Performance of salad cucumber (*Cucumis sativus*) in a newly formulated hydroponics nutrient solution in two different growing media under protected house conditions

W G S P Kumari[1], K D N Weerasinghe[1], Janitha A Liyanage[2*] and Indumini S Kariyawasam[1]
[1] *Department of Agric. Engineering, Faculty of Agriculture, University of Ruhuna, Kamburupitiya*
[2] *Department of Chemistry, University of Kelaniya, Kelaniya*

Hydroponics is the growing of higher plants with their roots in a dilute nutrient solution. The major advantage of hydroponics is it permits control supply of all mineral elements. The basic principle behind the process is that of growing plants with their roots in contact with a solution containing all the essential plant nutrients in amount needed for optimum plant growth.

This study was conducted under protected house conditions at the Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya, during July-December 2005 to assess the performance of salad cucumber (*Cucumis sativus;* Var. Cansas) in a newly formulated hydroponics nutrient solution compared to commercially available Albert's solution in two different growing media (coir dust and sand).

During the experimental period, environmental data (air temperature, light intensity, relative humidity) inside the protected house, growth parameters of plants and data relevant to the consumption of nutrient solutions were recorded. Temperatures inside the protected house during the research period ranged between 27-35 ^{0}C. Light intensity varied between 8,800-64,800 lux and relative humidity remained between 58%-87%.

Fresh yields of 4611.25, 3977.50, 3400.00 and 3065.00 g/ plant obtained with Coir dust medium/Albert's solution, Coir dust medium/New solution, Sand medium/Albert's solution and Sand

medium/New solution respectively. The nutrient solutions show no significant difference between each other in respect to total yield. Growing media show a significant difference while coir dust medium has a higher yield compared to sand medium. The yield of cucumber is reduced by 24.73 % when it is grown in sand medium compared to coir dust medium.

The sugar content, dry matter, vitamin C, moisture and calcium content of the fruits had no significant difference in two solutions and were in accordance with the values reported for cucumber. However, in the case of growing media, coir dust medium does not differ significantly from sand medium in respect to all nutritional parameters except dry matter and moisture content of the fruit.

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* janitha@kln.ac.lk Tel: 011-2914486