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Morphological Diversity of Lam Dong Tea, Viet Nam

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Abstract

Assessing the diversity in tea (*Camellia sinensis*) may provide the basic information for tea plant breeding in order to build up set of regionally adapted tea populations and clones. All tea taxa freely interbreed and therefore tea plants, with many overlapping morphological, biochemical and physiological attributes, are highly diverse and consequently their populations are very heterogeneous. Because of the extreme hybridization, existence of the pure archetypes of tea is doubtful.

Thirty-one teas belonging to China tea, India tea, Shan tea and hybrid tea, which are either commonly planted commercially or promising in tea germplasm, were morphologically described at four locations in 2004 at Lam Dong province (Viet Nam) and assessed for the morphological diversity. Thirty-four morphology characteristics of stem (stem circumference and stem shape; the height of the first branching position; branch angle to stem and branching ability; the height, the length and the breadth of plucking surface), the 4^{th} leaf (leaf length, leaf breadth and leaf size; leaf length/breadth ratio and leaf shape; leaf angle to branch; leaf pose; leaf colour; number of pair of main vein on leaf surface; number of pair of serratulation on leaf margin and serrulated form; the length from leaf pedicle to first serration; the length of leaf pedicle and the posture of leaf base), young P+2 shoot (pubescence density on bud and lower surface of 1^{st} leaf; shoot colour and length; fresh and dry shoot weight; fresh/dry ratio and tannin content) and flower (flower colour; number of petal; style and flowering ability) were investigated qualitatively and quantitatively following IPGRI's guidelines. The investigated teas were grouped by hierarchical cluster analysis using the unweighted pair group method analysis (UPGMA) based on the investigated quantitative morphology data to construct dendrogram representing the relationship among cultivars and clones.

Collected data strongly approved the high diversity of investigated teas at Lam Dong based on the morphological characteristics. Results of hierarchical cluster analysis differed from traditional tea taxa, and all teas planted commonly were morphologically similar.

Keywords: *Camellia sinensis*, diversity, morphology, tea

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