

Cytogenetic study of the hybrids F_1BC_1 with interspecific chromosome substitution of species *G. barbadense* L.

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As is known, the cytogenetic collection of cotton of the species *G. hirsutum* L., obtained at National University of Uzbekistan, was created by irradiation of pollen with gamma rays and irradiation seeds with thermal neutrons. To create aneuploid hybrids F_1BC_1 , monosomic F_1 hybrids with substitutions of individual chromosomes were crossed with the original 8 monosomic lines (recurrent parent), which acted as maternal parents. As a result of the study of meiosis at the stage of metaphase I in backcross F_1BC_1 hybrids, 25 bivalents and one univalent of different sizes were found. Moreover, some cross family revealed several backcross hybrid monosomics. Backcross hybrid monosomics with the replacement of individual chromosomes were found in eight hybrids variants and in four families two hybrid monosomics ($F_1BC_1Mo60 \times F_1694_5$, $F_1BC_1Mo27 \times F_1687_4$, $F_1BC_1Mo34 \times F_1688_9$, $F_1BC_1Mo48 \times F_1529_{16}$) were identified, while in four families ($F_1BC_1Mo58 \times F_1530_3$, $F_1BC_1Mo59 \times F_1531_8$, $F_1BC_1Mo75 \times F_1104_2$, $F_1BC_1Mo92 \times F_1539_5$) – one hybrid monosome plant, at the stage of metaphase I meiosis 25 bivalent and univalent in a different size. Analysis monosome size in monosomic hybrid F_1BC_1 plants with substitutions of individual chromosomes found average size univalents replacement of chromosome 4 ($F_1BC_1Mo58 \times F_1530_3$, $F_1BC_1Mo59 \times F_1531_8$, $F_1BC_1Mo60 \times F_1694_5$, $F_1BC_1Mo75 \times F_1104_2$) and chromosome 7 ($F_1BC_1Mo27 \times F_1687_4$), whereas on chromosome 6 ($F_1BC_1Mo34 \times F_1688_9$ and $F_1BC_1Mo92 \times F_1539_5$), the large size of univalents was found, which confirmed the At-subgenomic identity of the above-mentioned monosomes and the absence of a change of univalents. Also in the variant of crossing $F_1BC_1Mo48 \times F_1529_{16}$ with substitution on chromosome 18, the small size of the univalent was found, which confirmed the Dt-subgenomic identity of the above monosome. Thus, a comparative analysis of conjugation of chromosomes in 12 hybrid monosomics F_1BC_1 with substitution of individual chromosomes 4, 6, 7 of At-subgenome and chromosome 18 Dt-subgenome revealed normal conjugation of chromosome for cotton monosomics and the presence of 25 bivalents and one univalent of different size at the stage of metaphase I appropriate to the size of the monosomes of the original cotton monosome lines.