

**P196****Stability of Chromosomal Duplication in *P. purpureum* X *P. glaucum* Triploid Hybrids**

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Room: Grand Exhibit Hall

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The hybrid resulting from crosses between Napiergrass and Pearl millet shows important agronomic traits and is a valuable tool for breeding programs. However, the sterility of this hybrid due to its triploid condition has been pointed as a difficulty for its use in breeding programs. In order to restore the hybrid fertility through seed propagation, we successfully doubled the chromosome number of various genotypes. There are many protocols to duplicate chromosomes, but the efficiency is low and it is mandatory to understand what happens after duplication. Thus, the objective of this work was determining a optimal protocol for duplicating triploid hybrids and evaluate the consequences of this duplication. Four different hybrids were produced and 2000 seeds were treated with colchicine using different exposure times and concentrations. The rate of survivors was approximately 30% and the treatment with the highest rate of hexaploid plants was obtained with 0.2% colchicine for 3 hours. It was observed in some duplicated plants that triploid cells multiplied at higher speeds than hexaploid cells and practically dominated the plant as a whole, i.e. there was a regression to the triploid condition. Various studies have shown partial DNA elimination in hybrids after DNA duplication, but regression to the triploid condition has never been reported. So, in addition to the establishment of a optimal protocol for DNA duplication, it is necessary to follow the plant development to certify that all cells maintain the duplicated condition. All duplicated plants continue under analysis until pollen production, and only plants that produce triploid pollen will be selected to agronomic evaluations.

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