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**THE PHYSICOCHEMICAL PROPERTIES AND EFFECT OF  
STORAGE PERIOD ON POWDER PROPERTIES OF INSTANT  
'MASAK LODEH'**

**By**

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## **DECLARATION BY AUTHOR**

This dissertation is composed by my original work, and contains no previously published or written by another person except for reference that has been made in text. The content of my dissertation is the result of work I have carried out since the commencement of my research project and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution.

NUR ILI BINTI HASBULLAH

AUGUST 2021

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## LIST OF ABBREVIATIONS

Abbreviation	Caption
AOAC	The Association of Official Analysis Chemist
Rpm	Revolution per minute
H <sub>R</sub>	Hausner Ratio
Isi	Insolubility Index
AAS	Atomic Absorption Spectroscopy
NRV	Nutrient Reference Value
TPC	Total Plate Count
L	Lightness
a	Redness
b	Yellowness

## **CIRI-CIRI FIZIKOKIMIA DAN KESAN PENYIMPANAN TERHADAP SIFAT SERBUK ‘MASAK LODEH’ SEGERA**

### **ABSTRAK**

Permintaan makanan segera untuk bekalan penduduk dunia mendapat sambutan sejak beberapa dekad yang lalu. Dengan ini, pengembangan dan penemuan formulasi produk baru meningkat secara drastik. Objektif kajian ini adalah untuk mengembangkan dan menganalisis sifat fizikokimia dan kesan penyimpanan terhadap sifat serbuk masak segera. ‘Masak Lodeh’ segera dimasak dan melalui proses pengeringan beku sebelum dikisar menjadi serbuk. Analisis yang dijalankan dalam projek ini adalah indeks warna, kelembapan, ketumpatan pukal, aliran dan ketidaklarutan yang dianalisis pada tempoh penyimpanan yang berbeza. Selanjutnya, komposisi nutrisi, penentuan mineral dan jumlah bilangan plat dilakukan melalui kajian ini. Hasil kelembapan antara 5-7.2% menunjukkan tiada perbezaan sepanjang tempoh penyimpanan sementara itu, warna, ketumpatan pukal, kebolehaliran dan ketidaklarutan menunjukkan perbezaan yang ketara ( $p < 0.05$ ) pada tempoh penyimpanan yang berbeza. Komposisi nutrisi ‘Masak Lodeh’ segera terdiri daripada 50.91% lemak, 8.9% protein, 0.85% abu dan 1.59% serat. Kalsium, kalium dan natrium dianalisis bagi menganalisis mineral. Kepekatan unsur masing-masing ialah 1.13 mg / 100g, 2.92 mg / 100g dan 0.27 mg / 100g. Analisis dari jumlah plat menunjukkan bahawa tahap mikrob adalah selamat untuk dimakan. Analisis sifat serbuk menunjukkan bahawa Masak Lodeh segera mempunyai prestasi berkualiti rendah sebagai serbuk.

## **THE PHYSICOCHEMICAL PROPERTIES AND EFFECT OF STORAGE ON POWDER PROPERTIES OF INSTANT ‘MASAK LODEH’**

### **ABSTRACT**

Convenience foods demand on supply of world’s population has been overwhelming over the past few decades. Therefore, development and invention of formulations of new products has increased drastically. The objectives of this study are to develop and analyze the physicochemical properties and effect of storage on powder properties of instant ‘Masak Lodeh’. Instant ‘Masak Lodeh’ was cooked and subjected to freeze drying before grounded to be powdered ‘Masak Lodeh’. Color, moisture, bulk density, flowability and insolubility index were analyzed on different storage period in this study. Furthermore, proximate composition, mineral determination and total plate count were carried out through this study. The moisture is in range between 5-7.2% shows no different along the storage period meanwhile, color, bulk density, flowability and insolubility index shows significant difference ( $p < 0.05$ ) on different storage period. The proximate compositions of instant ‘Masak Lodeh’ consists of 50.91% fat, 8.9% protein, 0.85% ash and 1.59% fibre. For mineral determination, calcium, potassium and sodium were analyzed. The concentrations of the elements were 1.13 mg/100g, 2.92 mg/100g and 0.27 mg/100g respectively. Analysis from total plate count shows the indication of microbial level is safe to consume. Powder properties analysis shows that Instant ‘Masak Lodeh’ has low quality performance as a powder.