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DEVELOPMENT AND HONEYCOMB SELECTION OF PARTIAL INTERSPECIFIC LINES IN COTTON

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Doubled haploids for the production of homozygous lines could be a useful tool in the hands of cotton breeders. Application to select *Gossypium barbadense* x *G. hirsutum* hybrids could lead to homozygous partial interspecific lines that combine the high yielding ability and earliness of *G. hirsutum* (2*n*=4*x*=52) with the superior quality and disease resistance of *G. barbadense* (2*n*=4*x*=52). Given that anther culture, ovule culture and semigamy methods had not been successful either in diploid or tetraploid cottons or had led to small numbers of haploid plants, alien pollinations were applied.

Wide hybridisation has been and still is a useful method for plant breeders to utilize existed genetic variability and to create new plant forms. Flower buds of field-grown F_1 hybrid *G. barbadense* x *G. hirsutum* plants (B_{403}x Acala Sindos, B_{403}x Coker 310, B_{403}x 4S, Carnak x 4S, Carnak x Acala Sindos & Carnak x Coker 310) were pollinated with pollen from *Hibiscus cannabinus* and *Abelmoschus esculentus*, and parthenogenetically yielded plants (Pa_0) that exhibited morphological traits from both cotton species and were semi-fertile. Chromosome numbers of the Pa_0 plants ranged from 27 to 44 and with a mean DNA content at 4.89μg. After three years of self-pollinations a high variable population was formatted including aneuploid male sterile plants, polyploid plants, mosaic and chlorotic ones. The chromosome number in some of plants in this population had increased up to 52 chromosomes and their yield and quality performance was relatively higher. Progeny of the latter plants (Pa_4) and its progeny (Pa_5) were evaluated and selected for their yielding ability and quality traits under nil-competition in a replicated 31 ungrouped honeycomb design with 33 repetitions. It was concluded that it may be possible the production of partial intersecific lines that combine the high yield of *G. hirsutum* and the lint quality of *G. barbadense*.