

ABSTRACT

Pinasthika Rizkia Warapsari Wiratara

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Melon cv. Meloni and Tacapa Green Black are novel cultivars produced by Universitas Gadjah Mada. The information about volatile compounds, carotenoids content and physical properties including the impact of storage time in melon cv. Meloni and Tacapa Green Black are still scarce. The aims of this research were to investigate the volatile compounds, carotenoids content and physical properties of melon cv. Meloni and Tacapa Green Black during 20 days of storage at 21 °C. This research exhibited that 180 and 89 volatile compounds were identified in cv. Meloni and Tacapa Green Black, respectively. Principal Component Analysis (PC1) of contributed volatile compounds to aroma strongly distinguished both cultivars. Particularly, furaneol and trans β -ionone only found in melon cv. Meloni. Whereas, 2(3H)-Furanone, dihydro-4-hydroxy- found in cv. Tacapa Green Black and that was the first time discovered in melon fruit. The major carotenoids in cv. Meloni and Tacapa Green Black was β -carotene. During storage total carotenoids in cv. Tacapa Green Black increased significantly. Whereas, declined in cv. Meloni. Based on respiration rate cv. Meloni and Tacapa Green Black were grouped into climacteric and non-climacteric melon, respectively. The firmness of cv. Meloni declined remarkably whereas remained stable in cv. Tacapa Green Black during storage. The alteration of color properties of cv. Meloni and Tacapa Green Black were similar. The flesh lightness increased, Hue angle remained stable, and Chroma value decreased during storage. Based on firmness parameter, cv. Meloni could be stored up to 6 days while Tacapa Green Black reaches 20 days.

Keyword: volatile compound, carotenoids, melon, respiration rate, firmness

INTISARI

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Melon cv. Meloni dan Tacapa Green Black merupakan kultivar baru yang diproduksi oleh Universitas Gadjah Mada. Informasi mengenai senyawa volatil, kandungan karotenoid, dan sifat fisik beserta perubahannya selama penyimpanan pada melon cv. Meloni dan Tacapa Green Black sangat langka. Tujuan dari penelitian ini untuk menginvestigasi senyawa volatil, kandungan karotenoid, dan sifat fisik melon cv. Meloni dan Tacapa Green Black selama 20 hari pada 21 °C. Hasil penelitian menunjukkan bahwa ditemukan 180 dan 89 senyawa volatil pada cv. Meloni dan Tacapa Green Black, secara berurutan. Principal Component Analysis (PC1) dari senyawa volatil yang berkontribusi terhadap aroma membedakan kedua kultivar secara nyata. Secara khusus, furaneol dan trans β -ionone hanya ditemukan di cv. Meloni, sedangkan 2(3H)-Furanone, dihydro-4-hydroxy ditemukan di cv. Tacapa Green Black dan ini merupakan penemuan pertama di buah melon. Karotenoid utama di cv. Meloni dan Tacapa Green Black adalah β -carotene. Total karotenoid di cv. Tacapa Green Black meningkat signifikan, sedangkan di cv. Meloni menurun selama penyimpanan. Berdasarkan kecepatan respirasi cv. Meloni dan Tacapa Green Black digolongkan menjadi klimakterik dan non-klimakterik, secara berurutan. *Firmness* cv. Meloni menurun secara drastic sedangkan pada cv. Tacapa Green Black tetap stabil selama 20 hari. Perubahan parameter warna pada cv. Meloni dan Tacapa Green Black antara lain *lightness value* meningkat signifikan, *Hue angle* stabil, dan *Chroma value* menurun selama penyimpanan. Berdasarkan parameter *firmness*, melon cv. Meloni dapat disimpan sampai 6 hari sedangkan cv. Tacapa Green Black sampai 20 hari.

Kata kunci: senyawa volatil, karotenoid, melon, kecepatan respirasi, *firmness*