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QUANTITATIVE TRAIT LOCI (QTL) MAPPING FOR PLANT MORPHOLOGICAL AND FRUIT QUALITY TRAITS ORIGINATING FROM *Solanum lycopersicoides* BY USING INTROGRESSION LINES

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Abstract

One of the important wild tomato species is *Solanum lycopersicoides* due to having great potential for biotic and abiotic stresses tolerance. Despite the importance of the wild tomato species, its genetic potential for plant morphological and fruit quality traits is not known. The present study evaluated *S. lycopersicoides* specific introgression line library in terms of plant morphological and fruit quality traits for Quantitative Trait Loci (QTL) mapping. As result, QTLs was detected for five qualitative plant morphological traits (stem: length of internode, stem hairs, fruit: intensity of green color (before maturity), inflorescence type, thickness of calyx) and fruit quality traits (size of dry section around the fruit, predominant fruit shape, shape of pistil car, size of fruit locules, fruit number of locules). *S. lycopersicoides* specific QTLs leaded round fruit shape was identified. For fruit weight and size, all significant QTLs had negative effect as expected but an Introgression Line, IL (LA4246) had slightly higher fruit weight than control (VF36) which can be considered as promising alleles for fruits weight. The study pointed out high genetic potential of the wild species for thickness of pericarp due to reduced thickness of pericarp which is preferred fruit quality traits. The present study is the first study to evaluate and map QTLs specific to *S. lycopersicoides* for plant morphological and fruit quality traits. ILs and identified QTLs is important for integration of *S. lycopersicoides* to tomato breeding for fruit quality traits.

Key words: Fruit weight, introgression lines, *S. lycopersicoides*, QTL mapping

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