

PRODUCTION OF PHARMACEUTICAL HARD CAPSULE SHELL FROM CORN STARCH

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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There is a growing interest in the consumption of non-animal capsule. Most of non-animal capsule is produced from Hydroxypropyl Methylcellulose (HPMC). However, the material is relatively more expensive. The aim of this research is to produce hard capsule shell from other material which is readily available in Indonesia. The availability of corn in Indonesia in large amount and in a reasonable price made it an interesting source for capsule shell material. The hard capsules obtained with a conventional dipping molding process. The materials used in this research are corn starch, glycerol, carrageenan and demineralized water. Hard capsules shell can be produced with composition of corn starch 20%, glycerol 5.3%, carrageenan 0.5% and demineralized water 74.2%. The capsules have opaque appearance and are elastic but they are not as strong as gelatin capsules. The performance of corn starch capsules was compared to gelatin capsules. The disintegration time of corn starch capsule is 576 ± 72 seconds; the thickness is 0.38 ± 0.05 mm and the moisture content is $10.96 \pm 1.17\%$. The overall performances are within acceptable limit except for thickness.

DEDICATION

I dedicate this thesis to my family, my mentors, Swiss German University and also for all people who have supported me during my study. I hope this thesis will be a very useful guide for the next research in pharmaceutical field.



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