

Abstract:

Soilless culture system is a good technique of plant growth offering guarantees of quality to the current rocket (*Eruca sativa* Mill.) market. This leafy vegetable is often commercialized fresh, cut, washed, conditioned in packages as ready-to-eat food, giving added-value to the fresh products. They have a high commercial potential deriving from market opportunities based on meals on air crafts, trains and boats and on school- and elderly-meals. However, fresh cut sliced vegetables not only maintain their metabolic activities, but also show a higher respiration rate than whole vegetables. The aim of the research was to obtain rocket plants with good food characteristics and the best post-harvest shelf life optimizing different cultural techniques. The rocket was sown on 29 November 1999 and harvested on 7 February 2000. Trays of 40 and 160 cells were used, filled with two media made by different proportions of peat and perlite. Two irrigation systems were used (Ebb-and-Flow and Flotation) with two nutrient solutions containing 30 and 60 mmol L⁻¹ N, respectively. The statistical design was a split-plot design with randomized blocks, with irrigation as main-plot factor and media x cell-tray x N as sub-plot factor. During post-harvest, leaf shelf life was assessed by fresh weight, and nitrate content was measured. The fresh mass was significantly influenced by the growing medium and by the interaction irrigation x cell number and N x irrigation. The best production was obtained using flotation and 40-cell trays. During post-harvest shelf life, the leaf loss of weight was significantly affected by the interaction growing medium x cell tray x N. The greatest loss of weight was found using 160-cell trays and 30 mmol L⁻¹ N with both the tested media. Soilless culture resulted to be an efficient cultivation system to grow homogeneous, clean, marketable and of high quality rocket plants.