





### Pre Stage



Figure 1: Decreasing growth of *Cicer arietinum* at pre stage due to the effect of waste water

### Peak Stage



Figure 2: Decreasing growth of *Cicer arietinum* at peak stage due to the effect of waste water

### Post Stage





Figure 3 & 4: Decreasing growth of *Cicer arietinum* at post stage due to the effect of waste water

### 3. Results

Results show that in *Cicer arietinum* at pre stage, the concentration of carbohydrate, nitrogen and protein varies from 139 to 310 mg/g, 0.130 to 0.648% and 0.815 to 4.053% respectively, at peak stage from 376 to 782 mg/g, 0.150 to 0.799% and 0.939 to 5.495% respectively and at post stage from 302 to 615 mg/g, 0.159 to 0.799 % and 0.997 to 4.995% respectively. In Carbohydrate, the maximum reduction among all level was 18% at pre stage, 19% reduction at peak stage and 14 % at post stage. In nitrogen and protein content, the maximum reduction with 29% was found at pre stage, 25 % reduction at peak stage and at post stage both. The maximum reduction was found at 60% concentration of waste water in all contents and after this concentration, the nutritional values decrease continuously.

### 4. Discussion

Figures and readings show that at each succeeding level of wastewater containing heavy metals, the concentration of carbohydrate, nitrogen and protein is decreasing respectively. Results reveal that up to 40% concentration of waste water, there is a slight decrease in nitrogen, protein and carbohydrate content of plant and plant is giving positive response towards the wastewater concentration because little amount of metals are required as a micronutrients for the healthy growth and development of the plant so the 40 % concentration of wastewater can be taken as a acceptable nutritional level for the plant growth but at 60% concentration of waste water there is a drastic change in the concentration of carbohydrate, nitrogen and protein content of *Cicer arietinum*. At the 60 % concentration of waste water and ahead plant is losing its nutritional value rapidly. so results proves that plants require a minimum amount of heavy metal for their growth but when its amount exceeds, it degrade the quality and nutritional value of plant which is not good for the plant growth. (Prasad, R and Roy, B. K. 2001; Sharma, B.K. and Habib, I. 1995) also showed the same results.

### 5. Recommendations

After a certain limit, the use of Textile waste water reduces the nutritional value of crop plant and act as a growth resistant to the plant. So, it is recommended that the use of sewage and textile waste water for growing vegetables should be minimized and before using it for agricultural

purpose, waste water should be checked in order to reduce the biomagnifications via food chain. This study will help the policy makers, Technocrats and Researchers to know maximum limit of using waste water for agriculture and to find its safe use.

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