

## Abstract

AFLP markers were successfully employed to detect diversity and genetic differentiation among Indian and Kenyan populations of tea (*Camellia sinensis* (L.) O. Kuntze). Shannon's index of diversity was used to partition the total phenotypic variation into between and within population components. On average, most of the diversity was detected within populations, with 79% of the variation being within and 21% being between populations of Indian and Kenyan tea. A dendrogram constructed on the basis of band sharing distinctly separated the three populations of tea into China type (*sinensis*), Assam type (*assamica*) and Cambod type (*assamica* ssp. *lasiocalyx*) in a manner consistent with the present taxonomy of tea, the known pedigree of some of the genotypes and their geographical origin. Principal coordinate (PCO) analysis grouped Assam genotypes both from India and Kenya supporting the suggestion that the Kenyan clones have been derived from collections made in this region. The China types were more dispersed on the PCO plot which is a reflection of wider genetic variation. As would be expected, clones collected from the same region exhibited less overall genetic variation. AFLP analysis discriminated all of the tested genotypes from India and Kenya, even those which cannot be distinguished on the basis of morphological and phenotypic traits.