Abstract:

Shipping potted flowering hibiscus is a commercial problem due to abscission of flowers and buds. A series of experiments was conducted to evaluate factors affecting bud drop during shipping. Flower buds were divided into six developmental stages with stage 1 being the smallest (< 1 cm) and stage 6 an open flower. When 'Pink Versicolor' was shipped for 2, 4 or 6 days at temperatures of 13, 18, or 25 °C, a three-way interaction ($P < 0.0001$) between shipping, temperature and bud stage was found. The stage 5 and 6 buds went through normal development and senescence under all conditions. However, abscission of undeveloped stage 1 and 2 buds increased with temperature and shipping duration. When plants were exposed to ethylene, stage 5 and 6 buds abscised quickly without going through normal development. There was no difference in the pattern of bud loss between exposure to 1 or 3 ppm of ethylene. Stage 1 and 2 buds were also affected by ethylene exposure especially at 3 ppm but the abscission was slower. These studies showed that hibiscus is sensitive to ethylene, which can result in loss of buds and flowers. However, the pattern of flower bud drop during shipping was not found to be parallel to flower bud drop on plants exposed to ethylene.