

ID 38

Effect of different growing media on growth and yield of cabbage (*Brassica oleracea* L. var Green Coronet) under controlled environmental conditions

U.D.T. Perera^{1*}, S. Subasinghe¹, K.K.L.B. Adikaram², H.K.M.S. Kumarasinghe¹, M.K.D.K. Piyaratne²

¹*Department of Crop Science, Faculty of Agriculture, University of Ruhuna, Sri Lanka.*

²*Computer Unit, Faculty of Agriculture, University of Ruhuna, Sri Lanka.*

Abstract

A study was conducted from August to November 2022 in a protected house at Faculty of Agriculture, University of Ruhuna to evaluate the effect of different growing media on growth and yield performances of cabbage (*Brassica oleracea* L. var Green Coronet) under controlled environmental conditions. The experiment was carried out in a Completely Randomized Design with four replicates. In this experiment, three different types of growing media were evaluated, namely coir dust, a 1:1 mixture of coir dust and sand, and sand alone. The particle size of sand was 0.2 - 2 mm in diameter. The application rate of the Albert's solution, a liquid inorganic fertilizer was 1.0 g/plant/day. Temperature and relative humidity inside the protected house were maintained at optimum levels by an automation system. Growth parameters (plant height, canopy diameter and number of loose leaves per plant) were taken at fortnight intervals while cabbage heads and total biomass were taken as yield parameters at harvesting. The data were analyzed using ANOVA and means were separated by least significant difference (LSD) at 5% probability level. Results revealed that there was a significant effect of growing media on plant height, canopy diameter, plant weight, head weight and head perimeter. Coir dust and 1:1 coir dust: sand media recorded significantly higher values for plant height, canopy diameter, plant weight and head perimeter over the sand media while coir dust alone medium gave significantly higher fresh weight of head than sand medium. However, fresh weight of cabbage heads from coir dust alone media was not significantly different from the fresh weight of cabbage heads obtained from 1:1 coir dust: sand medium. There is no significant effect from growing media for number of loose leaves per plant. Thus, cabbage can be successfully grown in either coir dust or 1:1 coir dust: sand media in hydroponics under controlled environmental conditions.

Key words: Cabbage, Growing media, Hydroponics, Protected house

***Corresponding Author:** pereradinusha707@gmail.com