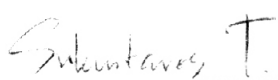
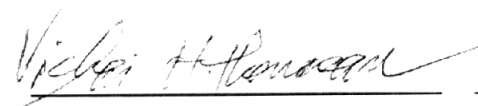


Sukuntaros Tadakittisarn 2007: Process Development of Syrup from Export Disqualified Hom Thong banana [*Musa acuminata* (AAA group) 'Gros Michel']. Doctor of Philosophy (Agro-Industrial Product Development), Major Field: Agro-Industrial Product Development, Department of Product Development. Thesis Advisor: Associate Professor Vichai Haruthaithanasan, M.Sc. 243 pages.

Aim of this study was to develop value added syrup from export disqualified banana. From the preliminary study, consumers were very interested in banana syrup. Thungkawat Gardening Group in Chomporn province was one of the three banana packing station that export to Japan. This group had highest amount of disqualified banana (17 tones per month). In this study, cut fruits were used for developing banana syrup because, they were the majority (63.3%) of the disqualified one. Result of banana ripening determination indicated that total soluble solid could be used in parallel with the peel color index to evaluate the stage of ripen. The ripen banana at stage 7 was used as raw material for syrup production which gave high yield and clear juice. The enzymatic browning activity of polyphenol oxidase was inhibited by blanching the whole unpeeled fruit for 16 minutes for further study. Central Composite Design with 2 factors (concentrations of pectinase enzyme and digestion times) of extraction using 5 levels each was employed to determine optimum condition in extraction of banana juice. Result of response surface methodology indicated highly significant on the extraction, and the optimal condition was 0.15% of pectinase enzyme and incubated for 2 hours at 50^o C which yielded banana juice $62 \pm 0.72\%$ with clarity (%T₆₇₀) 97.8 ± 0.15 and 24^o Brix. Then banana juice was concentrated to 74^o Brix by using the rotary vacuum evaporator 35 min for 100 ml juice. Banana syrup had amber color, clear, viscous and it pH was 5.0. Chemical composition of banana syrup consisted of protein 1.985%, fat 0.68%, carbohydrate 71.6%, ash 3.56% and energy 300 kcal/100g. The banana syrup packed in clear glass jar was recommended to keep at 4^oC. The banana syrup was most accepted by 90% of consumers and 60% of them intended to purchase.



Student's signature



Thesis Advisor's signature

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