

Title Sensory and analytical characteristics of a novel hybrid muskmelon fruit intended for the fresh-cut industry

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Abstract

A novel hybrid muskmelon has been bred specifically for use by the fresh-cut industry in winter. Quality characteristics of fresh-cut pieces from the hybrid were compared to those of its inbred parental lines and to those of a commercial netted muskmelon (cantaloupe) and a non-netted muskmelon (honeydew) fruit available in winter. Pieces from hybrid and female line fruit had higher soluble solids content (SSC) and firmness, and lower aromatic volatile concentrations compared to those from the male line fruit. Pieces from hybrid fruit also had higher SSC (>3%) and were firmer (>5 N) than commercial fruit available during the winter, and had twice the aromatic volatile concentration of commercial honeydew and a more intense orange hue than commercial muskmelon. Consumers rated the flavor, texture, sweetness and overall eating quality of the hybrid higher than its inbred parents and winter-available honeydew and as well as or better than winter-available muskmelon. Hybrid fruit stored 5 weeks at 1 °C under modified atmospheric conditions, then fresh-cut and stored 14 d in air at 5 °C maintained good quality (firmness = 51 N, SSC > 12%, β -carotene and ascorbic acid concentrations = 18 and 182 mg kg⁻¹, respectively), and showed no signs of tissue translucency or surface pitting despite microbial populations >11 log₁₀ kg⁻¹. The results indicate that the novel hybrid muskmelon is a promising new melon type for fresh-cut processing and marketing, at least during the winter season.