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Statistical Analysis Comparision with Punjab and Rajasthan Soil

Abstract

The purpose of this intitutive study to investigate cancer incidence and its significance with the actual data collected from some regions of Punjab and Rajasthan Soil and after lab testing report it varyiable including demographic parameters of some regions of Punjab and some regions of rajasthan and its some regents of chemical are taken to intuitive study. Its main object to prevent from some dangerous illness to never is done from these types of impurities.

Keywords: Rajasthan, Punjab, Impurities, Sri Ganganagar, Abohar, Padampur, Chemical, Chi-Square, Null Hypothesis.

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Introduction

Actual soil report from Citrus Estate Badal from the laboratory for general health and kinnow health is given in the form of table in some districts head quarters or some villages . In the order to determine the chemical reaction also the range of magnesium, sulfur, phosphorous, ph, zinc etc. in between Moga, Malout, Abohar, Sardulgarh, Hindumalkot, Ganganagar, Bikaner and Padampur are very fluctuation in weather and temperature region of Punjab and Rajasthan. They did not match their weather condition we can see that the health care system in the both state are comparatively wrost . our motive is to find the fluctuated between their chemical reaction and quantity of fundamentals in analysed soil health and general soil health of paddy , wheat and cotton. very dangerous result are found that was critical position of health care system is going to prepare in the Punjab and Rajasthan by using fertilizers and chemicals to prevent reaps but not precaution to procure the soil of fertility reaps most of the Punjab and little bit of Rajasthan.

Highly resides pesticides namely Aldrin, calcium cyanide are used to prevention of reaps from various insects but these pesticides cause a cancer and other health disease like less immunity power, headache, swell of bones, deducing vision, deducing age factors, and other problems are occurred to not meeting to actual minerals through reaps so these factors are arises.

Review of Literature

This study indicates the trend for soil PH, soil phosphorus, soil sulfur, soil magnesium for cotton, rice/paddy and wheat. Many reaps can endure a wide range of soil pH when all other growing conditions are good. Some vegetation however, require a narrow range of soil pH for proper growth. The only way to determine if a soil is acid, neutral, or alkaline is with a soil test. The purpose of soil testing is to provide an accurate assessment of the soil's fertility status that can be used to make fertilizer and lime recommendations.

The routine soil test measures soil pH, phosphorus, potassium, calcium, magnesium, sodium, sulfur, copper, and zinc. The most important information on the soil test results and key indicator of soil health is the soil pH. Soil pH measures the acidity or alkalinity level of the soil. The pH of a soil has a significant effect on the availability of the different vegetation nutrients to the vegetation. Soil pH affects whether a given nutrient is more or less available to the vegetation. Vegetation absorb most nutrients from the soil through their roots. If vegetation do not have access to the micronutrients, they need because the soil pH is high, their growth will be suppressed and nutrient deficiency symptoms such as chlorosis (yellowing) may appear (Brady, 1974).

Soils can be naturally acid or alkaline, and this can be measured by testing their PH value. Soil pH is a measure of the acidity or alkalinity in soils. The relevance of soil pH is that it influences the chemical and biological reactions that take place in the soil, including the availability and uptake of essential vegetation nutrients (Doran J. W., 1994). In the pH ly

scale pH 7.0 is neutral. Below 7.0 is acidic and above 7.0 is basic or alkaline. Soil pH affects nutrients available for vegetation growth. In high acidic soil, aluminum and manganese can become more available and more toxic to vegetation while calcium, phosphorus and magnesium are less available to the vegetation. In highly alkaline soil, phosphorus and most micronutrients become less available. The pH value of soil is one of a number of environmental conditions that affects the quality of vegetation growth. The soil pH value directly affects nutrient availability (Jensen, 2013).

Sulfur is required for the synthesis of the sulfur-containing amino acids, which are essential for protein formation. Sulfur is also involved with the development of enzymes and vitamins as well as the promotion of nodulation for nitrogen fixation by legumes (Doran J. W., 1994). Sulfur is an essential nutrient for reap production, often ranked behind only nitrogen, phosphorus, and potassium in importance.

Sulfur is one of the 16 fundamentals essential to mereap production. It is typically considered a secondary macronutrient (along with calcium and magnesium), but is essential for maximum reap yield and quality. Sulfur is often ranked immediately behind nitrogen, phosphorus, and potassium in terms of importance to reap productivity. Sulfur is a component of the amino acids cysteine and methionine making it essential for protein synthesis in vegetation. Vegetation contain a large variety of other organic sulfur compounds, such as glutathione, sulfolipids and secondary sulfur compounds which play an important role in physiology and protection against environmental stress and pests. Sulfur fertility has historically not been a major concern for growers on most soils, as soil organic matter, atmospheric deposition, manure application and incidental sulfur contained in fertilizers have typically supplied sufficient sulfur for reap production. However, reductions in the amount of sulfur contributed by these factors combined with increased sulfur removal with greater reap yields have made sulfur deficiencies.

Aside from ammonium-based fertilizers and organic matter, aluminum sulfate and sulfur are common materials used for decreasing soil pH. Aluminum sulfate is preferred as it changes the soil pH as soon as it dissolves in the soil because of the aluminum. However, too much of this is toxic to vegetation. Sulfur takes some time to produce effect as it needs to be converted to sulfuric acid by soil bacteria.

We have gone through many researches and after evaluation of many journals for the literature of us. We have unable to find any another research or study after 2013.

Objective of Study

Actual motive of the study to show the evaluation of soil are in the dangerous point of health care system in all the soil managed by the farmers after using the fertilization and chemicals to male it worst. Our objectives of study to show that all the chemicals either in form of pesticides or weedicides are very harmful for health because of these are directly produce in the reaps and all are not eatable but it is either eaten by human being directly which cause dangerous health problems.

We are going to show by the hypothesis testing it cause very low minerals in the soil and other dangerous ingredients (chemicals) in the soil are very high and minerals are going to resolved by these chemicals and very fortunate this systems are completely abundant for the human being.

Health care system WHO (world health organization) already warn to the farmers to use less pesticides and chemicals to generate reaps but farmers are not taken it seriously and this made many problems to generation and also other disease are occupied the human being which maps very highly caused disease in the system. So we want to show that the levels of actual scenario which required in the soil are not meeting in actual position and they are going to up and down of actual scenario which generated by the health care system. The soil test summaries are of benefit to the agriculture agents that are responsible for making soil management recommendations to stay informed of changing soil properties and make necessary adjustments to their recommendations (Jensen, 2013). This information is vital part in the education of producers in the role of best management practices and encouraging environmental stewardship. The largest benefit to the producer is the reduction in the over application of fertilizer and unnecessary reap nutrients.

Research Methodology

Estimation of heavy metal contents plays a major role to assess the quality of soil and helps to set stringent regulatory limits by the government agencies. The level of Phosphorus (P), Magnesium (Mg), Sulfur (S) and PH values from soil collected from different regions/farms of Punjab and Rajasthan namely Moga, Malout, Abohar, Sardulgarh, Hindumalkot, Ganganagar, Bikaner and Padampur, Area under cultivation of Rice, Paddy and Wheat reaps.

Soils samples were self collected from various agriculture fields. Care was taken to ensure that no soil sample was collected from near roadsides or near a water channel. Soil testing samples were kept in high quality polymers which were water proof and leak proof (also precautions were made from air) Heavy metals and soil nutrients analysis was done at Citrus Estate Badal, Soil Testing Laboratory , Village Badal, District Sri Muktsar Sahib , Punjab.

Statistical Methods

The (χ2) test was first used by Karl Pearson in the year 1990. The (χ 2) describes the independency between the sub categories of two variables of r*c (Row*Column). The chi-square test is based on the difference between the observed and the expected values for each category. The chi square statistic is defined as

$$\chi 2 = \sum \frac{(\mathrm{O_i} - \mathrm{E_i})^2}{\mathrm{E_i}}$$

Where O_i is the observed number of cases in category i, and E_i is the expected number of cases in category i. This chi square statistic is obtained by calculating the difference between the observed

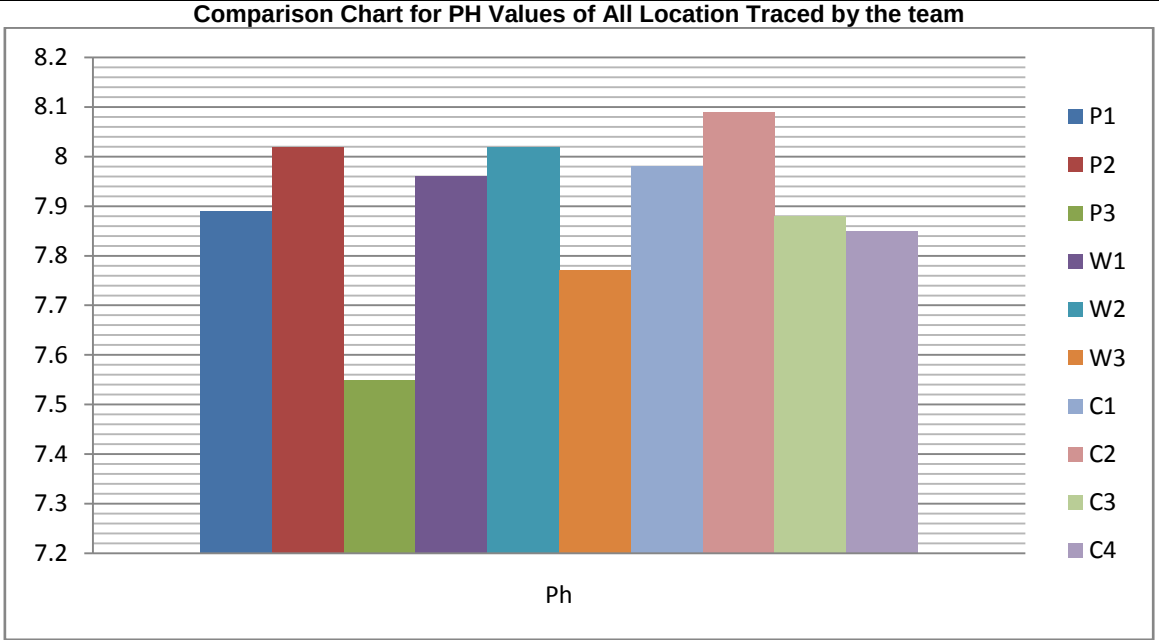
number of cases and the expected number of cases in each category. This difference is squared and divided by the expected number of cases in that category. The degree of freedom (d.*f*.) is obtained as:

d.*f*. = (n-1)

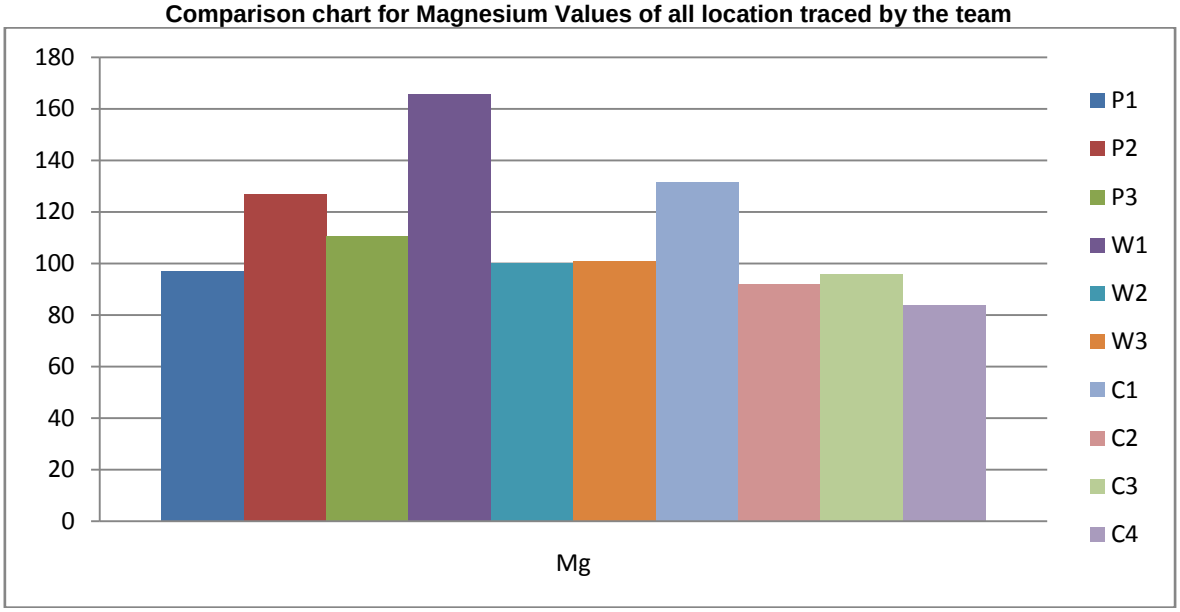
Table: PH Value, Phosphorous, Sulfur and Magnesium Data from Different Location

Location	Reap	Quantity of particular fundamentals in analysed soil			
		pH	Phosphorus (ppm)	Sulfur (ppm)	Magnesium (ppm)
Abohar	Paddy	8.02	80.0	56.5	126.7
	Cotton	8.09	124.6	36.1	92.1
Moga	Paddy	7.89	29.8	32.6	97.2
	Wheat	7.96	793.0	34.5	165.7
Malout	Wheat	8.02	27.0	81.0	100.2
Sardulgarh	Cotton	7.98	39.5	29.1	131.5
Hindumalkot	Cotton	7.85	43.3	27.3	83.7
Padampur	Cotton	7.88	37.0	35.5	95.9
Bikaner	Paddy	7.55	70.6	43.6	110.5
	Wheat	7.77	35.9	40.7	100.9

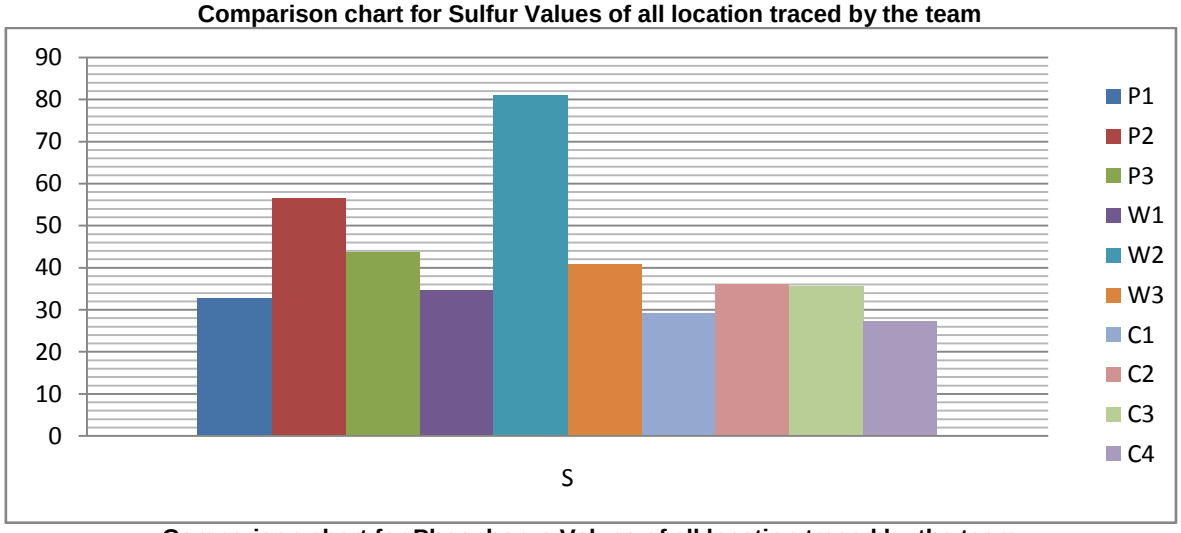
Comparison Chart for PH Values of All Location Traced by the team



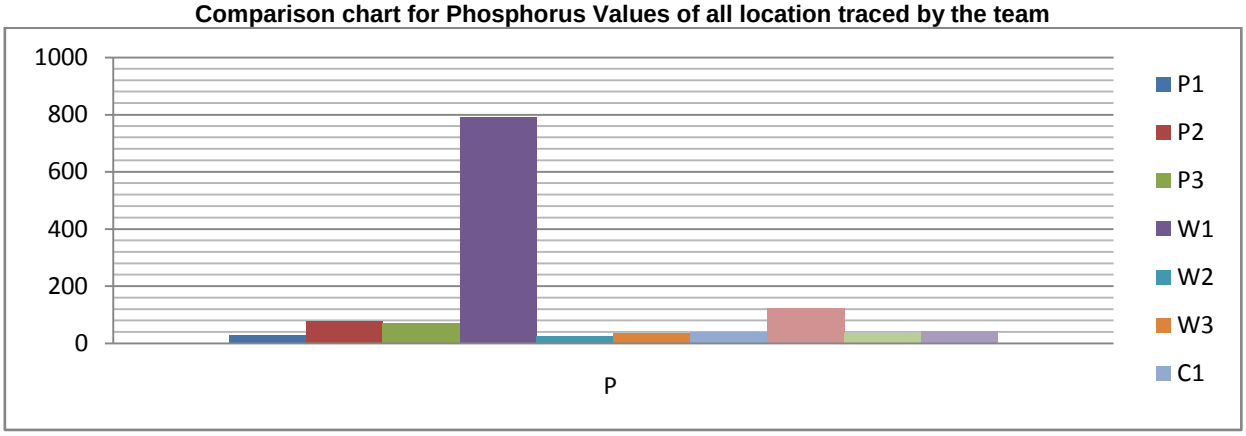
Comparison chart for Magnesium Values of all location traced by the team



Comparison chart for Sulfur Values of all location traced by the team



Comparison chart for Phosphorus Values of all location traced by the team



Hypothesis

Hypothesis seeks to ascertain whether there is a significant relation between actual values of soil nutrients (PH, phosphorous, magnesium, sulfur) in experimental values of lab testing and critical values provided by scientist minimum and maximum range of the value.

$H1_0$: There is not a relationship between the two variables (they are independent)

$H1_1$.: There is a relationship between the two variables (they are dependent)

Table 2: Results of Chi-Square test at 5% Level of Significance

Chi-square Test					
Variable	**Calculated Value**	**Level of Significance**	**Degree of Freedom**	**Tabulated Value**	**Result**
pH	0.756438	5%	9	16.22	Non-significant
Phosphorus (p)	71143.93	5%	9	16.22	Significant
Sulfur (S)	1202.92	5%	9	16.22	Significant
Magnesium (Mg)	52.198	5%	9	16.22	Significant

Conclusion

Finally conclude from above is:

As calculated value of pH is less than tabulated value (0.7564 < 16.22) at 5% level of significance. We have to accept null hypothesis ($H1_0$) and reject alternative hypothesis ($H1_1$).Its shows that there is no significant relation between soil pH and paddy-cotton-wheat reap. On the other hand, calculated value of Phosphorus (71143.9), Sulfur(1201.92), Magnesium(52.198) are more than tabulated value (16.22) at 5% level of significance. We have to reject null hypothesis ($H1_0$) and accept alternative hypothesis ($H1_1$).Its shows that there is a significant relation between….. and not acceptable.

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