

Category	: International Rice Research Conference
Select Theme	: Genetic improvement
Endorsement email	:
Keyword 1	: Hybrid rice
Keyword 2	: Genotype x Environment Interactions
Keyword 3	: Breeding Strategy
Title of Entry	: Deciphering the lower performance of hybrids compared to inbreds within non-early maturity groups for the improvement of breeding programs
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Affiliation 2	:
Select only one type of presentation	: 15 minute oral presentation
Abstract	: Discovering traits of interest for higher yield potential in rice implies to consider differences in growing conditions (dry vs. wet seasons) and in maturity groups. This issue was addressed through the performance analysis of 32 high-yielding but contrasted genotypes, including 20 hybrids from 4 distinct countries (Colombia, China, India, Philippines) grown during the two seasons in the Philippines. While grain yield of hybrids was significantly higher than that of inbreds (9.5 vs. 8.3 t ha ⁻¹) in the early maturity group in the dry season (slightly higher panicle number and panicle size), it was maintained or even reduced in the other cases, with the detrimental effect getting larger in the wet season and with longer crop duration. In these cases, biomass of hybrids was higher than that of inbreds but could not be converted into higher yield due to lower tillering efficiency. And the lower panicle number of hybrids was not compensated enough by any higher spikelet number per panicle. Grain size of hybrids of the late maturity group in the wet season was even lower than that of inbreds while it was not affected in the other cases. The gradual reduction in grain yield of hybrids compared to inbreds with increasing crop duration and when shifting from dry to wet season questions the mode of biomass partitioning of hybrids and will be discussed on the basis of the comparative behavior of component traits like plant architecture, panicle structure and stay-green ability.

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