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Quantitative Trait Loci for Rice Phyllochron in Lemont × IR36 Cross

Makoto Morita[1)], Ding-Qin Tang[1)], Naoko Miyamoto[1)], Yusuke Goto[2)], Yasuo Ukai[3)] and Keisuke Nemoto[1)]

1) Asian Natural Environmental Science Center, The University of Tokyo
2) Graduate School of Agricultural Science, Tohoku University
3) Graduate School of Agricultural and Life Sciences, The University of Tokyo

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Abstract: In rice, genetic variation in “phyllochron”(the time interval between the appearance of successive leaves) affects many aspects of shoot system development. The objective of our study was to identify quantitative trait loci (QTLs) that control phyllochron in a Lemont (*japonica*)×IR36 (*indica*) F_2 population. Composite interval mapping detected four phyllochron QTLs located on chromosomes 1, 2, 9 and 11. Individually, these QTLs accounted for 8-14% of the phenotypic variation, indicating that phyllochron is controlled by multiple QTLs rather than by a major gene system. At these QTLs, the presence of a Lemont allele increased phyllochron. The only exception was for the QTL on chromosome 9, where the Lemont allele decreased phyllochron. Based on the synteny between rice and maize genomes, the ortholog of the maize *terminal ear 1* gene was considered a candidate gene for the QTL on chromosome 1.

Keywords: Leaf, Phyllochron, QTL, Rice

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