Title Effect of postharvest period on sugars, organic acids and fatty acids composition in commercially sold medlar (*Mespilus germanica* 'Dutch') fruit

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Abstract

Fructose, glucose, and sucrose as the major soluble sugars, and citric, malic, and ascorbic acids as the major organic acids were determined by HPLC, and palmitic acid (16:0) and stearic acid (18:0), oleic acid (18:1), linoleic acid (18:2n-6) and linolenic acid (18:3n-3) as the major fatty acids were determined by GC in medlar (*Mespilus germanica* 'Dutch') fruit. The compositional changes of these constituents were monitored during the post harvest period of commercially sold Dutch form throughout its rapid ripening (fruit softening-darkening). Sucrose was highest at 1 WAH (228.4 mg/100 g fresh wt) and then decreased, remaining very low at 4 WAH (1.4 mg/100 g fresh wt). As for the levels of fructose and glucose, their levels shifted up to 2230.8 and 845.2 mg/100 g fresh wt at 2 and 3 WAHs, then the levels lessened to their lowest concentration. The levels of the three acids were high at the beginning, except malic acid level at 2 WAH, all acids leveled off through the latter weeks of post harvest period. In the fruit studied, the levels of saturated palmitic acid (16:0) and stearic acid (18:0), and unsaturated oleic acid (18:1), linoleic acid (18:2n-6) and linolenic acid (18:3n-3) were most abundant fatty acids detected throughout medlar ripening (pulp softening and darkening). The level of palmitic and stearic acids as well as the level of linoleic and linolenic acids were the highest at 1 WAH and then suddenly decreased as the medlar soften and the pulp becomes slightly (2 WAH) and fully (3 WAH) brown through 2 and 4 WAHs. In addition to these prominent fatty acids, a remarkable decrease was also obtained in the content of some other fatty acids (C_{10-15}, $C_{16:1}$, C_{20-24}).