STUDIES ON VOLATILE COMPONENTS AND COLOR OF MONASCUS SUFU PRODUCTS

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ABSTRACT

TAIWAN SUFU IS A TRADITIONALLY FERMENTED SOYBEAN CURD PRODUCT. IT IS ORDINARILY PREPARED USING TOFU AND SOYBEAN MOULDS AND AGING IN THE SALT-SUGAR BRINE SOLUTION WITH ETHANOL. IN THIS STUDY, MONASCUS SUFU WAS PREPARED USING MONASCUS SP-FERMENTED RICE AND AGING IN BRINE SOLUTION WITH OR WITHOUT ETHANOL. FROM THE 75-DAY AGED SUFU PRODUCTS BY SENSORY-EVALUATION ANALYSIS, THE SUITABLE BRINE SOLUTION CONTAINED 20G NACL AND 30G SUGAR WITHOUT ETHANOL. BY VIEWING COLOR EVALUATION, THE ACCEPTABLE BRINE SOLUTION CONTAINED 20G NACL AND 60G SUGAR WITH 40-DEGREE ETHANOL. THE COLOR OF SUFU PRODUCTS CHANGED TO RED AS INCREASING SUGAR CONTENT IN BRINE SOLUTION. IN THIS STUDY, THE VOLATILE COMPOUNDS IN MONASCUS SUFU PRODUCTS WERE IDENTIFIED AND QUANTIFIED BY GC AND GC-MS. A TOTAL OF 55 VOLATILE COMPOUNDS WERE IDENTIFIED INCLUDING 20 ESTERS, 17 ALCOHOLS, 4 KETONES, 4 ACIDS, 4 ALDEHYDES, 3 HYDROCARBONS AND 3 OTHER COMPOUNDS FROM THE 75-DAY AGED SUFU PRODUCTS. FOR MONASCUS SP-FERMENTED RICE, THE TOTAL OF 75 VOLATILE COMPOUNDS WERE IDENTIFIED INCLUDING 17 KETONES, 14 ALCOHOLS, 6 ACIDS, 12 ALDEHYDES, 9 HYDROCARBONS, 1 PYRAZINE, 7 ESTERS AND 9 OTHERS, WHILE THE TOTAL OF 34 VOLATILE COMPOUNDS WERE IDENTIFIED INCLUDING 4 KETONES, 10 ALCOHOLS, 4 ACIDS, 7 ALDEHYDES, 4 HYDROCARBONS, 2 ESTERS AND 3 OTHERS FOR COMMERCIAL TOFU. THE FLAVOR OF MONASCUS SUFU, PARTICULARLY ESTER AND ALCOHOL, INCREASED DURING THE AGEING PERIOD. THIS MAY BE DUE TO THE CONTRIBUTION OF LARGE AMOUNT CONTENTS OF KETONES, ALCOHOLS AND ALDEHYDES IN THE MONASCUS SP-FERMENTED RICE AND TOFU. IN ADDITION, THE IMPACT OF ALCOHOL ON THE FORMATION OF VOLATILE COMPONENTS, PARTICULARLY ESTER, WAS INCREASED AS INCREASING THE CONTENT OF SUGAR ADDITION. UNFORTUNATELY, THE FLAVOR OF SUFU PRODUCTS BECAME NOT ACCEPTABLE AS A SIGNIFICANTLY HIGH AMOUNT OF ALCOHOL WAS ADDED. IN GENERAL, AS THE INCREASE OF SUGAR CONTENT IN BRINE SOLUTION, THE COLOR, FLAVOR AND TEXTURE OF THE MONASCUS SUFU PRODUCTS WAS ENHANCED OR IMPROVED.
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