


**Development of a methodology for production of wine from black rice  
and utilization of black rice husk**

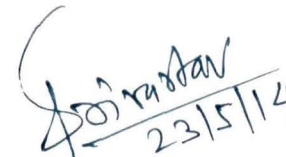
*A thesis submitted to the  
Department of Food Engineering and Technology, Tezpur University  
in partial fulfilment of the requirements for the award of the degree  
of*

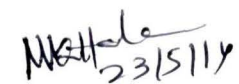
**MASTER OF TECHNOLOGY  
IN  
FOOD ENGINEERING AND TECHNOLOGY**

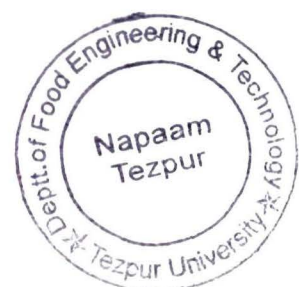
**BY  
PANKAJ JHA  
(FPL12018)**

**Approved by**

  
**(S.C. DEKA)**  
**SUPERVISOR**

  
**EXTERNAL EXAMINER**

  
**(M.K. HAZARIKA)**  
**HEAD**





# TEZPUR UNIVERSITY

(A Central University)  
NAPAAM, TEZPUR - 784028  
DISTRICT: SONITPUR, ASSAM, INDIA

**Dr. Manuj Kumar Hazarika**  
Associate Professor and Head  
Department of Food Engineering and Technology

---

## CERTIFICATE OF THE HEAD OF THE DEPARTMENT

This is to certify that **Mr.Pankaj Jha (FPL12018)**, a student of the **Department of Food Engineering and Technology, Tezpur University, Assam** has successfully completed the M. Tech. project work entitled “**DEVELOPMENT OF A METHODOLOGY FOR PRODUCTION OF WINE FROM BLACK RICE AND UTILIZATION OF BLACK RICE HUSK**” as a partial fulfilment for the award of **Master of Technology** degree in **Food Engineering and Technology** under the supervision of **Prof. S. C. Deka, Department of Food Engineering and Technology, Tezpur University, Tezpur.**

Place: Tezpur University

Date: 23/5/14

  
(M.K. Hazarika)

Head



## TEZPUR UNIVERSITY

(A Central University)  
NAPAAM, TEZPUR – 784028  
DISTRICT: SONITPUR, ASSAM, INDIA

Prof. S.C. Deka

Department of Food Engineering and Technology

---

### CERTIFICATE OF THE SUPERVISOR

This is to certify that **Mr.Pankaj Jha (FPL12018)**, a student of the **Department of Food Engineering and Technology, Tezpur University, Assam** has successfully completed the M. Tech. project work entitled “**DEVELOPMENT OF A METHODOLOGY FOR PRODUCTION OF WINE FROM BLACK RICE AND UTILIZATION OF BLACK RICE HUSK**” as a partial fulfilment for the award of **Master of Technology** degree in **Food Engineering and Technology** under my supervision. To the best of my knowledge the thesis embodies an account for his findings and is valid for the purpose for which it is submitted.

Place: Tezpur University

Date: 23.5.2014

(S.C. Deka)  
Supervisor

## DECLARATION

I hereby declare that the thesis entitled“ **DEVELOPMENT OF A METHODOLOGY FOR PRODUCTION OF WINE FROM BLACK RICE AND UTILIZATION OF BLACK RICE HUSK**” was carried out by me at the Department of Food Engineering and Technology, Tezpur University, Tezpur under the guidance of Prof. S. C. Deka, Department of Food Engineering and Technology, Tezpur University, Tezpur.

This Report is being submitted as a M. Tech. project thesis for the partial fulfillment of M. Tech. degree in Food Engineering and Technology by 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: Tezpur.

Date 05-06-2014



Pankaj Jha

Roll No- FPL12018.

## AKNOWLEDGEMENTS

I am overwhelmed to avail this rare opportunity to evince my profound sense of gratitude and regard to my advisor Prof. S. C. Deka, Dept. of Food Engineering and Technology, Tezpur University, Tezpur for his disciplined attitude, inspiring and valuable guidance, authentic suggestions with constructive criticism and soothing affection time throughout the course of investigation and preparation of this manuscript.

With great sincerity, I extend my gratitude and thanks to Dr M. K. Hazarika, Head of the Department of Food Engineering and Technology, Tezpur University, who helped me with every support throughout the study whenever I sought for.

I would like to thank all the faculty members, Department of Food Engineering and Technology, Tezpur University, who directly or indirectly helped me for successful completion of my project work.

Special thanks to AICTE for providing financial assistance in the form of GATE scholarship during the course of my M.Tech degree.

I further express my sincere thanks to the Arup Jyoti Das of this department for their help throughout the entire project work.

Lastly I would like to thank my Parents along my family members and all my classmates for their constant support for my success.

Place: Tezpur.



Pankaj Jha

Roll No- FPL12018.