

Comparison of Phenolic Compounds Contents according to Region (Korea and Japan) in The Adzuki Bean

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한국과 일본 재래종 팥의 phenolic compounds 함량 비교

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Objectives

These day leguminous seeds are an important source of nutrient compounds. Adzuki beans are leguminous crops as well as a popular materials in various confections.

The purpose of this research was comparison of the phenolic compounds in the adzuki beans by region (Korea and Japan).

Materials and Methods

○ Material

The adzuki beans which were used this experiments were donated by The RDA-Genebank Information Center.

○ Method

<Phenolic compounds의 분석>

• Sample treatment

1. The ground adzuki bean samples(2g) were extracted with extraction solvent(10mL of ACN, 2mL of 0.1N HCL) and shaking for 2hours at room temperature.
2. The extract was filtered through NO.2 whatman filter paper and concentrated using a vaccum evaporator at 40°C.
3. The residues were redissolved with 10mL of 100% MeOH and filterig through 0.2um nylon membrane syringe filter.

<Conditions for phenolic compounds analysis by HPLC>

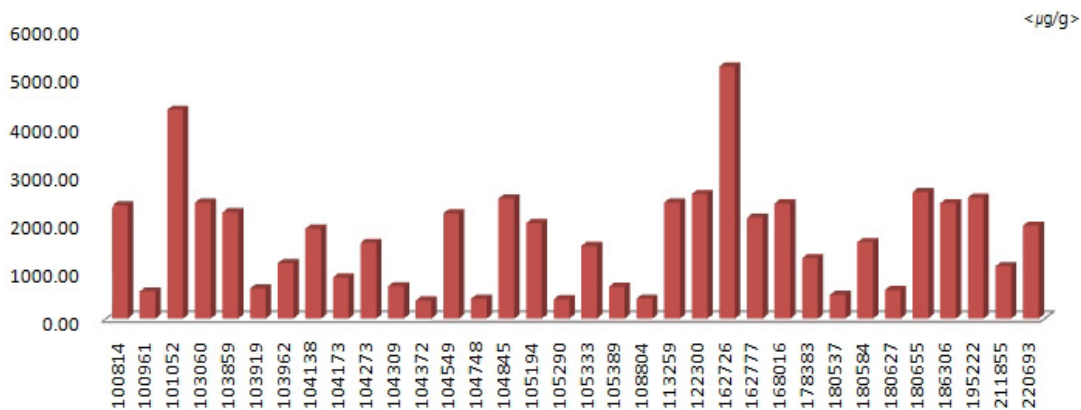
Item	Condition
HPLC	Shidmadzu Instruments Co. Ltd, Japan
Detector	SPA-M10A VP(Photo Diode Array Detector
Column	YMC-Pack ODS AM-303(5um, 250mm * 4.6mm I.D)
Flow rate	1ml / min
Injection volume	20ul
Analysis time	60min
Eluent	Solvent A: Distilled water with 0.1% glacial acetic acid. Solvent B: ACN with 0.1% glacial acetic acid.

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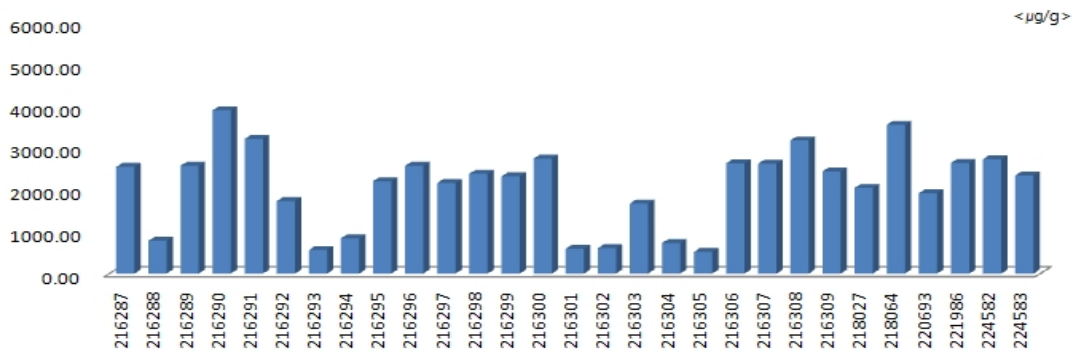
Results and Discussion

- Korea and Japanese native adzuki beans were analyzed and compared each samples(Korea: 34 varieties, Japanese: 29 varieties). Among the Korean native adzuki bean samples, No.162726 was showed the highest content(5242.51 $\mu\text{g/g}$), and among the Japanese native adzuki bean samples, No.216290 was showed the highest content(3925.53 $\mu\text{g/g}$).

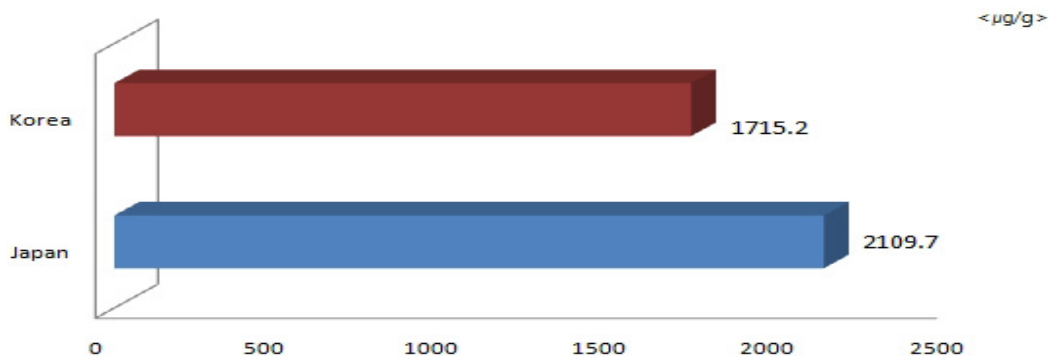
- The result showed that average of phenolic compounds content in Japanese native adzuki beans(2109.7 μg) was higher than average of phenolic compounds content in Korean native adzuki beans(1715.2 μg).



<Fig1. Contents of the total phenolic compounds in Korea adzuki beans. >



<Fig2. Contents of the total phenolic compounds in Japanese adzuki beans>



<Fig3. Comparison of the total phenolic compounds contents. >