Optimal Plant Density, Nutrient Concentration and Rootzone Temperature for Higher Growth and Yield of Brassica rapa L. 'Curly Dwarf Pak Choy' in Raft Hydroponic System Under Tropical Climate

ABSTRACT

Little is known on the optimal plant densities, nutrient concentrations, and rootzone temperatures for Curly Dwarf Pak Choy' (CDP) production in raft hydroponic system in tropical climate. In this study, five experiments were carried out to assess the growth and yield of CDP at 40, 50 and 61 plants/m2 × 1.7, 2.2 and 2.8 mS/cm nutrient concentrations (EC). This experiment was followed with single plant experiments in EC 2.2 mS/cm at 25°C/25°C - 27°C versus not-controlled/25°C - 38°C (rootzone °C/ambient °C). The highest growth and yield were achieved at 50 plants/m2 , EC 2.2 mS/cm, and 25°C rootzone temperature. Marketable size was also achieved in less than 30 days at the lower temperature. Growth and yield, however, were not depending on plant density × nutrient concentration. These three factors need to be optimized to achieve a higher Pak Choy yield in raft hydroponic system in tropical climate.