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ORGANIC AND

FLAVOUR CHANGES FROM RAW TO CONCENTRATED PINEAPPLE JUICE

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Pineapple is a tropical fruit with an exceptional juiciness and a vibrant tropical flavour that balances the sweet and acid tastes. The sensory quality of fruit juices undergoes changes during processing especially if it involves thermal treatment (1, 2). In this study, the volatiles of pineapple juice produced in a tropical juices industry in Brazil were identified by GC-MS and their odour importance, for the first time, assessed by Osme time-intensity GC-O method. Samples of pineapple juice were collected at different stages of processing: extraction, finishing, centrifugation and concentration. Volatiles were isolated by a dynamic headspace technique (3) and analysed by GC-MS. Juice samples from the extraction step were submitted to Osme (4) in order to determine the key-odour compounds that would be monitored during processing. Samples from each processing step were also submitted to descriptive sensory analysis by a panel of eight trained judges. In total, 54 compounds were detected by FID and 45 were identified by mass spectrometry and retention indices, most of them esters, followed by alcohols, aldehydes, ketones, acids, hydrocarbon and terpene. The aromagram revealed 64 odoriferous peaks, but only 46 were considered of major importance for the characteristic pineapple juice aroma. Most volatiles decreased during processing, some of them being key-odour compounds, described as pineapple, e.g. ethyl propanoate, 2-methyl-1-butanol, methyl 2-methylbutanoate. In the other hand, some compounds increased with processing, as 3-methyl-1-butanol, described as unpleasant, plastic; ethyl butanoate, described as green, pineapple; 2-methyl-1-butanol acetate, described as, unpleasant, medicine. Sensory assessors developed a vocabulary of 15 aroma and flavour descriptors: aroma of ripe pineapple fruit, natural pineapple flavour, sweet aroma, sulphurous aroma, fermented aroma and flavour, cooked pineapple aroma and flavour, green aroma and flavour, artificial aroma and flavour, acidic aroma and sweet and acid tastes. The samples from extraction, finisher and centrifugation steps presented similar volatile and flavour profiles, indicating that there were no major changes in the juice quality during these operations. The concentrated juice, however, distinguished from the other samples, showing very poor volatile profile, with strong cooked fruit aroma and flavour and an intense artificial aroma.

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Noticias

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