

EFFECT OF WASHING AND SALT ADDITIONS ON THE PROPERTIES OF
GEL FROM SILVER CATFISH (*Pangasius* sp.) SURIMI

By

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Research Report submitted in partial fulfillment of the requirement for the degree of
Bachelor of Food Science (Food Technology)

DEPARTMENT OF FOOD SCIENCE

FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE

UNIVERSITI MALAYSIA TERENGGANU

2012

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ENDORSEMENT

The project report entitled **Effect of Washing and Salt Additions on Gel Forming Ability of Silver Catfish Surimi (*Pangasius sp.*)** by **Nur Ain binti Kamarudin**, Matric No. **UK17541** has been reviewed and corrections have been made according to the recommendations by examiners. This report is submitted to the Department of Food Science in partial fulfillment of the requirement of the degree of Food Science (Food Technology), Faculty of Agrotechnology and Food Science, Universiti Malaysia Terengganu.



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DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged

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ACKNOWLEDGEMENTS

I would like to express my gratitude to my supervisor, Assoc. Prof. Dr. Amiza Mat Amin, for her guidance throughout all aspects of this final year project. She provided me with great opportunities and experiences for developing my skills during this project. She also helped me learn to handle problems on my own and to approach challenges from a variety of angles.

My thanks to Dr. Yusnita binti Hamzah and Miss Zuraidah Nasution as project coordinators and all of the staffs of Food Science Department for their kindness, support and help. Sincere appreciation is also extended to my family and friends for their love, support and encouragement during performing my final year project.

Abstract

The objective of this study was to determine the effect of washing cycles (1,2,3 and 4 cycles) and addition of sodium pyrophosphate (PP) addition (0%, 0.05% and 0.1% w/w) with or without addition of 50 mmol/kg CaCl_2 on the properties of surimi gel from silver catfish (*Pangasius sp.*). This study shows that the deformation, breaking force, gel strength, water holding capacity of silver catfish surimi gel improved with washing cycles until three washing cycles and then decreased afterwards. However, for whiteness properties, both three and four washing cycles gave similar whiteness. The gel strength of surimi gel was highest after three washing cycle without any salt addition (control). However, surimi gels added with 0.05% PP alone gave highest breaking force, deformation and water holding capacity compared to other gels. It was found that the presence of CaCl_2 decreased the deformation of gels. While, whiteness of surimi gels added with CaCl_2 were higher than those without CaCl_2 . The highest whiteness was given by gel with four washing cycles and 50 mmol/kg CaCl_2 . This study shows that number of washing cycles and addition of PP and CaCl_2 treatment affected the properties of surimi gels.

Abstrak

Tujuan kajian ini adalah untuk menentukan kesan kitaran basuhan (1,2,3 dan 4 kitaran) dan penambahan sodium pyrophosphate (PP) pada tahap (0%, 0.05% dan 0.1%w/w) dengan atau tanpa penambahan 50mmol/kg CaCl_2 ke atas ciri-ciri gel daripada surimi ikan patin (*Pangasius sp.*). Kajian ini menunjukkan pembentukan, daya tahan pecah, kekuatan gel, kebolehpayaan memegang air bagi surimi ikan patin meningkat sehingga basuhan ketiga dan menurun selepas basuhan ketiga. Walau bagaimanapun, untuk tahap keputihan warna surimi, kedua-dua basuhan pada kitaran tiga dan empat memberikan tahap keputihan yang sama. Kekuatan gel paling tinggi pada basuhan ketiga tanpa penambahan garam (kawalan). Bagaimanapun, gel surimi yang ditambah dengan 0.05%PP sahaja memberikan tekstur dan kebolehpayaan memegang air yang tinggi berbanding gel-gel lain. Hal ini menunjukkan penambahan CaCl_2 mengurangkan pembentukan gel surimi. Sementara itu, tahap keputihan warna paling tinggi bagi gel surimi yang dibasuh pada sehingga kitaran empat dan ditambah dengan 50mmol/kg CaCl_2 . Kajian ini menunjukkan tahap kitaran basuhan dan penambahan PP dan CaCl_2 memberi kesan pada gel surimi.