STUDIES ON THE PREPARATION OF PORK FLAVORED SHALLOT SEASONING OIL.

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ABSTRACT

FRIED SHALLOT OR FRIED SHALLOT SEASONING OIL IS WIDELY USED IN CHINESE FOODS FOR ITS FLAVORING OR SEASONING PROPERTIES. DURING THE OPEN-TYPE FRYING PROCESS FOR SHALLOT SEASONING OIL PREPARATION SIGNIFICANT AMOUNT OF VOLATILE COMPOUNDS WILL LOSS SINCE THE EVAPORATION. UNBROKEN CELLS OF SHALLOT CONTAIN A SIGNIFICANT AMOUNT OF SULFUR-CONTAINING CYSTEINE DERIVATIVES. THESE SULFUR-CONTAINING CYSTEINE DERIVATIVES ARE CONSIDERED TO BE THE FLAVOR PRECURSORS OF SHALLOT. ON CUTTING OR BREAKING OF THE SHALLOT CLOVES, THESE FLAVOR PRECURSORS WILL BE TRANSFORMED TO VOLATILE SULFUR -CONTAINING COMPOUNDS BY FLAVOR ENZYMES TO CONTRIBUTE THE FLAVOR OF SHALLOT PRODUCTS. ON THERMAL TREATMENTS OF SHALLOT BULBS, THE FLAVOR PRECURSORS IN SHALLOT CELLS WILL ALSO BE TRANSFORMED TO VOLATILE SULFUR -CONTAINING COMPOUNDS BY THERMAL BREAKDOWN OR THERMAL REACTIONS OF THESE PRECURSORS. SIGNIFICANT AMOUNT OF THESE FLAVOR PRECURSORS ARE BOUND BY PECTIC SUBSTANCE EXIST IN SHALLOT. AFTER BREAKING DOWN OF THESE PECTIC SUBSTANCE, THE FLAVOR PRECURSORS IN SHALLOT CAN BE RELEASED TO CONTRIBUTE MORE FLAVOR COMPONENTS TO SHALLOT OR SHALLOT PRODUCTS. IN THIS STUDY A PECTIC ENZYME WAS USED TO HYDROLYZE THE PECTIC SUBSTANCE IN SHALLOT JUICE. THE OPTIMAL OR BEST HYDROLYSIS PARAMETERS WERE FOUND TO BE: HYDROLYSIS TEMPERATURE 55 ℃, HYDROLYSIS PH 6, HYDROLYSIS TIME 20 MIN., ENZYME DOSAGE 1% OF THE USED SHALLOT JUICE. THE HYDROLYZED JUICE OF BLANCHED OR UNBLANCHED SHALLOT WAS THEN MIXED WITH THE SAME AMOUNT OF LARD OR CHINSHAN OIL (A FRACTIONATED LARD OIL WITH LESS SATURATED FAT IN IT) AND THEN HEAT IN A CLOSED REACTION STAINLESS CONTAINER WITH STIRRING. THE BEST REACTION PARAMETERS FOR CHINSANG OIL SYSTEM WERE DETERMINED TO BE: ORIGINAL PH OF THE JUICE 5, REACTION TEMPERATURE 140 ℃, REACTION TIME 70 MIN. THE BEST REACTION PARAMETERS FOR LARD SYSTEM WERE DETERMINED TO BE: ORIGINAL PH OF THE JUICE 5, REACTION TEMPERATURE 140 ℃, REACTION TIME 80 MIN. THE ACCEPTANCE OF THE SHALLOT SEASONING OILS PREPARED BY CLOSE THERMAL REACTION WERE COMPARED WITH THOSE PREPARED BY TRADITIONAL FRYING PROCESS. THE ACCEPTANCE OF SHALLOT SEASONING OIL PREPARED BY HEATING THE SHALLOT JUICE HYDROLYSATE IN CHINSAHN OIL AT 140℃ FOR 70 MIN AT A ORIGINAL PH OF 5 WAS FOUND TO BE THE SAME WITH THE SHALLOT SEASONING OIL PREPARED BY FRYING THE BLANCHED SHALLOT SLICES IN CHINSAN OIL WHICH WAS THE MOST ACCEPTED ONE AMONG THE SHALLOT SEASONING SHALLOT PREPARED BY FRYING METHODS. VOLATILE COMPOUNDS IN SHALLOT SEASONING OIL ETHER PREPARED BY FRYING OR THERMAL REACTION METHODS, ETHER HEATED IN LARD OR IN CHINSAN OIL WERE COMPARED IN THIS STUDY. GLUCOSE AND THIAMINE.HCL WERE ADDED TO THE REACTION SYSTEM OF BLANCHED SHALLOT JUICE AND CHINOIL AND THEN HEATED 140℃ FOR 70 MIN AT A ORIGINAL PH OF 5 TO REALIZE IF THESE REACTANTS CAN ENHANCE THE MEATY NOTE OF THE SHALLOT SEASONING OIL. A RESPONSE SURFACE METHODOLOGY METHOD BASED ON THE SENSORY ACCEPTANCE SCORE OF THE FLAVOR QUALITY WAS USED TO STUDY THE BEST ADDITION AMOUNT OF GLUCOSE AND THIAMINE.HCL. THE BEST ADDITION AMOUNT WAS FOUND TO BE 0.2 G FOR THIAMINE.HCL, AND 0.45 G FOR GLUCOSE WHEN 200 G OF THE BLANCHED SHALLOT JUICE HYDROLYSATE WAS HEATED IN 200 G CHINSAHN OIL AT 140℃ FOR 70 MIN AT A ORIGINAL PH OF 5. THE VOLATILE COMPOUNDS GENERATED IN THE ABOVE SYSTEM WERE ISOLATED BY A STEAM DISTILLATION-SOLVENT EXTACTION METHOD AND FRACTIONATED BY USING A ACID/BASE FRACTIONATION METHOD AND THEN ANALYZED BY GC AND GC-MS. THE MEATY NOTE COMPOUNDS GENERATED WHEN GLUCOSE AND THIAMINE.HCL WAS ADDED TO THE BLANCHED SHALLOT HYDROLYSATE-CHINSAN OIL REACTION SYSTEM WERE FOUND TO BE 2-METHYL TETRAHYDROFURAN-3-ONE, 2-METHYL-3-FURANTHIOL, 3,4-DIMETHYLTHIAZOLE, 4-METHYLTHIAZOLE, 4,5-DIMETHYL- -THIAZOLE, AND METHYL

2-METHYL-3-FURYL DISULFIDE.

Keywords : 無

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