

Assessment of existing fertigation protocols in protected culture of vegetable crops in relation to marketable yield

H.R.U.T. Erabadupitiya¹, J.K. Galabada² and W.A.P. Weerakkody³

¹*Seed Certification Service, Department of Agriculture, Gannoruwa, Sri Lanka*

²*Socio Economics and Planning Center, Department of Agriculture, Peradeniya, Sri Lanka*

³*Department of Crop Science, Faculty of Agriculture, University of Peradeniya, Sri Lanka*

Abstract

Fertigation in soilless culture is a major determinant of the quality and quantity of the greenhouse crop yields. Sri Lankan growers are facing several problems of using hydroponic fertilizers. Thus, the over use and misuse of fertilizer have become a common problem in protected culture with subsequent increase in cost of production. Hence, this survey was conducted to find out the demographic profile of the greenhouse growers, most effective fertilizer schedule and growing medium for main greenhouse crops. On-farm data collection was done to confirm the data on fertigation collected from the farmer survey. Different fertigation schedules and growing media were evaluated for marketable yield. The more suitable and effective fertigation schedule was selected for different growth stages in each crop. According to the results obtained, the lower level of fertigation schedules that produce significantly higher marketable yield were selected as the most effective fertilizer schedules. For salad cucumber, it was 0.5, 1, 1.2 g/plant/day of Albert's fertilizer solution while for bell-pepper and tomato, it was 0.5, 1, 1.5 g/plant/day during 1-4, 5-8 and 9 week onwards after transplanting, respectively. Greenhouse growers in Sri Lanka used to apply different kind of growing media with different ratios of the composition. A significant yield difference could not be identified among different growing media used for hydroponic culture.

Key words: Albert's solution, Coir medium, Hydroponic, Poly-tunnel, Soluble fertilizer, Vegetables.