

Title Changes in peel color of citron fruits from different genetic origins in response to postharvest copper and gibberellin treatments

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Abstract

Citron (*Citrus medica*, L.) fruits are used around the world for religious, medicinal, and culinary purposes. Although citrons originated in Southeast Asia, different varieties have developed in Morocco, Italy, Greece, Israel and Yemen. Despite the geographic distances and the differences in fruit morphology, citron varieties retain a marked degree of genetic uniformity. The fruit can be marketed when green or yellow, depending on consumer preference and final use, although the peel will ultimately turn orange. Citron, like most other citrus, is degreened commercially after harvest with ethylene, while green peel color can be maintained with gibberellic acid (GA) treatments. Copper, a cofactor in ethylene biosynthesis, can be applied easily as a postharvest drench, and is safer to handle than ethylene. We applied copper sulfate and gibberellin solutions, separately and together, to citron fruit from five distinct geographic origins as a means of regulating peel color after harvest. Fruit were then stored in plastic bags for 6-8 weeks at 12° or 20°. Green peel color was best maintained by 50 ppm GA, while degreening was best induced by 10 ppm copper sulfate. Copper treatments limited the subsequent development of callus on the stem end of the fruits during storage. The response of citron fruits of different varieties to copper and GA treatments did not correlate with degree of genetic relatedness.