



# Development and cross-species transferability of unigene-derived microsatellite markers in an edible oil woody plant, *Camellia oleifera* (Theaceae)

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**ABSTRACT.** *Camellia oleifera* is an important edible oil woody plant in China. Lack of useful molecular markers hinders current genetic research on this tree species. Transcriptome sequencing of developing *C. oleifera* seeds generated 69,798 unigenes. A total of 6949 putative microsatellites were discovered among 6042 SSR-containing unigenes. Then, 150 simple sequence repeats (SSRs) were evaluated in 20 varieties of *C. oleifera*. Of these, 52 SSRs revealed

polymorphism, with the number of alleles per locus ranging from 2 to 15 and expected heterozygosity values from 0.269 to 0.888. The polymorphic information content varied from 0.32 to 0.897. Cross-species transferability rates in *Camellia chekangoleosa* and *Camellia japonica* were 90.4 and 78.8%, respectively. The 52 polymorphic unigene-derived SSR markers serve to enrich existing microsatellite marker resources for *C. oleifera* and offer potential for applications in genetic diversity evaluation, molecular fingerprinting, and genetic mapping in *C. oleifera*, *C. chekangoleosa*, and *C. japonica*.

**Key words:** *Camellia oleifera*; *C. chekangoleosa*; *C. japonica*; Unigene; Microsatellite; Cross-species transferability