

The aroma compound alteration of canned coconut milk during storage

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Canned coconut milk usually associates with undesirable cooked odor. Preliminary study suggested that the off-odor had developed during storage. The alteration of aroma profile of canned coconut milk during 6 months of storage was investigated as one of crucial consideration factors for consumer acceptance. Canned coconut milk was prepared by retorting at 121 °C for 54 min to have F_0 of 5 min and kept at room temperature (30 °C). The sample was taken monthly and volatile compounds were extracted with diethyl ether. The volatile compositions were analyzed by gas chromatography-mass spectrometry (GC-MS) using HP-5 (60 m x 0.25 μ m x 0.25 μ m) and FFAP (60 m x 0.25 μ m x 0.25 μ m) columns. Many Thirty four compounds were identified. The compounds were acids (32.33%), phenol (28.39%), ketone (22.20%), alcohols (6.99%), aldehydes (3.81%), lactones (1.16%) and others (5.12%). The aroma compounds formed during thermal process of coconut milk were 2-furanmethanol, 2-nonanone, tetrahydro-6-methyl-2H-pyran-2-one, pentyl hexanoate, methoxy-phenyl-oxime, tetrahydro-6-propyl-2H-pyran-2-one and 5-decanol. These compounds contributed to cooked, fruity and creamy odors of canned coconut milk after thermal processing. Ten compounds that could have a great impact to canned coconut milk odor due to their more than 1 odor active values (OAV) included 1-butanol, 3-hydroxy-2-butanone, 2-nonanol, nonanal, ethyl octanoate, ethyldecanoate, δ -octalactone, δ -nonalactone, ethyldodecanoate and dodecanoic acid. In the first 2 months, the profile of volatile compounds had not much changed. After 3 months storage, canned coconut milk loss acetic acid and octanoic acid. The strong cooked odor of canned coconut milk developed after 5 months significantly ($p \geq 0.05$). Ethyl octanoate, δ -octalactone, δ -nonalactone and tetrahydro-6-propyl-2H-pyran-2-one had increased from 26.50, 91.05, 642.77 and 4,266.63 ppb in the fourth month to 1,105.15, 141.42, 4,803.49 and 11,772.80 ppb in the fifth month, respectively. The rising of these compounds made the development of fruity, sweet, creamy and coconut-like odor in canned coconut milk. On the other hand, 1-butanol, 3-hydroxy-2-butanone and dodecanoic acid decreased significantly ($p \geq 0.05$), especially 4 months storage, that related to the absent of refreshing, fresh and fruity odors. The results of this work might have an informative data in order to prevent the off-odor formation of canned coconut milk

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