SECTION B

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Performance of slicing cucumber in a newly formulated hydroponics solution

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Hydroponics is the term used to describe growing plants without soil. Slicing cucumber (*Cucumis sativus*) is one of the most important market vegetables in the tropics. The performance of slicing cucumber, variety CANSAS, in newly formulated hydroponics solution compared to the commercially available Albert's solution was conducted under protected house condition. The new solution was developed considering the nutrient requirement of the slicing cucumber plant and it was characterized using computer aided chemical speciation modeling.

Two treatments with 30 replicates were kept at completely randomized design. During the study period environment parameters (temperature, relative humidity, light intensity both inside and out side the protected house - 4 times a day), plant parameters (plant height, number of leaves, number of flowers, number of fruits yielded), fruit quality parameters (dry matter, protein, ash, fat, vitamin), post harvest duration of fruits and solution parameters (solution consumption, EC and pH) were analyzed and recorded.

The result revealed that the slicing cucumber variety CANSAS can successfully be grown in Kamburupitiya area under protected house conditions hydroponically. Performance of plants with respect to plant height and number of leaves had no significant difference but number of female flowers, fruits per plant and the total yield were higher significantly in newly formulated solution. Average weight of fruits, as due to higher total consumption of the solution by the plants, was higher in products from Albert's solution but quality parameter of fruits, such as, dry mater (5%), ash (4%), fat (84%) and protein (5.5%) were higher in fruits harvested from the new solution. Shelf life was 33.3% higher in fruits harvested from the new solution. Further, no precipitation of metals was observed in the new solution during the crop cycle.

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