Entry No. IRRC-0241

Category	: International Rice Research Conference
Select Theme	: Genetics of Yield: Grain quality and quantity
Endorsement email	:
Genetics of Yield Grain quality and quantity Keyword 1	: Grain yield
Genetics of Yield Grain quality and quantity Keyword 2	: Grain weight and size
Genetics of Yield Grain quality and quantity Keyword 3	: Panicle and spikelet number
Title of Entry	: Genetic analysis of parental lines for yield and cooking quality in rice (Oryza sativa L.)
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Select only one type of presentation	: 3-5 minute flash talk
Abstract	: Rice is a staple food for majority of the population in India and being grown in about 44.0 m.ha annually. The varietal preference is very specific in different regions of the country depending on slenderness, aroma and stickiness. South Indian people mostly prefer non-aromatic, slender grain, non sticky varieties. Keeping this in view, four promising varieties were crossed with five high yielding lines and the resultant 20 hybrids along with the parents and checks were evaluated during Kharif 2016 at Rice Research Centre, ARI, Rajendranagar, Hyderabad, Telangana State, India. The combining analysis showed that all the parents were significantly different for all the characters studied. The degree of dominance was more than one for all the traits studied barring plant height, number of productive tillers per plant, panicle length inferring the predominance of non-additive gene action. The parents, Akshyadhan and IR 72 were found to be good combiners for grain yield and its contributing traits viz., test weight, panicle length, whereas RNR 17497 and MTU 1001 were poor combiners for grain yield. However, RNR 19399 and IR 64 were recorded high significant gca values for head rice recovery, kernel length after cooking and kernel elongation ratio indicating their suitability as parents for improving these quality traits. The parents, AAGP 9772 and IR 72 were identified as best combiners for earliness and dwarfness. Conspicuously, all the parents which have positive significant gca effects for test weight recorded negative significant gca effects for number of filled grains per panicle indicating the prevalence of strong negative correlation among them. The hybrid Akshyadhan x MTU 1001 recorded highest significant sca effect for grain yield followed by AAGP 9772 x MTU 1001 and IRLON 270 x NLR 34449. These two hybrids have also recorded highest significant positive

heterosis for grain yield over best check MTU 1010 and hence these crosses could be handled further for selection of segregants with high grain yield.

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