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Quality Of Ground Water And Soil Fertility Status Of Thakurwadi (vadgaon) Of Rajgurunagar, Tal- Khed In Maharashtra

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Abstract:Thakurwadi of Rajgurunagar, Tal-Khed is trible area in Maharastra. Thakurwadi is sticky ruler area where % of tribal is greater than 80%.

Ground water is only the source of water available for drinking and domestic purpose. Ground water and water of rain only can be used for agriculture purpose. This paper focuses attention on the study of quality of water and nutrient content in the soil.

Keywords: Fertility of soil, nutrients, Analysis.

INTRODUCTION

Water, food and shelter are basic requirement of human-life. Water and food are essential for all living organism. Life cannot run without it.

About 97.2% of water on earth is salty and 2.8% is present as fresh water from which about 20% constitutes ground water. Ground water is highly valued because of certain properties not possessed by surface water. Water quality is based on physical and chemical constituents due to weathering of parent rocks and anthropogenic activities[2].

Fertility of soil is depends upon the nutrient availability in the soil. Soil fertility is, 'The capability of soil of producing a plant yield under defined conditions[3].

Nutrient are classified as

1) Micronutrient include elements like zinc, boron, chlorine, cobalt, molybdenum, manganese, iron, etc.
2) Macronutrients include elements like nitrogen, phosphorus, potassium, carbon, oxygen, hydrogen, etc.

Macronutrients play important role for fertility of soil. Carbon, oxygen and hydrogen are obtained by plant from air and water providing energy for plant growth and metabolism of plants while nitrogen, phosphorus and potassium are needed by plant in large quantities and responsible for plant growth and fertility status4.

However this paper focuses attention on the study of quality of water and soil fertility status of Thakurwadi of Rajgurunagar , Tal- Khed, Dist-Pune in Maharashtra.

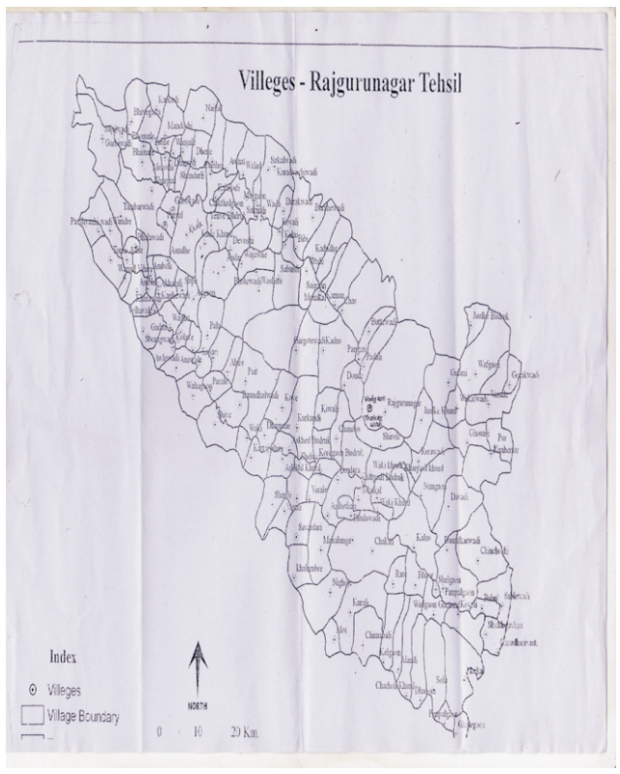
Region-

Study area Thakurwadi is situated in Khed Tahsil in northern Pune district is near to Rajgurunagar, Maharashtra. Thakurwadi of Vadgaon is 5 k.m. from Rajgurunagar. Pune district is located between

1) Longitudes (East) 73°5'
2) Latitudes (North) 18°31'

Water and Soil Sampling-

The ground water sample were collected in polythene bottle which were cleaned with acid water followed by rinsing twice with distilled water and soil samples were collected in polythene bags which were cleaned with distilled water and dry well.



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METHODOLOGY-

The soil samples collected were taken to the soil laboratory ground well, dried to obtain suitable soil sample for analysis. The nitrogen, phosphorus and potassium content were obtained.

Nitrogen content in terms of organic carbon was derived with 'walker and Black' method. Phosphorus content was obtained by using photo electric calorimeter and Potassium content was obtained by using flame photometer.

Only ground water is sources of water were taken to water analysis laboratory .pH is measured using pH meter.EC is measured using EC meter. Sodium and potassium were analyzed using a flame photometer. Calcium and magnesium were analyzed by using EDTA titration methods chloride content was determined volumetrically by AgNo3 titration method. Carbonate, bicarbonate, sulphate were determined by volumetric method.

1] Soil fertility Status of Thakurwadi (Vadgaon) of Rajgurunagar, Maharashtra

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
1. Nitrogen in terms %	0.30%	0.36%	0.45%	0.18%	0.24%
2. Phosphorus in terms Kg / hector	10.42	7.44	10.42	6.80	10.20
3. Potassium in terms Kg / hector	360.74	399.12	417.76	495.61	432.01

2] Quality of ground water of Thakurwadi, (Vadgaon) of Rajgurunagar, Maharashtra.

PH	EC	Na^{+}	Ca^{2+}	Mg^{2+}	K^{+}	Co_3^{2-}	HCO_3^{-}	$C l^{-}$	So_4^{2-}
6.77	0.61	0.17	5.80	5.20	0.02	0.00	3.60	4.40	3.18

Unit- EC [mS/cm] & Na^{+}, ca^{2+}, mg^{2+}, k^{+}, co_3^{2-}, Hco, c^{1-}, so_4^{2-} [mg/L]

CONCLUSION-

Present investigation of Soil and ground water of Thakurwadi (Vadgaon) of Rajgurunagar indicate that Soil of Thakurwadi is rich in potassium and poor in phosphorus and nitrogen. Quality of ground water is medium having medium conductivity, nearly neutral pH and ca2+, mg2+ is high, Na+, k+, co32- are normal, c l-, So42- are moderately safe. Ground water of well of Thakurwadi (Vadgoan) of Rajgurunagar can be used for agriculture purpose.

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