Entry No. IRRC-0008

Category	: International Rice Research Conference
Select Theme	: Systems physiology
Keyword 1	: Yield potential
Endorsement email	:
Keyword 2	: Drought tolerance
Keyword 3	: Nutrients (such as mineral uptake, translocation, and regulation)
Title of Entry	: EFFECT OF SOURCE-SINK MANIPULATION ON GRAIN WEIGHT OF RICE
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: An experiment was conducted at the Agronomy Field Laboratory, Bangladesh Agricultural University, Mymensingh during the period from June 2016 to December 2016 to investigate the effect of source-sink manipulation on grain weight of rice. The experiment comprised two varieties viz. BRRI dhan49 and Balam. The seven treatments are control, removal of one sided spikelets at heading, full flag leaf removal at heading, half flag leaf removal at heading, upper half spikelets removal at heading, lower half spikelets removal at heading, upper half spikelets removal at 10 DAA. The experiment was laid out in a randomized complete block design (RCBD) with three replications. The cultivar Balam showed the higher panicle length (25.61 cm), grain density in primary branch cm-1 (1.39), superior grain panicle-1 (10.71), unfilled spikelets panicle-1 (30.83), straw yield (11.46 t ha-1), biological yield (14.47 t ha-1). BRRI dhan49 showed higher primary rachis no panicle-1 (12.73), primary rachis density cm-1 (4.40), grain length (7.90 mm), grain height (1.91 mm), grain width (2.66mm), inferior grain panicle-1 (36.00), grain number panicle-1 (249.56), individual grain weight (24.46 mg), total spikelets panicle-1 (118.57), filled spikelets panicle-1 (105.43), 1000 grain weight (23.88g), grain yield (5.35 t ha-1), harvest index (39.53%). Therefore, the experiment concluded that BRRI dhan49 was higher yield performing variety than Balam. Based on the present study, the grain weight of BRRI dhan49 was increased where the half spikelets removal. Manipulation on grains number which had strong effects on grain yield might be the main reason causing the lower grain yield but the individual grain weight increased in the 25 and 50% spikelet removal in between two rice varieties. The 50% flag leaf cutting drastically reduced grain size and percentage of filled grain in both the apical and basal spikelets proved that flag leaf played an important role to be the main source producing the photo-assimilate.

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