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USING MUTANT *ls* AND *br* GENES OF TOMATO TO CREATE A NEW SOURSE MATERIAL

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It is known that when mutant forms are crossed with other biotypes, there is an exchange and enrichment of the population with genetic material. Some mutant genes in the process of splitting activate the reactions of genetic recombination's and, thereby, expand the range and level of intrapopulation variability available for selection in $F_2 – F_3$, making it possible to obtain new valuable source material and thereby increase the efficiency of the breeding process.

To create new forms of tomato with limited formation of lateral shoots and short internodes, two genotypes were involved in the breeding process, the semimutant line 11069 and the mutant sample Mo 443, which are carriers of the *br* (*brachytic*) and *ls* (*lateral suppressor*) mutant genes that control these traits. Using these forms, and cultural lines – L28, L111, L187, L828, L556, as well as highly productive, large-fruited varieties – MilOranj, MaKrista, Fakel, with a set of valuable quantitative and qualitative traits that have genes – *sp+, sp±, sp, ssp, u, nor, rin, ex, j-2*, 8 hybrid combinations were created.

The analysis of F_1 hybrids revealed 100% dominance of the shoot-forming ability of cultivated parental forms in all the studied combinations. The number and size of lateral shoots was different and was in direct proportion to the degree of their development in parental forms. The trait "length of internodes" was inherited according to an intermediate type (mid-parent).

In the splitting F_2 populations of all hybrid combinations involving the mutant forms L11069 and Mo 443, there are very few plants with the absence or single lateral shoots (7.3 - 12.7%), they have short internodes (< 6 cm), but at the same time a large part of the flowers (from 41 to 100%) on the inflorescences of these plants with deformations of varying severity. It has been established that the less lateral shoots are formed and the shorter the internodes on the plant, the more morphological deviations in the structure of flowers and the smaller the fruits. This indicates a multiple pleiotropic effect from the influence of the *ls* and *br* genes due to their insufficient cultivation, or these side effects are due to linkage with other genes that have an indirect effect, enhancing the nature of the manifestation of mutant traits. From different hybrid combinations, genotypes with a smaller number of lateral shoots, reduced internodes, and a normally developed reproductive system were isolated to study their offspring in the $F_3–F_4$ generations.

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