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Development of a system for kinship determination and identification of coconut hybrids based on microsatellite markers

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Coconut (*Cocos nucifera* L.) is a diploid species belonging to the monocotyledonous family Arecaceae (Palmae) and is grown in more than ninety countries. The most commercially important types are 'typica' (Tall) and 'nana' (Dwarf). Hybrids between these two varieties have favorable characteristics, such as rapid growth and flowering, good vigor and productivity. Identification of hybrids based on morphological characters during the seedling stage is difficult and, often, unwanted dwarf coconuts are mistakenly used in planting, reducing productivity and generating cost. In addition, there is difficulty in identifying the male parental due the pollination being carried out with pollen mixture. This work aimed the optimization of a set of microsatellite markers that allowed the unequivocal validation of hybrids of the "Tall x Dwarf" crossing, as well as the development of a system of male genitor identification for breeding purposes. 23 microsatellite markers were used for genotyping 168 dwarfs, 81 tall and 10 hybrids coconut palms. The GenAlex Software was used to obtain allelic frequencies, Hardy Weinberg Equilibrium and genetic distances. As a result, a system capable of identifying hybrid seedlings was developed, as well as a capable system of discriminating the male parent with 99% accuracy.

Biography

Wellington Bruno dos Santos Alves has completed his Graduation in Biological Sciences at Universidade Católica de Brasília and currently holds a Masters in Genomic Sciences and Biotechnology from Embrapa-Cenargen's Plant Genetics Laboratory, where he developed his research project.

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