

Title Use of herbal extracts for inhibiting microbial growth in holding solutions of cut-rose

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Abstract

A cause of wilting and short shelf-life in cut-rose cv. Dang Gang-Galar was microbial blockage in the vascular bundles as determined with a scanning electron microscope (SEM). Efficacy of plant extracts from various herbs (piper, annona, curcuma, tobacco and galanga) to control microbes isolated from holding solutions of cut-rose was examined. Extract concentrations of 0 (control), 1, 3, 5, 7 or 10% (w/v) was mixed in nutrient agar. Piper extract at all concentrations showed complete inhibition of microbial growth on mixed solid media. Two herbal extracts, 1% piper and 3% annona, were studied for control of microbial growth in holding solutions and maintenance the quality of cut-rose at 20°C and 85% RH. The results showed that 1% piper extract completely inhibited microbial growth in holding solutions, delayed bent neck and ethylene production, and maintained freshness of leaves. Though somewhat more blue, the anthocyanin content of petals in 1% piper-treated cut-rose was not significantly different with distilled water or 250 ppm 8-hydroxyquinoline sulfate (HQS) treated cut-rose. These results implied that piper extract may be used as an alternative to HQS for inhibiting the microbial growth in the holding solution of cut-rose.