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Genetic mapping of *Theobroma cacao* (Malvaceae) seedlings of the Parinari series, carriers of the lethal gene *Luteus-Pa*

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ABSTRACT. The lethal gene '*Luteus-Pa*' is found in cacao genotypes (*Theobroma cacao*) of the Parinari (Pa) series, from Peru. Seedlings affected by this gene have yellowing leaves and subsequently die. We mapped this gene based on microsatellite markers and RAPDs, in order to elucidate the inheritance of '*Luteus-Pa*' and investigate possible lethal mechanisms. DNA samples of genitors were amplified with 87 SSR and 64 RAPD primers. The SSR primers amplified 65 RAPD primers, giving 179 polymorphic bands. After screening with SSR and RAPD markers, we selected 20 SSR primers, two SSR primers with ESTs and 22 RAPD primers that were polymorphic for genitors Pa 30 and Pa 169. Only two of the 22 RAPD primers and three of the 20 SSR primers were informative and polymorphic in

the analysis of the bulk samples of progenies. Among these, primer RAPD E11 produced a band linked to the lethal gene (38.5 cM); none of the SSRs were associated with '*Luteus-Pa*'.

Key words: Cacao; Gene expression; Lethal factor; Genetic marker

