B-127: Low cost hydroponic techniques for tomato cultivation

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An experiment was conducted under greenhouse condition at the Faculty of Agriculture, University of Ruhuna, Mapalana, during mid October 1997 to mid February 1998, to select a suitable culture solution and method for tomato cultivation in non-circulating hydroponic systems.

Tomato variety KWR was grown in two nutrient solutions (modified Khnop's solution (solution A) and solution suggested by Asian Vegetable Research and Development Center (solution B) with and without substrate material of

charcoal. Electrical conductivity (EC) and pH of the solution A was 0.8 mS cm^{-1} and 6.40 and the solution B was 2. 1 mS cm^{-1} and 6.71.

The experimental design was two factor complete random design with 4 treatments and 4 replicates. Plant height and number of flowers per plant were recorded in weekly intervals and pH and EC in daily intervals.

Solution B with charcoal has a significant influence on the tomato growth and yield compared to solution A. It was revealed that tomato yield of 8.18 kg/m^2 could be obtained under greenhouse condition using the hydroponic solutions which gives an economical gain of Rs 46.85/m^2. A rapid mineral absorption by the tomato plant was taking place in solution B compared to solution A.