RESULTS
4. RESULTS

Influence of sewage water on soil:

A) Physicochemical parameters:

The results of the Analysis of Physicochemical parameters are prescribed in table 1 and 2.

Soil and water parameters:

1) pH.

The soil pH of sample plot irrigated with bore-well, bore-well and sewage and sewage water and were found to be 7.72, 7.85, and 6.97 respectively. And that of water were recorded as 7.70, 7.52, and 6.67 respectively.

2) Electrical conductivity

The EC of soil sample plot irrigated with bore-well, bore-well and sewage and sewage water and were as follows 0.021, 0.017 and 0.092 M. mhos / cm respectively. And those that of water were 2.08, 2.42, and 2.90 respectively.

3) Organic carbon

The organic carbon % of soil sample plot irrigated with bore-well, bore-well and sewage and sewage water and were recorded as 0.38, 0.40, and 0.48 respectively.

4) Nitrate- nitrogen Content.

The soil nitrate nitrogen content in sample plot irrigated with bore-well, bore-well and sewage and sewage water and were found to be 0.32, 0.25, and 0.70 mg/100gm respectively. And those that of water were recorded as 0.052, 0.061, and 0.162mg/lit respectively.
5) **Phosphate Content**

The phosphate content in the soil of sample plot irrigated with bore-well, bore-well and sewage and sewage water and were estimated as 0.00772, 0.00776, and 0.0081mg/100gm respectively and in the water it were recorded as 95,134, and 8115mg/litre respectively.

6) **Potassium content.**

The potassium content in the sample plot irrigated with bore-well, bore-well and sewage and sewage water and were as follows 0.0278, 0.0225 and 0.0312mg/100gm respectively (Table1) In the water the potassium content were 6.1, 5.6 and 81.2 ppm respectively.

7) **Calcium content**

The calcium content of soil in sample plot irrigated with bore-well, bore-well and sewage and sewage water and were recorded as 47.69, 34.02 and 67.82 mg/100gm respectively. In water it were recorded as 15.2, 12.03 and 36.62, mg/lit, respectively.

8) **Magnesium content**

In the soil of sample plot irrigated with bore-well, bore-well and sewage and Sewage water magnesium content were as follows 10.10, 30.66 and 44.42 mg/100gm respectively. The magnesium content of water were 46, 190 and 312, mg/lit, respectively.

9) **Total hardness**

The total hardness of water in plot irrigated with bore-well, bore-well and sewage and sewage water and were 600, 580 and 628.4 mg/lit, respectively.

10) **Sulphate content**
The sulphate content in the water of sample plot irrigated with bore-well, bore-well and sewage and sewage water and were recorded as 80, 86, and 112 mg/lit, respectively.

11) Chloride content
The chloride content in the water of sample plot irrigated with bore-well, bore-well and sewage water and were recorded as 210.92, 189.29 and 420.7 mg/lit respectively.

12) Dissolved Oxygen
The dissolved oxygen levels of water in plot irrigated with bore-well, bore-well and sewage and sewage water were found to be 3.0, 3.2 and 5.2 respectively.

13) Free Carbon dioxide
The free carbon dioxide content of water in plot irrigated with bore-well, bore-well and sewage and sewage water were found to be 73.4, 51.6 and 152.1 mg/lit respectively.

14) Carbonates
The carbonate level of 610, 660 and 792 mg/lit, were recorded in the water of sample plot irrigated with bore-well, bore-well and sewage and sewage water respectively.

15) Bicarbonates
The bicarbonate content of 240, 281.2 and 251.4, mg/lit were recorded in the water of sample plot irrigated with bore-well, bore-well and sewage and sewage water respectively.

B) Biochemical parameters/ Leaf estimations
The result of the analysis of leaf estimates are presented in table 3,4 and 5.

1) Moisture content
The moisture content in the tender, medium and coarse leaves of sample plot 1 are 70.42, 69.12 and 67.32 % in V-1 and 73.52, 70.32 and 69.92 % in Anantha and 73.63, 73.51 and 72.31 % in S-36 respectively. Corresponding values of sample plot 2 were 64.12, 60.35 and 63.12 % in V-1, 70.26, 66.52 and 68.12 % in Anantha and 71.52, 69.43 and 70.15 % in S-36. In sample plot 3 the moisture content were 69.62, 67.28 and 66.14 % in V-1, 71.56, 69.42 and 69.45 % in Anantha and 72.58, 71.68 and 70.32 % in S-36 respectively. (Table 3,4 &5)

2) Chlorophyll

The total chlorophyll content in the tender, medium and coarse leaves of sample plot 1 were as follows 1.652, 2.218 and 4.298 mg/gm in V-1, 1.643, 2.202 and 3.282 mg/gm in Anantha and 1.526, 2.107 and 3.342 mg/gm in S-36. In the sample plot 2 the chlorophyll content were found to be 1.793, 2.238 and 4.436 mg/gm in V-1, 1.692, 2.248 and 4.410 mg/gm in Anantha and 1.572, 2.332 and 4.312 mg/gm in S-36 respectively. In the sample plot 3 the total chlorophyll content were recorded as 1.927, 2.528 and 4.659 mg/gm in V-1, 1.092, 2.510 and 4.462 mg/gm in Anantha and 1.812, 2.490 and 4.362 mg/gm in S-36 respectively. (Table 3, 4&5)

3) Protein content

The protein content in tender, medium and coarse leaves of sample plot 1 were found to be 2589, 2255 and 2218 µg/ml in V-1, 2385, 2197, and 2103 µg/ml in Anantha and 2342, 2018 and 2002 µg/ml in S-36 respectively. In the sample plot 2 content were 2252, 1962 and 1931 µg/ml in V-1, 2489, 1950 and 1910 µg/ml in Anantha and 2372, 1848 and 1805 µg/ml in S-36 respectively. In sample plot 3 protein content were 2058, 1826 and 1664 µg/ml in V-1, 2023, 1716 and 1542 µg/ml in Anantha and 2010, 1615 and 1421 µg/ml in S-36 respectively. (Table 3, 4& 5)
4) Sugar;

The sugar content in tender, medium and coarse leaves of sample plot 1 was found to be 2388, 3352 and 3652 μg/ml in V-1, 2250, 3261 and 3540 μg/ml in Anantha and 2367, 3152 and 3432 μg/ml in S-36. In the sample plot 2 content were found to be 2858, 3052 and 3150 μg/ml in V-1, 2740, 3010 and 3042 μg/ml in Anantha and 2630, 2908 and 2932 μg/ml in S-36. In the sample plot 3 content were found to be 6752, 7015 and 7956 μg/ml in V-1, 6542, 6918 and 7832 μg/ml in Anantha and 6431, 6802 and 7752 μg/ml in S-36. (Table 3, 4, & 5)