Effect of different growing substrates on the yield and cut flower quality of rose cv. Maroussia

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Abstract

One of the main factors of an aggregate hydroponic system is to use a suitable plant media with local origin. Thus the objective of this research was to study the possibility of replacement of cocopeat as an imported material with local materials and the effects of such media on the growth and flowering characteristics of *Rosa hybrida* cv. Maroussia. A randomized complete blocks design experiment with four replications was conducted. The treatments were nine growing media: cocopeat (100%), perlite (100%), leca (100%), cocopeat (75%) + zeolite (25%), perlite (75%) + zeolite (25%), leca (75%) + zeolite (25%), cocopeat (50%) + perlite (50%), cocopeat (50%) + leca (50%) and perlite (50%) + leca (50%). Results indicated that plants grown in cocopeat and cocopeat + zeolite showed high vegetative and reproductive growth. The highest number of flowers per plant was observed in in cocopeat (8.31) and cocopeat + perlite (7.81) substrates, which had no significant difference with cocopeat + zeolite medium (6.87). Adding zeolite to cocopeat, perlite and leca improved length of flower bud and number of flowers per plant over their pure medium. Also, adding cocopeat to perlite increased fresh and dry weight of cut flowers and number of flowers per plant. Based on the results and availability of zeolite in Iran, mixture of cocopeat (75%) + zeolite (25%) is recommended.

Keywords: Perlite, Zeolite, Cocopeat, Leca.

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