

## **Use of Organic Inputs for Media and Hydroponics in Capsicum Pepper Cultivation**

**Ayesha K.P.D., Weerakkody W.A.P.<sup>1</sup> and Samitha S.**

Department of Crop Science,  
Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka

All plants require right amount of light, water, nutrients and space for their growth and development. Protected culture and hydroponics provide the best solutions for constraints faced by perishable crops in open-field agriculture. Hydroponics or soilless culture is the method of growing crops indoor without using soil. Drip fertigated coco-peat bag culture is the most widely used aggregate type hydroponics system for protected culture of vegetable crops. However, the availability and cost of imported hydroponic fertilizers under present economic crisis have imposed limitations on conventional hydroponic practices in Sri Lanka. Further, the demand for organic vegetables is yet to explore in local and global markets. Taking these facts into consideration, this research was conducted to investigate the effects of selected organic fertilizer, bio fertilizer and soil conditioner combinations for growth and development of vegetable capsicum grown in phospho-compost medium and coco-peat bag culture under semi-intensive greenhouse conditions. This research was conducted in semi-intensive greenhouse conditions in the mid-country Intermediate Zone (IM3). Organic fertilizer treatments were selected based on the outcome of some previous research. Vermiwash, Jeevamrutham, Biochar, Banana stem extract and Gliricidia leaf extract were used in appropriate combinations and ratios (based on their N, P and K levels) as alternative sources of plant nutrients to be compared with the Albert's fertilizer (control). Agronomy and plant protection of capsicum were done following the standard practices. Growth and yield performances of capsicum plants grown in organic input-based bag culture were significantly higher compared to the control treatment. There was no significant difference in plant growth and yield among different organic input treatments. Therefore, each combination of organic inputs tested in the experiment has shown the potential for replacing inorganic hydroponic fertilizers in coco-peat bag culture grown vegetables in protected culture.

**Keywords:** Banana stem extract, Hydroponics, Jeevamrutham, Phospho-compost, Vermiwash.

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<sup>1</sup>wapweerakkody@agri.pdn.ac.lk