Two varieties of pineapples, Mahkota Bogor, Delika Subang and their new genotype (Pasir Kuda), were freshly extracted using liquid-liquid extraction and solid phase microextraction (SPME). The aroma compounds of the three samples were analyzed by GC-MS and GC-olfactometry using nasal impact frequency (NIF) method. A total of 14 odor-active compounds were associated with the aroma of pineapple. Methyl 2-methyl butanoate and ethyl 2-methyl butanoate with very high intensity were found to be responsible for the pineapple fruity sweet odor. Other odorants including methyl hexanoate, ethyl hexanoate, methyl octanoate, methyl 3-(methylthio) propanoate, 2,5-dimethyl-4-methoxy-3(2H)-furanone, δ-hexalactone, γ-octalactone, 2,5-dimethyl-4-hydroxy-3(2H)-furanone and δ-decalactone contribute to the overall aroma of pineapple. The main differences between the aroma of Mahkota Bogor, Pasir Kuda and Delika Subang could be attributed to the olfactory attributes (fruity, sweet, caramel, pineapple-like, coconut) which were perceived by most of the panelist in the Mahkota Bogor and Pasir Kuda but were not detected in the Delika Subang samples. This work is a prerequisite for effective selection of pineapple genotypes with optimal aroma profiles for high consumer acceptance.

Keywords: Aroma, volatiles, gas chromatography-mass spectrometry, gas chromatography-olfactometry, pineapple, solid phase microextraction