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Variation of Soymilk Quality of Soybean Varieties Using Small-scale Evaluation Method

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[Introduction]

Soybean is mainly used as raw materials for processed foods such as tofu and soymilk in Korea. Since soymilk is a suspension from which the water-soluble solids of soybeans are extracted, the seed composition plays an important role in processing characteristics. In the previous study, we developed a method for processing soymilk with a small amount of soybean seeds. The purpose of this study was to investigate the variation of soymilk processing characteristics of domestic varieties using the method developed in previous study.

[Materials and Methods]

32 domestic soybean varieties were used to make soymilk. Soymilk was prepared in the following method; Firstly, soybean powder was made by grinding each soybean variety, and then soaked in water (v:v=1:12) and sonicated for an hour. After then, the residue was separated by centrifugation at a speed of 2,000 rpm for 2 minutes. Finally, the soymilk obtained after separation of residue was boiled in a water bath for 30 minutes. The soymilk made after residue separation was sufficiently cooled to 4°C, and then the volume and soluble solid content were measured. The yield of soymilk was calculated by dividing the volume of the produced soymilk by the amount of seed powder added (%), and the solid content was measured with a refractometer (brix). The solid content recovery rate was calculated by dividing the solid content remaining in the soymilk by the amount of seed powder added (%).

[Results and Discussion]

The soymilk yield was in the range of 1,095 to 1,170%, with 'Taecheong' showed the highest, and 'Pungwon' had the lowest yield. The solid content ranged from 5.3 to 6.2 brix, 'Taecheong' showed the highest content among the varieties, and 'Shinhwa' and 'Socheongja' showed the lowest. The recovery rate of solid content was found to be in the range of 59.6 to 72.8%, and 'Taecheong' was also found to be the highest among the varieties used in the study. Considering the results, the variety that showed the best characteristics for soymilk processing was 'Taecheong', which had the highest yield, solid content, and solid content recovery rate.

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