

論文審査の要旨

(Summary of Dissertation Evaluation)

博士の専攻分野の名称 (Degree)	博 士 (工学)	氏名 (Candidate Name)	MEHEDI HASAN
学位授与の要件	学位規則第 4 条第 1 項 2 項該当		
論 文 題 目 (Title of Dissertation) Development of Extracting Methods to Improve Nutritional Compounds in Germinated Brown Rice (発芽玄米に由来する栄養成分を向上する抽出方法の開発に関する研究)			
論文審査担当者 (The Dissertation Committee) 主 査 教授 Tran Dang Xuan 審 査 委 員 教授 Ichihashi Masaru (Graduate School of Humanities and Social Sciences) 審 査 委 員 教授 Lee Han Soo 審 査 委 員 准教授 Saori Kashima 審 査 委 員 特任助教 La Hoang Anh			
〔論文審査の要旨〕 (Summary of the Dissertation Evaluation) The study aimed to evaluate the impact of various extraction techniques on the nutritional components found in germinated brown rice (GBR), along with white and brown rice. The dissertation is structured into six chapters. Chapter 1 provides an overall introduction; Chapter 2 focuses on the extraction and measurement of momilactones, tricin, and p-coumaric acid from rice (<i>Oryza sativa</i> L. var. Koshihikari); Chapter 3 discusses how salinity treatments enhance the levels of momilactones and phenolic compounds in germinated brown rice; Chapter 4 examines the potential benefits of germinated brown rice under salinity stress, including its antioxidant, anti-diabetic, and anti-skin aging properties; Chapter 5 investigates the enrichment and optimized extraction of momilactones and phenolics in brown rice, along with their antioxidant and anti-diabetic effects; and Chapter 6 offers a comprehensive discussion of the findings. The study successfully identified and quantified momilactone A and B, tricin, and p-coumaric acid in white, brown, and germinated brown rice. It was discovered for the first time that germinated brown rice contains the highest levels of momilactone A and B. The research identified an optimal treatment condition (75 mM NaCl and 4 days of germination) that significantly boosts the levels of key bioactive compounds, including phenolics and momilactones A and B. After evaluating the candidate's interview responses and the revisions made to the dissertation, all the committee members unanimously judged that the candidate is qualified to receive the degree of "Doctor of Philosophy in Engineering."			

備考：審査の要旨は、1,500 字以内とする。