Comparison of changes in post-harvest quality deterioration of mango fruits between Thailand-Fukuoka and Okinawa-Fukuoka transportations

E. Yasunaga, S. Fukuda, K. Yuge, V. Sardsud, W. Spreer, P. Wanwarang

Acta Horticulturae 989: 221-224. 2013.

Abstract

This study aimed to determine the effects of the post-harvest distribution environment of the fruit of mango (*Mangifera indica* L.) imported from around Chiang Mai, Thailand to Fukuoka, Japan for international distribution and transported from Okinawa to Fukuoka for domestic distribution on physiological changes in transported fruit. Harvested mango fruit in Thailand, cultivar 'Namdok Mai', was obtained from orchards at Phrao and Pitsanulok, and in Japan, cultivar 'Irwin', was obtained from Okinawa, respectively. The distribution environment (temperature, relative humidity, and vibration conditions during transport) of fruit was measured with a gravity shock recorder. Immediately after harvest and immediately after the distribution fruit were stored in incubators for 6 days at 15, 25, and 35°C. The contents of L-ascorbic acid (L-AsA), sucrose, glucose and fructose, total soluble solids, hardness score, and respiration rate were measured as indices of the deterioration in fruit quality. The transportation of mango fruits imported from Thailand to Japan, took 19 d. Transportation between Bangkok and Phitsanulok was trucking, between Bangkok and Osaka was shipping, and between Osaka and Fukuoka was trucking. During shipping between Bangkok and Osaka, it was confirmed that the environmental temperature and humidity were controlled in optimal storage conditions for mango fruits. On the other hand, transportation from Okinawa to Fukuoka took only 3 d. Fruits imported from Thailand were confirmed to soften considerably from harvest. Softening of fruits progressed to 77% in Pharo fruits, and to 54% in Phitsanulok ones. Meanwhile, the firmness of fruits from Okinawa showed no significant differences before and after distribution because of short circulation. Comparing the total sugar content at harvest and after the distribution, the sucrose contents of fruit produced in Phrao and Phitsanulok increased significantly during the distribution; similarly, total sugar content increased.