

Meiotic irregularities in *Euterpe oleracea* Mart

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The level of fertility of plants is directly related to meiotic behaviour, being generally observed negative correlation between fertility and division irregularities. Such information is useful for the breeding involving *Euterpe oleracea*, developed to obtain more productive cultivars with thicker stalk for palm heart production. Thus, the objective of this work was to characterize the meiotic behaviour of *Euterpe oleracea* to enrich the breeding of this species. After the harvest, the flower buds of three individuals from the Agricultural Research Centre of Humid Tropic (CPATU) germplasm collection were fixed in Carnoy (3 ethylic alcohol:1 acetic acid) and stored at -20° C. The slides were prepared using the smear technique and stained with propionic carmine (1%). The Meiotic Index calculation was done through the equation: (% MI = [number of normal tetrads / total of analysed tetrads] x 100). From a total of 13,780 meiocytes analysed, 62.7 % were under meiosis I, where 1% of them presented irregularities – especially related to segregation such as early migration of chromosomes in metaphases and/or delays in anaphases. The other 37.3 % of meiocytes were under meiosis II, from which 16.8 % presented some sort of irregularity – especially related to irregular position of meiotic spindle. In some cells, there were observed metaphase II with chromosomes arranged in parallel spindle, with or without chromosomes under early ascension. There were also observed irregularities related to laggard chromosomes in cells under anaphase and to the asynchronous division of the nuclei between metaphase and anaphase. Such meiocytes have presented three nuclei, a typical characteristic of tripolar spindle, apparently under metaphase and other two under more advanced division process – a possible cause for the triad formation. Despite the irregularity rates, the meiotic index was 90.0 %. This evidences that chromosome that arrived early or late in the poles may have been included in the nuclei where there were formed normal meiotic products. Conclusions: Despite the irregularities found, the species may be considered stable, cytologically, since the meiotic index was high. The highest irregularity rate in the meiosis II suggests further investigation in details regarding a possible involvement of mutant genes related to spindle and to non-disjunction. Financial support: Embrapa, CNPq and FAPEMIG.