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CYTOLOGICAL RESPONSE OF *VIGNA UNGUICULATA* AND *VIGNA VEXILLATA* ACCESSIONS TO COLCHICINE TREATMENT

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ABSTRACT

Induction of polyploidy was achieved in two out of ten accessions of *Vigna unguiculata* and three of five accessions of *V. vexillata* that were subjected to colchicine treatment. Mitosis and meiosis were found to be normal in the control plants of all the accessions with somatic chromosome counts of 2n = 22 and meiotic counts of n = 11, which resulted in normal tetrad formation. Meiotic chromosome counts of 2n = 4x = 44 were made for the putative colchiploids which were characterized by meiotic irregularities such as univalents, multivalent associations, precocious separation of chromosomes, laggards, scattering of chromosomes at the poles and unequal distribution of chromosomes to the poles. The meiotic irregularities accounted for the reduced pollen fertility, high pollen size variation and formation of abnormal tetrads observed in the putative colchiploids.

Keywords: *Vigna unguiculata*, *Vigna vexillata*, Polyploidy, colchiploids, colchicine, tetrad.