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BOOK OF ABSTRACTS

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THE USE OF SUMMER (*Tuber aestivum*) AND BLACK TRUFFLE (*T. melanosporum*) TO ELABORATE KOMBUCHA BEVERAGE

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Kombucha beverages are considered healthy-foods due to their biological activity. Recently, a wide catalog of kombucha beverages with different foodstuffs has been produced. Truffles are globally valued for their organoleptic properties and some of them contain bioactive compounds. These fungi are divided into commercial categories depending on their physical aspect (UNECE-Standard FFV-53). Therefore, truffle products elaboration might be interesting for those non-commercial truffles. To investigate the production of the beverage, three different symbiotic cultures of bacteria and yeast (SCOBYs) were selected. The kombuchas were elaborated with freeze-dried summer and black-truffles (*Tuber aestivum* and *T. melanosporum*, respectively). During the fermentation (21 days), physicochemical (pH and viscosity), biochemical (ethanol, sugars, proteins, and phenolic compounds) and sensory (volatile organic compounds) parameters were monitored. The studied beverages displayed a decrease in pH value and protein degradation and increased their sugar content as fermentation progressed. A total of 51 VOCs (18 esters, 13 acids, 8 alcohols, 2 aldehydes, 4 alkanes, 4 ketones, and 2 hydrocarbons aromatics) were detected in truffle kombucha beverages. The production of acids, especially acetic and nonanoic acid, and some acetates (ethyl acetate, phenethyl acetate, ethyl isovalerate, and ethyl laurate) increased in all kombuchas. Apparently, the black-truffle kombuchas showed a higher number of VOCs, and the principal component analysis showed more complexity than those fermented with summer-truffle. The molecules hexane, acetic acid, acetoin, and some acetates were selected as markers to control truffle kombucha elaboration. As a result of this study, a new beverage made with black and summer-truffles has been designed.

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