Effect of different substrates on nutrients content, yield and quality of strawberry cv. Selva in soilless culture

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Abstract

Plants need adequate nutrients in all stages of growth, which should be available in the growing medium. This study was performed to examine the effect of different substrates on nutrient uptake and quantitative and qualitative yield of greenhouse strawberry. The experiment was carried out in the research greenhouse of Jihad-e- Daneshghahi, West Azarbaijan, using a completely randomized design with 5 treatments and 4 replications. Five different growth media consisted of perlite-cocopeat ratios (v/v) of 100-0, 75-25, 50-50, 25-75 and 0-100. Physical and chemical properties and nutrients concentrations as well as fruit yield were measured. Comparison of the growth media showed that the highest number of flower and fruit was in ratio of 75-25 perlite-cocopeat. The highest fruit yield was obtained from ratios of 75-25 and 50:50 of perlite-cocopeat. Evaluation of qualitative fruit-characteristics indicated that the highest dry matter and total soluble solids were measured in 100-0 ratio of perlite-cocopeat. The highest quantity of fruit N and K was found in 100-0 ratio of perlite-cocopeat. Fruits grown in 0-100 ratio of perlite-cocopeat had the highest calcium and magnesium as compared to other substrates. The general conclusion is that most quantitative and qualitative traits of strawberries grown in hydroponic system depend on the substrate, and the best of these traits were obtained in ratios of 75-25 and 50-50 of perlite-cocopeat.

Keywords: Hydroponic, Cocopeat, Perlite, Greenhouse strawberry, Plant nutrition.

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