

**A PRELIMINARY STUDY ON THE BEST PH VALUE OF
WATER TO INCREASE THE QUALITY OF
*ECHINODORUS BLEHERI***

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ABSTRACT

Aquatic plants have adapted to life in water with a specific pH, temperature, electrical conductivity and may suffer from even a slight change. *Echinodorus bleheri* is one of the highest demanded aquatic plant species in export market. Urrestarazu (2004) stated that the pH value determines the nutrient availability for plants. Present study was conducted to find out the best pH value of water to increase the quality of *Echinodorus bleheri*. Steiner (1968) stated that a nutrient solution for hydroponic systems is an aqueous solution containing mainly inorganic ions from soluble salts of essential elements for higher plants. Eventually, some organic compounds such as iron chelates may be present. Marschner (1995) have found that an important feature of the nutrient solutions is that they must contain the ions in solution and in chemical forms that can be absorbed by plants, so in hydroponic systems the plant productivity is closely related with nutrient uptake and the pH regulation. Each nutrient shows different responses to changes in pH of the nutrient solution. The experiment was carried out with 5 pH treatments as pH 6.0, 6.5, 7.0, 7.5 and 8.0. Each treatment had 3 replicates. Electrical conductivity was maintained 1000-1500 μs level. A significant difference was observed between mean height difference of plant and pH 6.5 ($p < 0.05$), except week 2. At week 2, no significant difference was observed. Although the pH value and mean height difference is not significant in week 2, the highest mean height difference was recorded at pH 6.5. No significant difference was observed between mean numbers of leaves increment with varying pH range during week 1 period. After the 1st week there is a significant difference between mean number of leaves increment with pH 6.5 ($p < 0.05$). The highest height difference was recorded at pH 6.5 throughout the study period. The lowest height difference was recorded at pH 7. The highest number of leaves increment was recorded at pH 6.5. The lowest number of leaves increment was

not confined to a single treatment. But most of the time pH 6 and pH 8 showed the lowest number of leaves increment. The results indicated that by monitoring pH of nutrient solutions quality of *Echinodorus bleheri* can be increased.

Key words: *Echinodorus bleheri*, Hydroponic technique, pH , Plant Quality