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## Japanese journal of crop science

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#### Varietal Difference in Sink Size per Panicle and the Accumulation of Grain Carbohydrate in Rice

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#### Abstract:

Sink size per panicle was greater in the rice varieties of panicle weight type, Ouu 316, and Fukuhibiki, and the big grain type, Ouu 327, compared with the rice variety of panicle number type, Hitomebore. However, the percentages of ripend grains in Fukuhibiki and Ouu 327 were similar to and greater than that in Hitomebore, respectively. The yield on a per-panicle basis was also higher, more than 60%, in these varieties. The decrease in the dry weight of leaves and stems during the early grain-filling stage seemed to be greater in Fukuhibiki and Ouu 327 than in Hitomebore and Ouu 316. This indicates that more accumulates in leaves and stems before heading resulted in high yield on a per-panicle basis in the former two varieties. On the other hand, increases in total and panicle dry weight, and in crop growth rate and net assimilation rate, on a per-panicle basis during the grain-filling stage were greater in the varieties of panicle weight and big grain types than in Hitomebore, especially much greater in Fukuhibiki and Ouu 327. The leaf areas of sunny leaves were not greatly different among all varieties, but Hitomebore and Ouu 316 had greater leaf areas of shady leaves than Fukuhibiki and Ouu 327 did.

#### Keywords:

Accumulate before heading, Photosynthetic assimilate, Rice, Shady leaf, Sink size per panicle, Sunny leaf, Variety of big grain type, Variety of panicle weight type

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