

**DUPLICATION OF THE CHROMOSOME NUMBER OF BRACHIARIA DIPLOID PLANTS USING COLCHICINE. Alessandra A. Pinheiro\*<sup>1</sup>, Marisa T. Pozzobon<sup>1</sup>, Cacilda B. do Valle<sup>2</sup>, Maria I. O. Penteado<sup>2</sup>, Ana C. G. Araújo<sup>1</sup> e Vera T.C. Carneiro<sup>1</sup>. EMBRAPA-<sup>2</sup>CNPq, MS ; <sup>1</sup>CENARGEN, DF**

Apomixis is an asexual form of plant reproduction which produces fertile seeds. In plants of *Brachiaria brizantha* and *B. decumbens*, there are tetraploid ( $4n=36$ ) varieties that show an apomitic reproductive behavior and present *Panicum type* embryo sacs. Sexually reproducing plants are diploid ( $2n=18$ ) and present *Polygonum type* embryo sacs. The present study aims the chromosomal number duplication of the diploid varieties. The achievement of plants containing induced duplicated genome will help a better understanding of the relationship between apomixis process and the plants ploidy level and is also of great interest for plant breeding programs. Using tissue culture, it was established the technique of meristems multiple bud formation in *Brachiaria* including the diploid varieties of *B. brizantha* (BRA 002747) and *B. decumbens* (BRA004448). Under these conditions, explants were inoculated for 48 hours in three different colchicine concentrations: 0.01% (p/v), 0.05% (p/v) and 0.1% (p/v) with three replicates of 25 explants each. A small number of plants regenerated under high colchicine concentration: 2 on 0.1% and no one on 0.05%. On the other hand, among 44 buds regenerated under 0.01% colchicine, 19 showed duplicated ploidy number and 1 triplicated. The ploidy level of these plants was checked on flow cytometry and the duplication of chromosome number of some of them was confirmed through cytogenetical analysis of root tips. The same treatment was applied for BRA004448 and from 25 explants submitted for each of the three colchicine concentration, 7, 4 and 3 buds were obtained respectively. Ploidy level of these buds is now being analyzed. These results confirm the efficiency of the genome duplication method in *Brachiaria*. In order to verify the reproductive form of these plants, embryo sacs analysis will be performed under optical microscope, as soon as they enter their reproduction stage.

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