

論文審査の要旨
Summary of Dissertation Review

博士の専攻分野の名称 Degree	博 士 (学術)	氏名 Author	PHUNG THI TUYEN
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 Determination of Bioactive Substances in Fagaceous Plants			
論文審査担当者 Dissertation Committee Member			
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〔論文審査の要旨〕 Summary of Dissertation Review			
<p>This research was conducted to examine the chemical composition of plant parts of Fagaceous plants, consisting of different species growing in Japan and Vietnam. Plant parts were extracted with different solvents and measured for total phenolic and flavonoid contents and antioxidant activities. Continuously, these extracts were further separated by column chromatography and examined for their biological activities including antioxidant, herbicidal, antifungal and antibacterial activities. Modern analytical instruments such as HPLC, GC-MS, and ^1H NMR and ^{13}C NMR were applied to determine the chemical structures of novel compounds isolated from plant parts of the Fagaceous plants.</p> <p>The trials to examine the potent use of Fagaceous plants for weed control were also conducted in laboratory and greenhouse. Interestingly, plant parts of the Fagaceous plants were more effective on monocot more than dicot weeds, suggesting that it may be a useful source to reduce weed emergence in fields. The examinee also successfully isolated a new compound, that its structure was confirmed by analytical instruments to be (<i>cis</i>)-sesquaur-11-en-2β,3β,5α triol, an ursine-type triperpene, was isolated from methanol leaf extract of <i>Castanea crenata</i>. It was observed that this compound was more five-fold inhibitor on seedling growth of barnyardgrass (2.62 and 0.41 mM on shoot and root lengths, respectively) than <i>p</i>-hydroxybenzoic did (15.33 and 2.11 mM on shoot and root lengths, respectively). This novel compound may be potent to develop natural herbicides to control barnyardgrass. This study reveals potential use of plant parts of the Fagaceous plants for biological control of pests and weeds, as well as pharmaceutical purpose.</p> <p>The examined committee agreed that the applicant is fully qualified to be awarded the degree of Doctor of Philosophy.</p>			