	6.5-8.5
2	E-Conductivity	Mmhos/cm	13.15	<4.0
3.	Nitrogen	Kg/ha	671	100-200
4.	Phosphorous	Kg/ha	66	30-40
5.	Potassium	Kg/h	488	110-280
6.	Sulphur	Kg/ha	335	114-1823
7.	Calcium	%	3.50	0.1-3.2
8.	Magnesium	%	0.15	0.1-0.3
9	Organic Carbon	%	0.96	>0.50
10	Iron	ppm	6.0	2.5-4.5
11	Manganese	ppm	3.50	1.0-2.0
12	Zinc	ppm	1.09	0.5-1.2
13	Copper	ppm	4.01	0.3-0.5
14	Chloride	ppm	709	141-425

The results of original sample table 1 and results of sprayed sample table 2 and standard value results all of these results are compared as given below

Table 3

Sr.No	Parameter	Unit	Observed value	Sprayed Observed value	Limit
1.	pH		7.44	7.8	6.5-8.5
2	E-Conductivity	Mmhos/cm	0.16	13.15	<4.0
3.	Nitrogen	Kg/ha	55.71	671	100-200
4.	Phosphorous	Kg/ha	22.82	66	30-40
5.	Potassium	Kg/h	235	488	110-280
6.	Sulphur	Kg/ha	175	335	114-1823
7.	Calcium	%	0.94	3.50	0.1-3.2
8.	Magnesium	%	0.10	0.15	0.1-0.3
9	Organic Carbon	%	0.72	0.96	>0.50
10	Iron	ppm	2.36	6.0	2.5-4.5
11	Manganese	ppm	0.30	3.50	1.0-2.0
12	Zinc	ppm	0.46	1.09	0.5-1.2
13	Copper	ppm	0.35	4.01	0.3-0.5
14	Chloride	ppm	152	709	141-425

Sprayed sample results comparing the results of original sample as well as standard limit value. In these results some difference is observed

in these values. These difference is maintained on table no.4[3,4,5,8,12,13,14].

Table 4

Sr.No	Parameter	Unit	Increasing value	Limit
1.	pH		0.36	6.5-8.5
2	E-Conductivity	Mmhos/cm	12.99	<4.0
3.	Nitrogen	Kg/ha	615.29	100-200
4.	Phosphorous	Kg/ha	43.18	30-40
5.	Potassium	Kg/h	253	110-280
6.	Sulphur	Kg/ha	160	114-1823
7.	Calcium	%	2.56	0.1-3.2
8.	Magnesium	%	0.05	0.1-0.3
9	Organic Carbon	%	0.24	>0.50
10	Iron	ppm	3.64	2.5-4.5
11	Manganese	ppm	3.20	1.0-2.0
12	Zinc	ppm	0.63	0.5-1.2
13	Copper	ppm	3.66	0.3-0.5
14	Chloride	ppm	557	141-425

CONCLUSION:

Initially all parameters of soil sample are analyzed .These observed parameters and its value are pH, e.conductivity, nitrogen, phosphorous, potassium, sulphur 7.44, 0.16, 55.71, 22.82, 235, 175 kg/ha and calcium, magnesium, organic carbon 0.94, 0.10, 0.72% as well as microelements are saw iron, manganese, zinc, copper, chloride its value 2.36, 0.30, 0.46, 0.35, 152 ppm (table no.1).

Then spent wash was sprayed on the soil and after one year sample analysed all of these parameters values are pH, e-conductivity, nitrogen, phosphorous, potassium, sulphur, 7.8, 13.15, 671, 66, 488, 335 kg/ha and calcium, magnesium, organic carbon 3.50, 0.15, 0.96% as well as microelements are analyzed iron, manganese, zinc, copper, chloride the value was found 6.0, 3.50, 1.09, 4.01, 709 ppm (table no.2).

If we are compare the initial original, sample value and after spraying spent wash value some difference was observed.(table no. 3) All of these value have less than that of standard limiting value. In table no.4 total growth of constant analyzed it.

All of these above observation conclusion is made initial sample w value(before spraying spent wash) we less than that of standard limiting value, and after spraying spent wash on sample the value was found to be

higher than that of initial value but less than the limiting standard value pH 0.36, e-conductivity 12.99 M mhos/cm. Nitrogen, phosphorous, potassium, sulphur -615.29, 43.18, 253, 160 kg/ha. Calcium, magnesium, organic carbon 2.56, 0.05, 0.24% and micro elements iron, manganese, zinc, copper, chloride- 3.64, 3.20, 0.63, 3.66, 557 ppm this much amount of growth observed in all of the parameter, all of the parameters increases due this reason crop yield increases. Generally in this area soybean, sugarcane, rice, sunflower, maize crops etc. taken.

Again one of the most important thing is colour of the soil black but after spraying spent wash on them colour change slight yellowish and soil particles are bind tightly with each other means binding capacity soil increases.

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