ASYNCHRONOUS MEIOTIC RHYTHM AS THE CAUSE OF PARTIAL CHROMOSOME ELIMINATION IN *Paspalum ovale* (GRAMINEAE: PANICEAE).

Adamowski EV, Pagliarini MS, Silva N, Batista LAR , Valls JFM. Universidade Paranaense, Umuarama 87502-210 PR Brazil, Department of Cell Biology and Genetics, State University of Maringá, 87020-900 Maringá PR Brazil , Cattle Breeding Center of the Southwest/Embrapa, 13560-970, São Carlos SP Brazil Embrapa/Cenargen, Brasília DF Brazil. mspagliarini@uem.br

Chromosome elimination is a common phenomenon among interspecific hybrid embryos in certain plant species. The combination of two distinct genomes frequently results in aberrant mitotic and meiotic divisions, and sometimes the abnormalities lead to chromosome elimination. Chromosome elimination is a powerful tool in breeding programs. Chromosome number and meiotic behavior are described for the first time in *Paspalum ovale*, a member of the Ovalia group occurring in southern Brazil and in Argentina. The only accession of *P. ovale* (BRA-013871) available in the germplasm collection of Embrapa Pecuária do Sudeste (CPPSE), in São Carlos SP Brazil, was analyzed. This accession was collected in the municipality of Ponta Grossa PR Brazil, where it occurs as a native species. For conventional meiotic studies, inflorescences were fixed in Carnoy for 24 h, transferred to 70% alcohol and stored under refrigeration until use. Microsporocytes were prepared by squashing and staining with 1% propionic carmine. All phases of meiosis were rigorously evaluated, starting from diakinesis in five plants. For C-banding, inflorescences were fixed and stored in Carnoy under refrigeration. The meiotic behavior of *P. ovale* was unusual when compared with other polyploid *Paspalum* species. Several terminal and interstitial heterochromatic regions were observed in the chromosomes. These regions impaired chromosome condensation and compromised the perfect analysis of pairing relationships, although univalent and multivalent associations could be seen. Chromosome number (2n=7x=70) was rare for the genus and suggested allotetraploidy. We suggest that accession is a natural hybrid originating from crossing between an apomictic female with 2n=6x=60 chromosomes, producing unreduced eggs, and a diploid sexual male with 2n=2x=20, furnishing reduced pollen grains. The meiotic behavior of this accession also indicates that these plants have two sets of chromosomes with no pairing homology during meiosis I. While the 60 maternal chromosomes are homologous and paired as bi- and multivalents, the parental ten chromosome set remained univalent. The two sets of chromosomes do not show the same rhythm in the cell cycle. While the maternal chromosomes are migrating to the poles, the paternal ones are still on the plate. After precocious sister chromatid separation of the univalents, some chromatids failed to reach the pole in time to be included in the telophase nucleus. These chromosomes remained as micronuclei throughout meiosis. The percentage of abnormal tetrads was high and pollen fertility was low. Although the mode of reproduction was not determined in *P. ovale*, high ploidy level, high percentage of cells with meiotic abnormalities followed by chromosome elimination and high pollen sterility suggest an apomictic accession. Thus, chromosome elimination will probably not be of any great value for breeding programs. Órgão Financiador : CAPES