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## Comparison of Agricultural Traits and Yield of Major Soybean Varieties in Central Region

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### [Introduction]

Soybeans are very high protein crops. About 40% is made up of protein, so it has high nutritional value. Compared to rice, the income is about 30% higher. Recently, the government is pushing for a policy to increase the self-sufficiency rate of edible soybeans to 40% by 2027 by expanding the area of rice paddy soybean cultivation, such as wheat-soybean double-cropping. Therefore, this trial was conducted to contribute to the expansion of farm household income and soybean cultivation area by selecting suitable soybean varieties for each region.

### [Material and Methods]

This trial was conducted at three farms in Wonju-si, Gangwon province, Taean-gun, Chungnam province, and Nonsan-si, Chungnam province for two years from 2021 to 2022. Wonju and Taean cultivated 'Cheongja 5', 'Seonpung', 'Daechan', 'Seonyu 2', and 'Daewon', while Nonsan cultivated Seonpung, 'Daechan', and 'Cheongja 5' and compared each other. Sowing date, planting density, and cultivation method were applied to the local customary farming method. Wonju and Taean are single cropping, and Nonsan was cultivated after wheat.

### [Results and Discussion]

The results of analyzing the average agricultural traits and yield by region for two years are as follows. In Wonju, the yield was high in the order of 'Seonpung', 'Daewon', 'Cheongja 5', 'Seonyu 2', and 'Daechan', and it ranged from 365 to 296 kg/10a. The yield of 'Daechan' was 296 kg/10a, which was lower than the result of the regional adaptation test, and there was no significant difference in the rest. The first height of the pod, which is important for mechanization work, was the highest at 17 cm in 'Cheongja 5', and the lowest at 13 cm in 'Seonyu 2'. The first pod height of the 'Seonpung' was high at 18 cm in the regional adaptation test, but measured low at 15 cm in Wonju. In Taean, the yield was high in the order of 'Cheongja 5', 'Daewon', 'Seonpung', and 'Seonyu 2', and 'Daechan', and the range was 317 to 251 kg/10a. Among them, 'Daechan' and 'Seonyu 2' were measured to be more than 80 kg lower in yield than the regional adaptation test. The first height of pods was 'Cheongja 5', 'Seonyu 2', 'Seonpung', 'Daechan', and 'Daewon', and all varieties were higher than the results of the regional adaptation test. In particular, 'Seonyu 2' and 'Daechan' showed a difference of more than 5 cm. In Nonsan, the yield was 'Cheongja 5', 'Daechan', and 'Seonpung', and 'Cheongja 5' was 417 kg/10a, which was more than 70 kg higher than the regional adaptation test. The first height of the pod was in the order of 'Seonpung', 'Cheongja 5', and 'Daechan', and 'Cheongja 5' was measured more than 5 cm lower than the result of the regional adaptation test. Based on the results, 'Cheongja 5' was identified as a suitable soybean variety in all areas of Wonju, Taean, and Nonsan. Next, in Wonju, 'Daechan' was a suitable variety, and in Taean and Nonsan, 'Seonpung' was judged to be suitable.

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