

Fatty Acid Composition and Contents of Functional Compounds in Perilla Germplasm

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[Introduction]

This experiment was conducted to investigate the fatty acid composition and functional compounds of perilla (*Perilla frutescens* (L.) Britton) germplasm. Perilla seed contain high level of fat and linolenic acid and functional compounds such as rosemarin acid, luteolin, and apigenin.

[Materials and Methods]

For the analysis, seeds of 313 accessions including perilla cultivars, germplasm and crossing block harvested in 2016. The seeds were crushed and extracted with hexane and the crude oil content was measured. The fatty acid composition ratio was analyzed by GC(Gas Chromatography). The contents of rosemarinic acid, luteolin, and apigenin were analyzed by HPLC(High Performance Liquid Chromatography).

[Results and Discussions]

The crude oil content was the lowest in YCPL833(14.9%) and was the highest in the YCPL253(53.9%). And the content of linolenic acid among 313 accessions ranges from 52.3%(YCPL253) as lowest to 68.3%(YCPL665) as highest. Rosemarinic acid and luteolin have a whitening effect on the skin, and apigenin has a anti-carcinogenic. Analysis of rosemarinic acid showed that IT218819 was the lowest (856.6ug/g) and IT215256 was the highest (5387ug/g). YCPL316 had the highest contents of luteolin(1521.8ug/g) and YCPL460 had the highest contents of apigenin(606.2ug/g).

These accessions would be a good crossing parents to improve the quality of perilla seeds in breeding programs.

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