

Inheritance of Ratooning Ability in Rice (*Oryza sativa* L.)¹

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summary

Five japonica rice varieties were evaluated for ratooning ability and its relationship with TNC content in rice stem base. The genetic of ratooning ability was studied with 5×5 diallel crosses. Some indica hybrid rice lines were also evaluated for its ratooning ability and ratoon culture potential. The results of the experiments were summarized as follows;

- 1.The ratooning ability was significantly different among varieties. The ratooning rate was positive correlated significantly with total sugar and TNC content in stem base.
- 2.By using diallel crosses, the ratooning rate was found to be mainly controlled by the additive genes, It seems no major gene affect the ratooning rate, The heritability of ratooning rate (in narrow sense) was high (0.74). The low ratooning ability was dominant over high ratooning ability.
- 3.Total sugar and TNC content in stem base were showed easily affected by environmental conditions. The total sugar was found to be mainly controlled by polygenes. The high total sugar content was dominant over low total sugar content. The heritability was moderate high(0.45). The TNC content in rice stem base controlled mainly by the additive genes. It seems mostlikely 2 to 3 gene groups affected the TNC content. The low TNC content was dominant over high TNC content. The heritability of TNC was moderate high(0.47). The dominant effect of the low TNC content seems coordinated with the dominant effect of low ratooning rate.
- 4.Only one of the five indica hybrid rice lines showed high ratooning ability and moderate ratoon yield. Heterosis of ratoon yield was not found of the lines.

{Key words:Rice(*Oryza sativa* L.), Hybrid rice lines, Ratooning ability, Inheritance, Total nonstructural carbohydrate.}

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