

MORPHOLOGICAL AND PHYSIOLOGICAL VARIABILITY OF SMALL RADISH (*RAPHANUS SATIVUS* L.) GROWN UNDER VARIOUS CONDITIONS

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The paper presents experimental data on the influence of environmental conditions created by various cultivation methods on the variability of the phenological and morphological characteristics of small radish. The degree of phenotypic variability of selectively significant traits of small radish and the influence of environmental conditions on the range of their variation were determined in the framework of the research. The study was carried out in 2016–2018 in the conditions of winter and spring greenhouses, open ground and intense light culture. It was revealed that high variability is characteristic for the following traits: the duration of the vegetative period ($C_v = 22,7\%$), leaf surface area ($C_v = 32,9\%$), root length ($C_v = 44,7\%$) and root index ($C_v = 60,7\%$), plant weight ($C_v = 34,7\%$) and root weight ($C_v = 33,3\%$). The other traits were characterized by medium variability. It was established that the influence of the genotype as a factor was the main one for all the characteristics of the leaf apparatus and roots. A significant contribution of the genotype×environment interaction to the manifestation of the leaf apparatus traits (24.5–31.9%), plant and root weight (29.7–35.2%), and the root share (46.7%) was also noted. A negative correlation was established between the duration of the growing period and intensity of illumination ($r = -0,64$), as well as the length of daylight hours ($r = -0,32$). As a result, the traditional and new growing conditions created in the experiment allowed to reveal a specific manifestation of the traits of the leaf apparatus and radish root, which made it possible to establish reaction rates for each growing condition and to select accessions with a stable growing period and a steady manifestation of the traits of a leaf rosette and root.

Key words: small radish, variability, morphological and phenological characters, genotype, environment.