

Variance of Agronomical Quantitative Traits in Mung Bean (*Vigna radiata* (L.) R. Wilczek var. *radiata*) Germplasm

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Mung bean (*Vigna radiata* (L.) R. Wilczek var. *radiata*) is a legume that originated in India. It is the third most cultivated legume in Korea after soybean and adzuki bean. Recently, the use of mung bean seeds and sprouts in trendy foods such as rice noodles and Chinese-style stir-fry is expanding thereby increasing its demand. Subsequently, improvement of mung bean varieties is also being actively conducted. In this study, the important agricultural characteristics of 324 mung bean germplasm were recorded and statistically investigated. Seeds of the mung bean germplasm were cultivated at an experimental field located in the National Agrobiodiversity Center (Jeonju, Korea) and 10 quantitative agricultural traits were investigated. Basic statistics, correlation analysis, and principal component analysis were then performed. The results showed significant variations of the quantitative traits among the germplasms ($p < 0.05$). The days to flowering, maturity, and growth were in the ranges of 31~80, 22~72, and 57~110 days with means of 45, 47, and 92 days, respectively. The highest frequency ($f = 192$) was for lodging score with 11~50%, while simultaneous maturity ($f = 182$) was below 50%. Other quantitative traits related to yield including the number of seeds per pod (CV = 10.9%), number of pods per plant (CV = 41.2%), and one-hundred seeds weight (CV = 36.6%) also showed significant variations. Correlation analysis showed positive correlations between the days to maturity and one-hundred seeds weight ($r = 0.41$) and the days to growth and simultaneous maturity ($r = 0.39$). In contrast, one-hundred seeds weight was negatively correlated to the number of pods per plant ($r = -0.41$) and the days to flowering ($r = -0.29$). Similarly, the days to growth and the number of pods per plant had a negative association with each other ($r = -0.29$). The principal component analysis revealed the number of days to maturity as the most influential variable along the first principal component (23.7%). In general, this study revealed wide variations in quantitative traits among the studied mung bean germplasm, which could provide several options for cultivar development.

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