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Comparison of Anthocyanin Contents According to Region (Korea and Japan) in The Adzuki Bean

Department of Applied Life Science, Konkuk University

Sung-hyun Song, Eun-Hye Kim, Jung-woong Kwon, Soo-Jung Yong, Suk-Jun Jung, Ye-Ji Lee, Ha-Jung Kim, Ill-Min Chung*

한국과 일본 재래종 팥의 phenolic compounds 함량 비교

건국대학교 : 송성현, 김은혜, 권정웅, 용수정,
정석준, 이예지, 김하정, 송홍근, 안종국, 정일민*

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 anthocyanin 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

<Analysis of anthocyanin>

• Sample treatment

1. The ground adzuki bean samples(0.2g) were extracted by 2mL of 80% methanol containing 1% HCl for 24hours at 4℃.
2. The extract was centrifuged for 10min. (1300rpm)
3. The supernatnat was filtered thouugh a 0.45㎛ membrane filter (Nylon, TITAN)

<Conditions for phenolic compounds analysis by HPLC>

Item	Condition
HPLC	Shidmadzu Instruments Co. Ltd, Japan
Detector	SPA-M10A VP(Photo Diode Array Detector
Column	Sepax BR-C18 (4.6×150 mm I.D.)
Flow rate	1ml / min
Injection volume	20 μL
Analysis time	20min
Eluent	Solvent A : 5% formic acid in distilled water Solvent B : pure MeOH

Corresponding author : Ill-min Chung E-mail : imcim@konkuk.ac.kr Tel : 02-450-3730

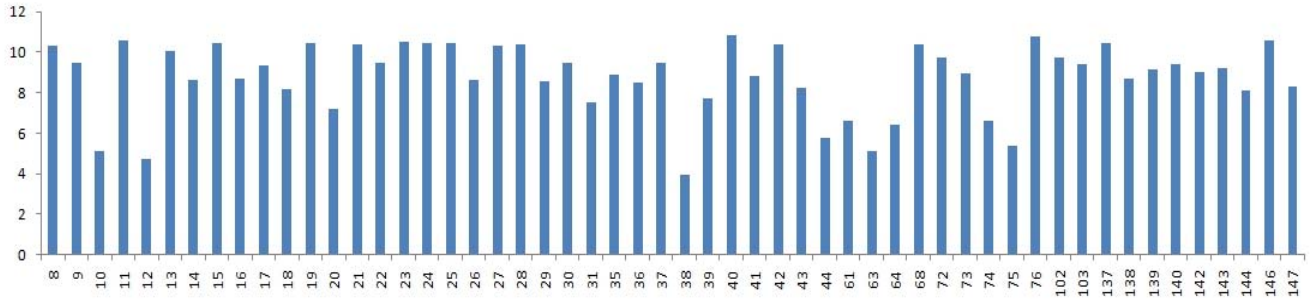
Results and Discussion

The result of compared to between total anthocyanyn content of Korae and Japan adzuki bean samples was that Japan adzuki bean samples(473.5828 μg g^{-1}) are larger than Korea adzuki bean samples(550.1561 μg g^{-1}).

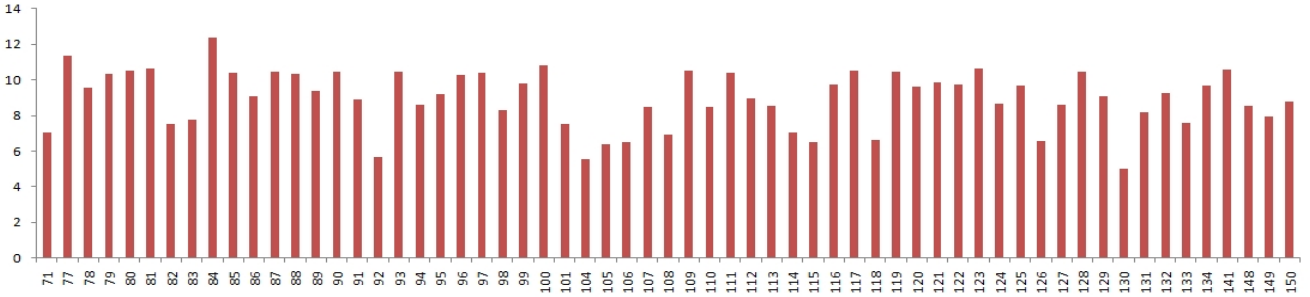
Among the Korae adzuki bean samples , No.40 (IT1785091) showed the highest total ansthocyanin content (10.8296 μg g^{-1}). In this sample, P-3-G is a chemical of the most content (3.9861 μg g^{-1}) in anthocyanin compounds.

Among the Japan adzuki bean samples , No.84 (IT216291) showed the highest total ansthocyanin content (12.3514 μg g^{-1}). In this sample, P-3-G is a chemical of the most content (3.9416 μg g^{-1}) in anthocyanin compounds.

Average of total anthocyanin content of Korae adzuki bean and Japan adzuki bean are 8.77 μg g^{-1} and 8.972 μg g^{-1} respectvely. In this result showed that average of total anthocyanin content of Korae adzuki bean is slightly larger than Japan adzuki bean.



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



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