

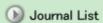


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High-Yielding Performance of Paddy Rice Achieved in Yunnan Province, China. : II. Spikelet production of Japonica $\rm F_1$ hybrid rice, Yu-Za 29

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Abstract:

The spikelets produced, amouting to as much as 71, 000 per m² in a denseplanting plot, had been attained by combining of 487 panicles per m² and 148.8 spikelets per panicle. The panicle number per m² was almost the same as the culm number per m² at transplanting. In a sparse-planting plot, the panicle number per m² did not decrease but increased in the spikelets per panicle up to 180.9, and thus 87, 700 spikelets per m² were obtained. The efficiency of spikelet production for Yu-Za 29 was apparently higher than Nipponbare cultivated in Kyoto. The significantly large number of spikelets per m² was attributed to both a more efficient use of nitorgen in producing spikelets and increases in nitrogen absorption up to heading (23.4 to 23.6 gm⁻¹ ²) and in leaf dry weight at heading (328~333 gm⁻²). Efficiency of nitrogen use in producing spikelets of Yu-Za 29 was higher in sparse-planting plots than in dense-planting plots. No differences in culm lengths and internode lengths lower than the 3rd one (N₃) were observed between the planting densities, but breaking resistance of N_3 and N_4 lowered in the dense planting plot. Consequently, the lodging index of N₃ (distance between fulcra is 5cm) exceeded 200. Improvement of nitrogen use efficiency in producing spikelets as well as high resistance to lodging in Yu-Za 29 are considered to be compatible with an increase in the sparsity of the planting density in comparison with the conventional dense planting cultivation in Binchuan.

Keywords:

Lodging index, Nitrogen use efficiency, Panicle number, Spikelet, Yu-Za 29

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