Title Chlorine demand in cut flower vase solutions

Author Lijuan Xie, Daryl C. Joyce, Donald E. Irving and Joseph X. Eyre

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Abstract

Chlorine is used in the cut flower industry to suppress the growth of bacteria in handling and vase solutions. On-farm observations suggested that chlorine was rapidly degraded in a flower handling solution that contained citric acid. Changes in free available chlorine (FAC) concentrations for a range of vase solutions and cut flower types were investigated. FAC levels were stable in deionised water. FAC decreased more rapidly when cut flowers with rough stems (bark or trichomes) were placed in solution as compared to flowers with smooth (waxy cuticle) stems. FAC also decreased more rapidly with increasing number of stems in vases. Inclusion of sucrose (2%, w/v) in the vase solution reduced FAC levels. In contrast, chlorine was lost almost immediately in solution that included citric acid.