

The effect of different ratios of peat and perlite on quantitative and qualitative characteristics of *Aloe vera* grown in hydroponic system

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Abstract

Aloe vera is one of the most popular ornamental plants that is widely used in production of medicines and cosmetics. To investigate the effect of different ratios of peat and perlite on quantitative and qualitative characteristics of *Aloe vera*, a split-plot experiment, arranged as completely randomized design, with five substrates (peat, peat and perlite (1:3 v/v), peat and perlite (1:1 v/v), peat and perlite (3:1 v/v) and perlite, (main plots)) at five different times (sub-plots) was conducted. Results showed that adding perlite to peat substrate increased the growth rate and quantitative and qualitative indices of *A. vera*. Maximum amount of antioxidants, total phenols, aloin and dry weight of plants were observed in peat and perlite substrate (3:1 v/v). But, maximum number of leaves, plant height, number of shoots, root weight, leaf weight, total weight, gel weight and dry weight of leaves were observed in plants grown in peat and perlite substrate (1:1 v/v). Based on these results, the peat and perlite substrate (1:1 and 3:1 v/v) could be recommended to increase quantitative and qualitative indices of *Aloe vera*.

Keywords: Antioxidant, Total phenol, Aloin, Gel.

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