

Effect of total nonstructural carbohydrate content on rice ratooning ability¹

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summary

Experiment was conducted to determine the effect of total nonstructural carbohydrate (TNC) content on rice ratooning ability. Two cultivars, Tainung Sen 18 known to have a high ratooning ability and kaohsiung 139 known to have a low ratooning ability, were used. In the first crop, panicle removal and defoliation were made at heading stage and 15 days after heading. TNC content of rice at the stem base was determined at harvest time, and ratooning ability evaluated 2 weeks after harvesting.

The TNC content and ratooning ability of untreated Tainung Sen 18 plants were 35.9% and 124.0%, respectively, while those of the untreated plants of Kaohsiung 139 were 9.8% and 15.9% respectively. Panicle removal increased TNC content and ratooning ability, especially for Kaohsiung 139, but no ratooned buds were produced from plants completely defoliated 15 days after heading. The ratooning ability of Tainung Sen 18 also significantly decreased in completely defoliated plants, while 50% defoliation produced similar result to a lesser extent.

The TNC content of rice at the stem base was significantly correlated with the number of ratooned tillers per hill ($r=0.9167^{**}$) and with ratooning ability ($r=0.9215^{**}$). The panicle number of mother plants was not significantly correlated to the number of tillers, the ratooning ability and the TNC content.

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