

【抄 録】

題 名 : Nuclear magnetic resonance- and gas chromatography/mass spectrometry-based metabolomic characterization of water-soluble and volatile compound profiles in cabbage vinegar

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要 旨

We explored the possibility of using cabbage for producing vinegar and analyzed the quality characteristics of the vinegar. Cabbage juice -- to which ethanol was added -- was fermented to produce cabbage vinegar by static culturing. As a result, acetic acid fermentation occurred smoothly. In the vinegar produced after 28 days, the yield of acetic acid was 74.2%. DMDS, DMTS, *trans*-2-hexanol, 1-hexanol, *cis*-3-hexen-1-ol, methyl thiocyanate, and allyl isothiocyanate were also detected in the cabbage juice. Small amounts of DMDS, DMTS, and *cis*-3-hexen-1-ol were detected in the cabbage vinegar. It was found that most flavor components volatilized during the acetic acid fermentation. The cabbage vinegar had a 4.45% acidity, with contents of Fructose, Glucose, the 18th amino acids, MMSC; the total amino acid was a high value below rice black vinegar. Various vinegar samples were analyzed by principal component analysis. Of these, 74.5% could be investigated by PC1 and PC2. Factor loading suggested that PC1 was a negative factor, including glucose, umami-tasting amino acid, and bitter-tasting amino acid, and PC2 was a positive factor, exemplified by as fructose. There were differences between the cabbage vinegar and other vinegar samples. These results demonstrate that vinegar produced from cabbage is indeed a novel outcome.