Table S1. Eigenvalue and proportion of principal components to 9 seed traits of 589 soybean germplasms.

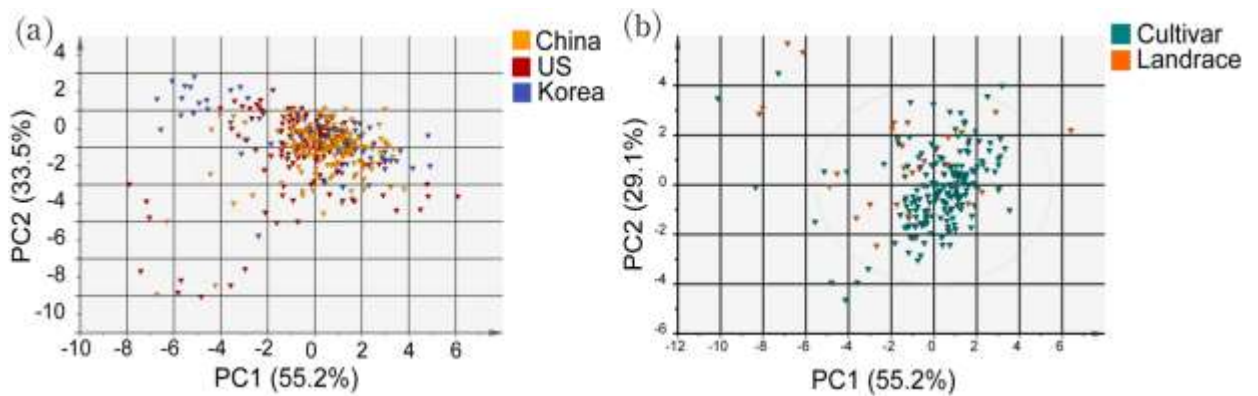| Principal Component	Eigenvalue	Variability (%)	Cumulative (%)
1	**4.834**	**53.706**	**53.706**
2	**3.051**	**33.903**	**87.609**
3	0.903	10.038	97.647

Figure S1. PCA (a) between Chinese cultivar (183 germplasms), US cultivar (151 germplasms) and Korean cultivar (62 germplasms) ,(b) Comparison of Chinese Cutivar (183 germplasms) and landrace (29 germplasms).
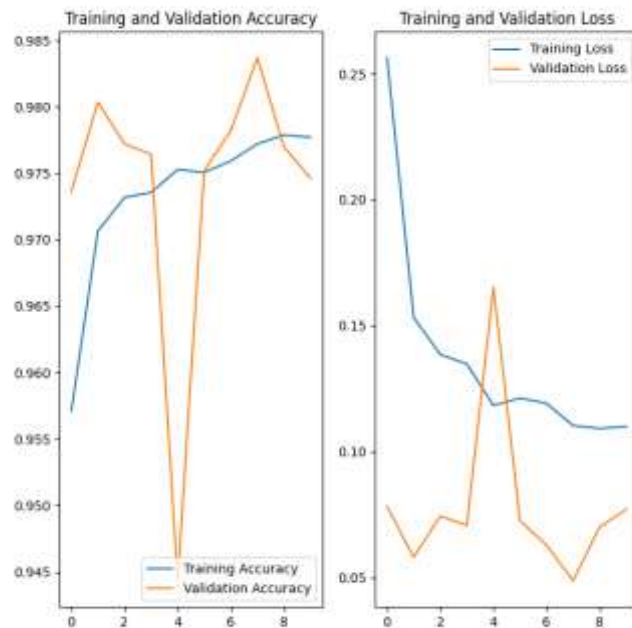

Figure S2. Accuracy (left) and loss (right) graphs of training and validation, respectively.