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# Genetic analysis of grain shape and weight after cutting rice husk

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**ABSTRACT.** Grain shape and weight are the most important components of rice yield and are controlled by quantitative trait loci (QTLs). In this study, a double-haploid population, derived from the cross of *japonica* CJ06 and *indica* TN1, was used to analyze QTLs for grain shape and weight under two conditions: normal growth with unbroken husk and removing partial husk after flowering. Correlation analysis revealed that these traits, except grain weight, had a connection between the two conditions. Twenty-nine QTLs for grain shape and weight were detected on chromosomes 1 to 3; 6; 8 to 10; and 12, with the likelihood of odds value ranging from 2.38 to 5.36, including 10 different intervals. Some intervals were specifically detected after removing partial husk. The results contribute to the understanding of the genetic basis of grain filling and growth regulation, and provide us some assistance for improving grain plumpness in rice breeding.

**Key words:** Quantitative trait loci; Grain shape; Grain weight; Rice husk

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