

Title Influence of pre- and post-harvest factors and processing on the levels of furocoumarins in grapefruits (*Citrus paradisi* Macfed.)

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Abstract

The changes in the levels of three furocoumarins such as dihydroxybergamottin (DHB), paradisin A and bergamottin in Rio Red and Marsh White cultivars of grapefruits were monitored from November to May. The levels of DHB and bergamottin in both varieties of grapefruits decreased as the season progressed except for the bergamottin in Marsh White grapefruit. Influence of growing location, processing and storage on the levels of these compounds were also evaluated. Among the varieties the highest levels of DHB (2.266 µg/ml) and bergamottin (2.411 µg/ml) were found in Flame grapefruit grown in Florida. The highest level of paradisin A was found in Rio Red grapefruit grown in California and the lowest levels were observed in Rio Red grapefruit grown organically in Texas. Hand squeezed juice contained 1.98, 1.06 and 3.03-fold more DHB, paradisin A and bergamottin, respectively as compared to processed juice. The levels of furocoumarins showed a decreasing trend in all the juices with progress of storage. Levels of furocoumarins were more in cartons container than the cans and cardboard container juices.