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PHENOTYPICAL VARIABILITY OF FETAL TRAITS IN MUTANT TOMATO FORMS

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When creating new varieties and hybrids of tomato, the fundamental role is given to the characteristics of the fruit, since it is on them that the volume and quality of the final product, which determine the price of the efforts invested by the breeder, depend.

The main characteristics of the fetus include color, shape, weight and thickness of the pericarp. Knowing the degree of their variability depending on the genotypic features of the mutant forms and environmental conditions will make it possible to use them more effectively as a new germ plasm.

Of the many traits of the fetus, the main one is its mass. This is a complex trait, determined by a large number of genes that cause its significant variation. This opinion is confirmed by our results. The average coefficient of variation in fetal weight in the studied mutants (125 forms) was 33.6%, which characterizes the trait as highly variable. The highest amplitude of trait variability (from *20.7% to 66.4%*) was found in 45.7% of the studied mutant forms. The average degree of intrapopulation variability (*10.2 - 19.8%*) was shown by 41.4% of genotypes from the collection of mutants. Only 12.9% of genotypes were characterized by high homeostasis (*2.8–9.4%*). The variability of the trait "fruit weight" was high both among plants of the population of one mutant form and between fruits within the same plant. In large-fruited mutant forms with round and flat-round fruits, the variability was higher (29.7%) than in forms with oval and plum-shaped (17.8%).

Despite the revealed high degree of variability of the trait "fetal weight" in the studied mutant forms, it should be noted that the genetic features of the trait, determined by the norm of reaction to environmental conditions specific for each genotype, are preserved. A high heterogeneity of the mutant collection in terms of fruit color was revealed, which is represented by a large number of mutant genes: *o at, ep, gs, gf, hp, t, u, ug, Ip, l, r, sh, y,* which determine the nature and intensity of fruit color. The content of *lycopene* and *β-carotene* in fruits is controlled by genes *B, B^c, B^{og}, Del.* The *pat* and *pat-2* genes give the fruits fleshiness and high elasticity. The degree of pubescence of different parts of the plant, including fruits, is determined by the *Ln, p, vi,* and *Wo^m* genes. The presence of keeping quality genes (*rin, nor* and *alc*) ensures the preservation of fruits up to 2-3 months. The severity of these signs varies greatly depending on the growing conditions of plants.

Knowledge of the nature of manifestation and the degree of variability of the declared traits presupposes their successful use in breeding to improve existing and create new varieties and hybrids of F_1 tomato.

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