

1698 Development of high-yielding synthetic cotton forms on the basis of karyological data.

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Karyological study of *Gossypium* spp. determined two karyotypes: harmonic (HK) and disharmonic (DHK). HK is a balanced chromosome number with uniform chromosome length that facilitates chromosome conjugation in meiosis due to associations forming with maximal chromosome arms balancing within chromosomes of each genomic group. HK is specific for all cotton species, subspecies, races and cultivars. DHK is the opposite of HK and is specific for many interspecies hybrids, aneuploids, and polyploids. On the basis of obtained data we propose to [1] select initial hybridization species according to HK and DHK, [2] present HK and DHK as "karyologic frames" (idiokaryograms) that facilitates the issue on new high-yielding cultivar development, and [3] use new regularity for involving the use of wild cotton diversity into breeding process. We developed a peculiar "periodic" idiokaryograms table for the genus *Gossypium* which facilitates the forecasting of hybridization and polyploidy results. We obtained some cotton strains with higher yield productivity, cotton boll mass, fiber length and other economically valuable traits. We suggest there is the same regularity in other plants too.