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Identification of earl millet cultivars using both microsatellites and enzymatic markers

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ABSTRACT. The increasing number of protected and registered cultivars and problems involving seed commercialization make distinction and identification of cultivars imperative. Millet (*Pennisetum glaucum*), a crop species with protected cultivars in Brazil, has been the target of seed piracy. Thus, with the objective of identifying different lots with regard to origin, we characterized six cultivars of commercialized millet of proven origin by means of the electrophoretic patterns of the isoenzymes alcohol dehydrogenase, esterase and glutamate oxaloacetate transaminase and by microsatellite markers, using primers specific for millet. The six cultivars were separated with four microsatellite loci. Based on this characterization, certification of genetic purity was undertaken for public domain commercialized seed lots. The isoenzymatic markers were also tested for stability of the patterns. Esterase patterns were altered in seeds with different physiological quality and health conditions, but this alteration did not hinder identification of the cultivars. It was observed that most of the millet seed lots commercialized in Brazil as being in public domain belong to other cultivars.

Key words: *Pennisetum glaucum*; Molecular markers; Seed piracy; Cultivar identification; SSR

