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TRIM display is useful DNA Markers for identification of cultivars and mapping in Brassica crops such as cabbage, radish, and rapeseed

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Terminal-Repeat Retrotransposon In Miniature (TRIM) elements contain 100~257 bp terminal repeats and 100~800 bp internal sequences. Many copies of these elements are widely spreaded in euchromatin regions of plant kingdom. Based on genome-wide study on these elements in the family Brassicaceae, we developed TRIM display technique using unique and conserved sequences of the elements and combining with AFLP technique. TRIM display revealed abundant polymorphic bands among taxa in Brassicaceae. The technique was successfully used for identification of commercial F1 varieties of Chinese cabbage and radish, and for genetic mapping in rapeseed. We describe the potential utility of TRIM elements as DNA markers for the study of genome evolution, genome mapping, and variety protection for any Brassica crops such as Chinese cabbage, rapeseed, radish, and so on.

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Correlation and Path Coefficient Analysis for Some Yield-Related Traits in Sesame

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The associations yield-related components and their direct and indirect influence on the grain yield of sesame were investigated. Total 15 breeding lines were tested in a randomized block design with three replications at the different locations in 2006. Grain yield was significantly correlated with it's components. 1000-seed weight(r=0.635**), number of capsule per plant(r=0.358**) and plant height(r=0.240**) were highly correlated with grain yield of sesame. Otherwise, days to flowing date(r=-0.294) and days to maturity(r=0.016) didn't affect grain yield of sesame. Path coefficient analysis revealed that plant height(0.894), 1000-seed weight(0.683), days to maturity(0.661) and number of capsule per plant(0.644) showed highly positive direct effects on grain yield. Capsules-bearing plant height(-0.697) and days to flowering date(-0.966) showed negative direct effects on the sesame grain yield. Under the meteorological condition in which average air temperature during the flowering and maturity stages of sesame recorded about 1.1℃ lower, 0.8℃ higher respectively compared to the normal year, the improvement or evaluation in grain yield will be better, if the selection or evaluation is based on the 1000-seed weight, number of capsule per plant and plant height. However, days to maturity should be taken into account in this evaluation due to the different response on the lower genetic correlation(r=0.016) and higher direct effect(0.661) of path coefficient analysis.

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