Optimum solution depth for hydroponically grown lettuce (*Lactuca sativa*) in hot areas for static hydroponic systems

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An experiment was conducted during July-mid August 2001 to assess the optimum solution depth for hydroponically grown Lettuce in hot areas for static systems.

Lettuce (*Lactuca sativa*) variety 'Grand Rapids' was used for the experiment. Experiment had four treatments (four solution levels 10 cm, 20 cm, 30 cm and 40 cm) and four replicates. Experimental design was Completely Randomized Design (CRD). pH and EC values of the solution, temperature in greenhouse and solution, and light intensity were recorded daily. Root length, number of leaves, plant height and shoot length were recorded in weekly intervals. Length and width of the 7th leaf and total wet weight of the shoot, wet and dry weight and root dry and wet weight were measured after harvesting.

Temperature in the containers was varied from 26.75 ^{0}C to 28.2 ^{0}C (from 10 cm to 40 cm) and air temperature was 30.8 ^{0}C, which was higher compare to the temperatures of the solution. Shoot fresh weight of four treatments varied 155 g/plant to 189 g/plant. Cost per unit yield was Rs.19.17, 34.41, 49.79 and 59.69 and yield per unit solution was decreased with increase of depth. Root length of the treatments was less in 10 and 40 cm depth while it was high in 20 and 30 cm depth. Width of the 7th leaf was highest in 20 cm solution level. However, economical viable solution depth was established as 10 cm depth.

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