Garden pea (\textit{Pisum sativum} L., $2n = 2x = 14$) is an important legume used as fresh vegetables and other drier food products. Peas are quite inexpensive, and a readily available source of proteins, vitamins, minerals, and carbohydrates, making them a valuable food capable of meeting the global dietary needs of $>900$ million undernourished people (Mihailović \textit{et al.}, 2019; Lakić \textit{et al.}, 2019). World production of green peas in 2016 was $19.88$ mt, and the major producers were China ($12.21$ mt), India ($4.81$ mt), and USA ($0.31$ mt), which accounted for $>85\%$ of the total production (FAO, 2016).

Field trial was conducted to study the performance of different genotypes of garden pea under reached chernozem soil subtype at the Institute of Forage Crops, Pleven, Bulgaria. Thirteen garden pea genotypes were evaluated in terms of morphological characteristics of both, aboveground and root biomass. The plant height, fresh aboveground weight, dry aboveground weight, root biomass length, fresh root biomass weight, dry root biomass weight was assessed. In addition, some ratios as aboveground to root biomass length, aboveground to root biomass fresh weigh, aboveground to root biomass dry weight were assessed also. Suitable pea genotypes which are of interest to the selection were shown. They can be included in the next breeding programs.

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