

OP47 - Genetic Diversity and Taxon Delineation of *Ilex glabra* Using AFLP MarkersYouping Sun and Donglin Zhang

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Ilex glabra (L.) A.Gray (inkberry) is a native evergreen shrub with dark green foliage and compact habit. It has gained popularity in the northern landscapes in US and more nursery growers would like to produce it. To better understand genetic relationships among inkberry cultivars and selectively breed superior cultivars, a group of 48 *Ilex glabra* taxa and two other *Ilex* species (*Ilex crenata* Thunb. and *I. mutchagara* Makino) had been studied using AFLP markers. A total of 229 markers between 50 and 500 base pairs (bps) were produced from eight AFLP primer combinations (E-ACT/M-CAC, E-AGG/M-CTT, E-AGC/M-CAA, E-ACA/M-CAC, E-AGG/M-CAA, E-ACC/M-CAG, E-AGC/M-CAT, E-ACG/M-CAG). Among them, 87% of bands were polymorphic markers. Total markers for each cultivar ranged from 127 to 169, the average number of markers for each cultivar was 155. The Jaccard genetic distance was from 0.001 to 0.349. Two distinguished clad were generated from cluster analysis. *Ilex crenata* and *Ilex mutchagara* was obviously an out-group to *Ilex glabra*. Within *Ilex glabra* clade, 48 accessions can be classified into six groups which including natural species group, inkberry, and five cultivated groups, Densa, Ivory Queen, Nova Scotia, Pretty Girl, and Shamrock. Within each group, the legitimacy of named cultivars and distinguished clones were discussed based on both morphological features and molecular data. These AFLP data provide useful information to researchers and growers for inkberry cultivar identification, genetic improvement, and germplasm conservation.