

Study on Soil Quality Around the Polimar Industry of Masalmeta Village, Ta. Lakhani.

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ABSTRACT

Due to human need the level of pollution in environment has raised by devastating consequences. Plastic polymer have revolutionized human industries, thanks to their versatility. But extensive age of plastic polymer coupled with inadequate waste disposal has resulted in plastic becoming ubiquitous in environmental condition. Which bring risk to economy, human health and significance burden on agriculture sector, which pollute soil? The study reveals that, the soil contaminated by Vinyl chloride, Carbonate also Phthalates acid. These contaminations remove through phytoremediation and bioremediation technique to recover soil fertility and prevent soil pollution.

Keywords: Soil Quality, Polymer Plastic, Industry, Masalmeta Village

INTRODUCTION

Masalmeta village code is 537179 located in Lakhani Tehsil of Bhandara District in Maharashtra, India. It is situated six km. away from headquarter of Lakhani office. Total geographical area 318.56 hector. Total population of 1057 people, there are about 266 house in village. The village connected by private bus , auto service. The connectivity of people from near Borgaon, Morgaon, Rajegaon. Lakhori, Salebhata, Alesur, Singori, these are a small village and mostly connected to Tehsil and District place. Total agricultural area 172 hector about 26.72 ha is in non-agriculture grazing land area [1,2].

Polymer industry that evacuated various pollutant and disposal waste of calcium carbonate, vinyl chloride, phytate and other micronutrient like iron, copper, zinc, manganese, which run off and mix in to the soil. That makes soil pollution and soil become unfertilized, which directly effect on plant causes health hazard to grazing animal, directly rice on human consumption. The mulching of waste plastic residue in industry run in agricultural area was left in soil in to small particle which contaminate the soil [3].

Plastic polymer mulching and application of polymer plastic, plastic polluted waste water, waste dumping, waste runoff in irrigated area create a soil contamination. These soil is not suitable for rice cultivation [4].

Once sufficiently dewatered, sludge is dump in land based application. Improper disposal of this waste and pulp lead to serious health problem, soil quality change and become unfertilized [5].

MATERIAL AND METHOD

K.G.N.Polymer and Amim Akbany Polymer the two industry situated near Agricultural land of Masalmeta village. Which affected 716 hector rice land of Borgaon, Morgaon, Rajegaon. Lakhori, Salebhata, Alesur, Singori, and Masalmeta village, so the agricultural and grazing land disturbed. There flora and fauna also disturbed. The surrounding areas of this industry are selected for this study

Preparation of soil sample;

The collected soil sample were air dried and crushed from pistil sieve with 2mm diameter these soil sample were used for the determination of physic-chemical properties.

Soil reaction **Calcium carbonate**; content was determined by rapid titration method

Vinyl chloride; was determined by EPA method and analysed with gas chromatography with flame ionization detector at 7.50mm Hg/Kpa recorded 4-500 ppm standard.

Phytate; determined calorimetrically at 830nm with UV-Vis spectrophotometric detection.

Nitrogen; available nitrogen in soil and plant was determined by alkaline permanganate method and analysed by Kelpus nitrogen analyzer result was depicted in kg/ha-1.

Potassium; was determined by neutral ammonium acetate extract using flame photometer.

Sulphur; determined by turbid metric spectrophotometer at 425nm.

Phosphorus; was determined by extracting 0.03 NH₄F+0.025 normal HCL and phosphorus content was estimated by calorimetrically using ascorbic acid method.

(pH); the pH of the soil is 1:2.4 soil water mixture was determined by digital pH Meter.

Micronutrient; like copper manganese, zinc, iron was determined by DTPA extract of soil using Atomic absorption Spectrophotometer.

RESULT AND DISCUSSION

The physicochemical analysis of soil was determined the result revealed that Calcium carbonate absorbed at 116mg/l, Vinyl-chloride 4: 560ppm. Phytate recorded at 210mg/l. Nitrogen and Potassium recorded at 190 mg/l. Sulphur and Phosphorus noticed at 1.2mg/l, PH 7.52; Copper and Magnesium recorded about 143mg/l. Zinc, Iron recorded at highest level.

CONCLUSION

The estimation of soil at study area, soil was contaminated highly with Phytate and Vinyl- chloride and carbonate, also contamination take place with Iron and Zinc. So soil is not necessary for growth of rice and other plant. Thus it may notice that from civilized society to abide such a polluted industry from an area make a clean environment recover contamination of soil by various bio remedies and phyto-remedies. Waste from lime clean can be used to modify soil acidity and improve soil fertility.

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