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Identification Of Microsatellites Markers In Elephant-Grass (Pennisetum purpureum)

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Pennisetum purpureum, known as Elephant grass is widely cultivated in Brazil, renowned for its productive potential, good palatability, vigor and longevity. Despite its potential as a fodder crop, almost no studies have been undertaken to examine the genetic diversity of Elephant grass which would be of considerable use to breeders and germplasm managers. Embrapa develop for more than a decade, a breeding program of Elephant grass. This germplasm collection has been characterized by morphological, chemical and cytogenetic traits, however, a detailed molecular description to characterize the genetic diversity is needed. For molecular characterization of Elephant grass accessions using microsatellite markers (MS), the identification of these markers is required since no sequence information is available for this species. For that, we used cross-species amplification of MS markers based on the information available from millet in the literature. We evaluated a set of 54 MS markers developed for millet and 30 (55.5%) microsatellites were successfully amplified using Elephant grass as target genome. A total of 18 markers were selected to evaluate the level polymorphism of 105 accessions of Elephant grass from Embrapa germplasm collection. All markers were polymorphic and a total of 173 alleles were detected, ranging from 3 to 24 alleles/marker. The establishment of a MS marker panel of for Elephant grass will be very useful for diversity studies, breeding strategies, cultivar protection as well as to aid on the identification of genes of economic interest.
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