

***STUDIES ON THE CHARACTERIZATION AND ANTIOXIDANT  
PROPERTIES OF BIODEGRADABLE ALGINATE FILM  
CONTAINING INDIAN GOOSEBERRY EXTRACT AND ITS  
EFFECT AS AN ANTIOXIDANT ON STORAGE STABILITY OF  
BUTTER***

BY

RUPSHIKHA KALITA (Roll No. FPT 09008)

THESIS SUBMITTED TO THE  
DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY  
TEZPUR UNIVERSITY


IN PARTIAL FULFILMENT OF THE REQUIREMENT  
FOR THE AWARD OF THE DEGREE OF

MASTER OF TECHNOLOGY


IN

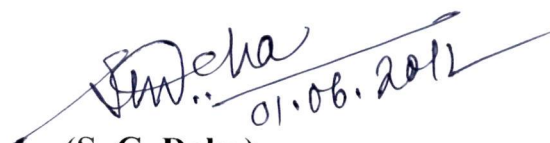
FOOD PROCESSING TECHNOLOGY

Approved by

  
15/5/12

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IIT, Kharagpur

  
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Supervisor

  
01.06.2012

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### Certificate of the Head of the department

This is to certify that Ms. Rupshikha Kalita a student of the Department of Food Engineering and Technology, Tezpur University, Assam has successfully submitted the project work entitled **“Studies on the characterization and antioxidant properties of biodegradable alginate film containing Indian gooseberry extract and its effect as an antioxidant on storage stability of butter”** as a part of partial fulfilment of her M. Tech. In Food Engineering Technology under the complete supervision of Mrs. Poonam Mishra, Assistant Professor, Department of Food Engineering and Technology, Tezpur University, Tezpur.

Place: Tezpur University

Date:

01.06.2012

  
(Prof. S. C. Deka)



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### Certificate by the Supervisor

I certify that the project entitled “**Studies on the characterization and antioxidant properties of biodegradable alginate film containing Indian gooseberry extract and its effect as an antioxidant on storage stability of butter**” submitted by Ms. Rupshikha Kalita (FPT09008) to the Department of Food Engineering and Technology, Tezpur University, in partial fulfilment of M.Tech. Degree embodies the record of original investigation carried out by her under my supervision. To the best of my knowledge the project embodies account for her own findings and has not been submitted previously anywhere for any degree whatsoever by either her or anyone else.

Place: Tezpur University

*Poonam Mishra*  
(Mrs. Poonam Mishra)

## DECLARATION

I hereby declare that the project work entitled **“Studies on the characterization and antioxidant properties of biodegradable alginate film containing Indian gooseberry extract and its effect as an antioxidant on storage stability of butter”**, was carried out by me at the Department of Food Engineering and Technology, Tezpur University, Tezpur under the guidance of Mrs. Poonam Mishra, Assistant professor, Department of Food Engineering and Technology, Tezpur University, Tezpur.

This project report is being submitted as a partial fulfilment of the requirements for the award of **“MASTER OF TECHNOLOGY in FOOD ENGINEERING AND TECHNOLOGY”** Tezpur University, Tezpur.

I further declare that this project or any part of it has not been submitted elsewhere for any other degree or diploma to any other University/Institute.

Place:

*Rupshikha Kalita*  
Rupshikha Kalita

Date:

Roll No. FPT09008

## ACKNOWLEDGMENT

I consider it as a great privilege to express a few words of gratitude and respect to all those who guided and inspired me in completion of my project.

Here I make an honest attempt to express my deepest gratitude to all those who helped me for the successful completion of my project.

I would like to take this opportunity to express my thanks to sincere gratitude and heartiest thanks to my project supervisor Mrs. Poonam Mishra, Assistant Professor Department of Food Engineering and Technology, Tezpur University, for her support and valuable suggestions, without her guidance and encouragement, this project would not have been possible.

With great sincerity, I express my gratitude and thanks to Dr. Sankar Chandra Deka, Professor and Head, Department of Food Engineering and Technology, Dr. Charu Lata Mahanta, Professor, Mr. Dibyakant Seth, Assistant professor, Mr. Kshirod Kr. Das, Assistant Professor, Dr. Manuj Kr. Hazarika, Associate Professor, Mr. Nandan Sit, Assistant Professor, Mr. Laxmikant Badwaik, Associate Professor, Dr. Rajkumar Duary, Assistant Professor and Dr. B. Srivastava, Associate Professor, for their helpful suggestions throughout the study whenever I needed.

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Lastly I would like to thank my Parents and my family members for their support and then all my classmates for their encouragement throughout the work.

Place:

*Rupshikha Kalita*  
Rupshikha Kalita

Date: