

論文審査の要旨
Summary of Dissertation Review

博士の専攻分野の名称 Degree	博 士 (農学)	氏名 Author	NGUYEN THANH QUAN
学位授与の要件	学位規則第4条第①・2項該当		
論文題目 Title of Dissertation	Application of Exogenous Phenolics for Drought Tolerance Improvement in Rice(<i>Oryza sativa</i> L.)		
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〔論文審査の要旨〕 Summary of Dissertation Review			
<p>This research was carried out to examine the possible roles of secondary metabolites to the drought tolerance in rice and examined the possibility of applying endogenous phenolic acids to enhance the levels of drought tolerance for rice cultivars. The thesis included 5 Chapters, of which the Chapter 1 was the introduction – application of exogenous phenolics for drought tolerance improvement in rice; Chapter 2: Involvement of secondary metabolites in response to drought stress of rice; Chapter 3: Foliar application of vanillic acid and <i>p</i>-hydroxybenzoic acid enhanced drought tolerance and formation of phytoalexin momilactones in rice; Chapter 4: Onsite team project-revitalization of Kita-Hiroshima by eco-tourism; and Chapter 5: General discussion.</p> <p>This study selected two rice cultivars, Q8 was the drought tolerant and Q2 was the susceptible variety to drought. By analytical analyses, total phenols, total flavonoids, antioxidant capacity, and contents of individual phenolic acids were found proportional to the drought tolerant level of Q8. In addition, two phenolic acids including vanillic acid and <i>p</i>-hydroxybenzoic acid were foliar-sprayed at different doses and the drought tolerance of Q8 and Q2 were examined. It was found that the two phenolic acids significantly enhanced the tolerance of rice in water deficit stress, as well as quantities of the two phytoalexin momilactones A and B.</p> <p>Findings of this research revealed that the application of vanillic acid and <i>p</i>-hydroxybenzoic acid effectively promoted the drought tolerance in rice. The two compounds are non-costly available which can practically aid farmers in developing countries to prevent affects from drought to rice production.</p> <p>The examined committee agreed that the applicant is fully qualified to be awarded the degree of Doctor of Agriculture.</p>			