

## INVESTIGATION ON EFFECTIVENESS OF DIFFERENT ORGANIC GROWING MEDIA ON THE GROWTH AND DEVELOPMENT OF SELECTED LEAFY VEGETABLES UNDER HYDROPONIC SYSTEM

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### Abstract

Hydroponic cultivation is gaining popularity due to efficient resources management and quality food production. In general, different inorganic media are being used in hydroponic cultivation. This study aimed to investigate the effectiveness of organic media for hydroponic cultivation. Leafy vegetables such as *Amaranthus cruentus* and *Lactuca sativa* were selected for this study and planted in four different growing media namely coir dust, pine cones, ground nut shell and combination of pine cone and ground nut shell. Further, Albert solution and vermi wash were used as nutrient solutions. The different treatments were designed by combining nutrient media and growing media (Treatment 1-Albert+ coir dust, T2-Albert+ pinecone, T3-Albert+ groundnut shell, T4-Albert+ 50% pinecone +50% groundnut shell, T5-Vermiwash+ coir dust, T6-Vermiwash+ pinecone, T7-Vermiwash+ groundnut shell and T8-Vermiwash+ 50% pinecone +50% groundnut shell). The experiment was laid out in a completely randomized design with eight treatments and each treatment had three replicates. The plant height, number of leaves, chlorophyll content and fresh weight were measured and the data were analyzed using Minitab. The study revealed that the plant height, number of leaves and fresh weight are higher for the combination of pine cones and Albert solution in both plants. In contrast, the combination of coir dust and vermi wash had the lowest values for all the measured parameters. On the other hand, the chlorophyll content was higher in the combination of vermi wash and pine cone while the lowest value was observed for the combination of Albert solution and coir dust. With all such analysis, it is possible to conclude that the pine cones and Albert solution combination as the best medium for hydroponics cultivation.

**Keywords:** Albert solution, Nutrient medium, Pinecone, Plant height, Vermiwash

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