

PHYSICO-CHEMICAL AND SENSORY CHARACTERISTICS
OF MIXED PAPAYA AND PINEAPPLE SAUCES

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KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA
MENGABANG TELIPOT
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**PHYSICO-CHEMICAL AND SENSORY CHARACTERISTICS OF MIXED
PAPAYA AND PINEAPPLE SAUCES**

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**RESEARCH PROJECT submitted in partial fulfillment of the requirements for the Degree of
Bachelor of Food Science (Food Service and Nutrition)**

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DECLARATION

I hereby declare that this research project is based on my original work except the quotations and summaries, which have been duly acknowledged.

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ABSTRACT

A new range of sauces were produced towards of two tropical fruits, namely papaya (*Carica papaya*) and pineapple (*Ananas comosus*) in sauces formulation. Beside that, lime (*Citrus aurantifolia*) also used in sauces formulation as an alternative to vinegar. These sauces have been developed to provided selections and alternatives to consumers. Six formulated sauces were produced and studied for physico-chemical and sensory caharacteristics. SAS programme was used to determine the Analysis of Variance (ANOVA) and Duncan's Multiple Range Test (DMRT). Data from the analysis of physico-chemical properties indicated that there are significant difference ($p < 0.05$) for the °Brix analysis, colour analysis, pH analysis, viscosity analysis and total carotenoid analysis. Lightness of the formulated sauces increased with the increased percentage of pineapple incorporated and component of green and yellow colour also found in sauces formulation with increased percentage of the pineapple. For formulated sauces, the pH value varied from 2.98 to 3.48, viscosity value varied from 1.46 to 2.21 ($\times 10^4$ mPas⁻¹), °Brix in the range of 40-46 and total carotenoid value varied from 0.04-0.2 mg / L. For sensory analysis, significant difference ($p < 0.05$) was showed only in attribute colour and viscosity. This showed the other attribute such as sweetness, sourness, combination sweet & sour, taste and overall acceptance did not affected by difference mixed fruits percentages by the panelist. Based on sensory evaluation, the optimum formulation of the mixed fruit sauce was formulation A which made with 70 % of papaya and 30 % of pineapple. Result from this study showed that the mixed fruit sauces can be accepted by the consumer.

CIRI-CIRI FIZIKOKIMIA DAN SENSORI BAGI SOS CAMPURAN BETIK (*Carica papaya*) DAN NENAS (*Ananas comosus*)

ABSTRAK

Kajian ini dijalankan dengan penggunaan dua jenis buah-buahan tropical iaitu betik (*Carica papaya*) dan nanas (*Ananas comosus*) untuk menghasilkan formulasi sos. Selain daripada itu, limau nipis (*Citrus aurantifolia*) juga digunakan sebagai ganti kepada cuka dalam formulasi sos. Enam jenis formulasi sos telah dihasilkan dan ciri-ciri fizikokimia dan penilaian sensori telah dijalankan. Program SAS digunakan untuk melakukan analisis varians (ANOVA) dan *Duncan's Multiple Range Test* (DMRT). Daripada analisis fizikokimia, didapati bahawa terdapat perbezaan yang signifikan ($p < 0.05$) bagi analisis °Brix, warna, pH, kelikatan, dan jumlah karotenoid. Kecerahan bagi formulasi sos meningkat dengan peningkatan kepekatan nenas dan komponen warna hijau dan kuning juga didapati dengan peningkatan kepekatan nenas dalam formulasi sos. Sos yang dihasilkan mempunyai nilai pH dalam 2.98 hingga 3.48, kelikatan dari 1.46 hingga 2.21 ($\times 10^4 \text{ mPas}^{-1}$), °Brix berada dalam 40 hingga 46 dan jumlah carotenoid dari 0.04-0.2 mg / L. Bagi penilaian sensori, atribut warna dan kelikatan menunjukkan perbezaan yang signifikan. Ini menunjukkan bahawa atribut lain seperti kemanisan, kemasaman, kombinasi manis dan masam, rasa dan penerimaan umum tidak dipengaruhi oleh peratusan kuantiti buah oleh pengguna. Berdasarkan penilaian sensori, formulasi optimum bagi sos campuran adalah formulasi A iaitu with 70 % betik dan 30 % nanas. Hasil kajian ini menunjukkan sos campuran buah-buahan boleh diterima oleh pengguna.