CZU: 581.4:633.35

VARIABILITY SOME MORPH-BIOLOGICAL TRAITS IN BREEDING MATERIAL OF CHICKPEA

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This report presents the results of studies of the variability of some morph-biological traits of the intraspecific hybrid combination chickpea ♀Botna (desi, brown seed coat) × ♂Ichel (kabuli, cream seed coat) in the F3 generation. Desi × kabuli crosses have consistently produced high-yielding progenies and have been the source of many new cultivars. Initial steps of breeding programmers are as follows: Creation of genetic variation and selection of genotypes from this bulk.

The research material was 195 individual F3 selections from 20 offspring obtained from the 20 individual selections. The study of the material was carried out in 2021 on the experimental fields of the Institute. With regard to the characteristics of the seeds, it should be noted the formation of intermediate gulabi (or pea shaped) seeds, which accounted for about half of the selections (97). In 13 out of 15 pigmented offspring, seed segregation by pigment (brown/cream colored) was noted, the same number with seed type segregation (desi/gulabi or desi/gulabi/kabuli). In light-seed offspring, segregation is only to the type of seeds and heterogeneity to the size of the seeds.

Seed size (weight of 100 seeds) is a key determinant of genetic variation. In the aspect of the trait, the weight of 100 seeds in this hybrid combination is marked by high variability. The minimum values of the weight of 100 seeds in the progeny A7 (27.36g (25.4 – 29.24) CV=5.1), the only cream/orange-colored seeds. Maximum values in A18 offspring (34.7g (32.6 – 37.9) CV=4.3), all offspring gulabi and brown colored. Minimum variability in A9 offspring ((CV=3.3 (32.8g (31.5-34.6)). Maximum variability in A15(CV=9.1(30.92g (24.1 - 34.7) followed by A4 (CV=8.8 (30.9g (27.4 -37.5)), A10 (CV=8.4 (33.0g (28.4 -38.2) compared to Botna (CV=0.61) and Ichel (CV=0.63) Thus, for the weight of 100 seeds, there is a continuous series of variability, with the presence of positive and negative transgression, Botna var. (28.6 g/100s) and Ichel var. (32.5g/100s).

Plant height variability in progeny is within: CV= 3.7(A9) – CV= 6.5(A15), in variety Botna - CV=2.3. The minimum and maximum plant heights (mean value) are 51.4cm (A7) - 66.8cm (A18), for the Botna variety - 55.7cm, for the Ichel variety - 64.2cm. Ripening obtained offspring within July 30-31 (A7) - August 7-8 (A18). Ripening varieties Botna and Ichel was on August 2 and 6, respectively. Variability of number seeds/plant within CV=17.2 (A18) - CV=31.4(A3) and seeds weight/plant within CV=16.3(A18) - CV=31.1(A3). Maximum value number of seeds (mean) 69.8 and seeds weight /plant 23.5 g (A4).

Keywords: hybrid, variability, morphological traits, seeds, chickpea.