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Variation and stability of agricultural characteristics in soybean landraces and cultivars

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Abstract

This experiment was performed to analyze variation of growth traits of soybean to determine the information of less sensitive traits under different environmental conditions. Sowing was carried out on June 2 each year and the experimental plot was laid out in three replicates by randomized complete block design with thirty soybean varieties which consisted of 19 cultivars for beancurd and soypaste, 8 cultivars for soy-sprout including 1 landrace, and 3 cultivars for cooking with rice including 1 landrace during the period 2014-2015. The weather conditions during the experimental period were quite different with extremely low precipitation and longer sunshine duration in 2015 than 2014. The variation of characteristics related to growth period such as days of growth, days of maturity, days of flowering and the 100-seed weight was less in spite of different environmental conditions. While the variation of the number of pods per plant was high. Considering growth and seed characteristics like the number of pods per plant, the number of seeds per pod and 100-seed weight which are linked directly to the yield, cultivars such as Shingi, Daewonkong, Danbaegkong, and Daepung for beancurd and soypaste, Pungwon, Haepum and Shingang for soy-sprout and Seoritae for cooking with rice were more stable and could be expected to have high yield in Suwon, the south-central part of South Korea. These results could be useful for the selection of breeding resources to develop cultivars with high stability under changeable weather condition.

Keywords: soybean, characteristics, variation, stability, cultivar

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