

POTENTIAL TO GROW *Ipomoea aquatica* IN KITCHEN WASTEWATER HYDROPONIC SYSTEM

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ABSTRACT

In this study the potential of growing *Ipomoea aquatica* in hydroponic system using kitchen wastewater was assessed. Twenty one households were selected from seven areas of *Jaffna Peninsula, Sri Lanka* namely *Kokuvil, Kondavil, Nallur, Kalviyankadu, Thirunelvely, Jaffna town* and *Chavakacheri* with three households from each area. Kitchen wastewater used in the experiment was analyzed in every week for nitrate N, phosphorous, potassium, calcium, pH and EC. Ground water of respective households was also analyzed for the same properties. Five *Ipomoea aquatica* cuttings were placed in three liters of waste water kept in plastic pots. In each household plants were grown in two pots. Growth of plant was analyzed by weight increase. At the end, nitrate N in plant tissue was measured. Analysis of the experiment was done by paired-T test and Duncan New Multiple Range Test (DNMRT) at significance level of 0.05. In ground water of the households the average values of nitrate N, phosphorous, potassium, calcium, pH and EC were 5.07 ± 3.28 mg/L, 0.24 ± 0.2 mg/L, 16.55 ± 4.79 mg/L, 30.85 ± 8.16 mg/L, 7.33 ± 0.16 and 1.36 ± 0.37 dS/m respectively. In kitchen wastewater of these households average nitrate N, phosphorous, potassium, calcium, pH and EC were 4.08 ± 2.72 mg/L, 1.71 ± 1.01 mg/L, 13.89 ± 9.59 mg/L, 35.96 ± 6.17 mg/L, and 7.65 ± 0.27 and 1.47 ± 0.76 dS/m respectively. Nitrate N and EC in kitchen wastewater did not show significant difference with ground water. However, phosphorous, calcium, and pH in kitchen wastewater showed significantly higher than with those of ground water. Potassium in kitchen wastewater showed significantly lower than that of ground water. The average biomass increase of *Ipomoea aquatica* grown in kitchen wastewater was from 5.07g to 39.58g in three weeks. The study therefore indicates that *Ipomoea aquatica* could be grown in kitchen wastewater hydroponic system in the tested areas which not only fulfills the family need of leafy vegetable but also efficiently use the wastewater.