

Abstract:

One of the major problems of winter-harvested rose flowers is occurrence of brittle leaves, which appear less waxy and occur more frequently in high humidity growing conditions. Commercial rose cultivars were tested to investigate the mechanism of the reduction of cut flower longevity caused by brittle leaf formation.

Water loss of detached brittle leaves from cut 'Asami Red' flowers increased during three hours after harvest, and significant water loss began to show even within one hour compared to that of normal leaves. This symptom was more severe in the leaves from lower nodes. There was no significant difference between brittle and normal leaves in leaf area or stomatal number in the same cultivar. The longevity of cut rose flowers with brittle leaves was improved by removing all the leaves below the second node. However, pretreatment with RNA-Ag+tris(hydroxymethyl)-aminomethane inhibited excessive water loss of brittle-leaved cut 'Asami Red' flowers, hence significantly improving flower longevity even when the brittle leaves were retained. Large variation in brittle leaf formation was observed among cultivars, ranging from 0 to 40 %. Differences in flower longevity among cultivars were not related to brittle leaf formation. Further, the occurrence of brittle leaf was independent of leaf morphological characteristics.