

Variation of Plant and Fruit Characters in Core Collections of Pepper (*Capsicum chinense* Jacq.)

On-Sook Hur, Ho-Cheol Ko, Sukyeung Lee, Yu-mi Choi, Na-Young Ro*

National Agrobiodiversity Center, National Institute of Agricultural Sciences, Rural
Development Administration, Jeonju 54874, Korea

A total of 47 core collections of pepper (*Capsicum chinense* Jacq.) conserved in National Agrobiodiversity Center (NAC) were studied under field condition at Jeonju. All accessions were characterized for their 14 qualitative and 16 quantitative characters. Results revealed that both qualitative and quantitative characters exhibited wide variation among the studied germplasm. Distribution of fruit characters (fruit length, width, and fruit wall thickness) among the accessions was positively skewed. Of the 47 accessions evaluated, 38.3% accessions had conical shaped fruits and mature fruit color was predominantly red (51.1%), orange (21.3%) and yellow (14.9%). Principal component analyses revealed that (i) 56.64% of the qualitative (fruit shape, color and fruit surface) variation and (ii) 89.42% of the quantitative (plant width, height and fruit maturity days) variation were explained by the first two components. Clustering revealed two groups and dendrogram revealed morphological variation among accessions. The phenotypic diversity exists in this core collections provide valuable information to improve agronomic traits in pepper breeding program.

Key words: Agronomic traits, cluster, core collections, phenotypic diversity, principal component

[This work was supported by Rural Development Administration (Grant: PJ013229022018)]