

PASSION FRUIT VOLATILE COMPOSITION: A COMPARISON OF ORGANIC AND CONVENTIONAL CULTIVATION

FLAVOUR

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The volatile compounds contributing to the flavour of fruits may vary according to stage of maturity, the cultivar and edafoclimatic conditions, among others. Besides the conventional cultivation, passion fruit has been grown by organic system, which has already reached 31 million hectares of cultivated area in the world. The odour volatiles composition of yellow passion fruit grown in the Northeastern region of Brazil was already assessed (1), where fresh juice was collected in an industrial juice plant, which had received yellow passion fruit from large conventional growers. The present work investigated the volatile composition of yellow passion fruits grown in São Paulo State, Brazil, under conventional and organic systems. Volatile compounds from the headspace were swept by vacuum to a polymer trap for 2h and then eluted with dichloromethane and analyzed by HRGC. In total, 77 compounds were detected by FID and 26 were identified by mass spectrometry and retention indices, comprising 91% chromatogram area. The highest amount of volatiles was esters. Moreover were detected 4 terpenes, 3 alcohols, 1 ketone and 1 aldehyde. Majority compounds were the same for both samples: ethyl butanoate, ethyl hexanoate, hexyl butanoate and one non identified compound. Organic passion fruit contained relatively higher proportions ($p < 0.05$) of methyl butanoate and ethyl hexanoate, but relatively lower proportions ($p < 0.05$) of propyl acetate, butyl acetate, hexyl acetate, 3-hexenyl acetate, butyl hexanoate, hexyl butanoate, 3-hexenyl hexanoate and 3-hexen-1-ol. Compounds ethyl butanoate, hexyl butanoate and ethyl hexanoate are correlated to the characteristic aroma of passion fruit and to the sweet, frutal and floral notes.

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References:

- (1) Jales KA, Maia GA, Garruti DS, Souza Neto MA, Janzantti NS, Franco MRB (2005) Evaluación de los compuestos odoríferos del jugo de maracuyá amarillo por GC-MS y GC-O (OSME). *Noticias Técn. Lab.* 13, 12-14.

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