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Category	: International Rice Research Conference
Select Theme	: Genetic improvement
Endorsement email	:
Keyword 1	: Genetic gain
Keyword 2	: Estimation of Variance Components
Keyword 3	: Genotype x Environment Interactions
Title of Entry	: Genetic Trend and Adaptability of Irrigated Rice Varieties in Bangladesh
Presenting author	: Niaz Md. Farhat Rahman
Presenting author email	: niaz.sust@gmail.com
Co author 1	: Md. Shahjahan Kabir
Co author 2	: KM Iftekharuddoula
Co author 3	: Gary N Atlin
Co author 4	:
Co author 5	:
Co author 6	:
Co author 7	:
Co author 8	:
Co author 9	:
Co author 10	:
Co author 11	:
Co author 12	:
Co author 13	:
Co author 14	:
Affiliation presenting author	: Senior Scientific Officer, Agricultural Statistics Division, Bangladesh Rice Research Institute, Gazipur-1701.
Affiliation 1	: Director General, Bangladesh Rice Research Institute, Gazipur-1701.

Affiliation 2	: Principal Scientific Officer, Plant Breeding Division, Bangladesh Rice Research Institute, Gazipur-1701.
Affiliation 3	: Senior Program Officer, Bill and Melinda Gates Foundation, USA
Affiliation 4	:
Affiliation 5	:
Affiliation 6	:
Affiliation 7	:
Affiliation 8	:
Affiliation 9	:
Affiliation 10	:
Affiliation 11	:
Affiliation 12	:
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: A genetic improvement program of rice is essential for observing genetic gain to quantify the efficacy of breeding programs. The contribution of irrigated rice is maximum in total rice production of Bangladesh. Considering that importance present study was conducted in an aim to estimate the baseline genetic trends (genetic gain/loss) of Bangladesh Rice Research Institute released irrigated rice varieties and to identify high yielding varieties having wide adaptation to environment. Thirty three rice varieties among them 19 long duration varieties and 14 short duration varieties released since 1970 to 2015 were examined in 2015-2016 and 2016-2017 rice seasons. The experiments were conducted using RCB design with three replications at BRRI HQ and Nine regional stations. Linear mixed model were used for estimating genetic gain, which means the slope of the regression represent the grain yield on the year of variety release and additive main effects and multiplicative interaction (AMMI) model for adaptability analysis. Based on heritability analysis for the trials, seven locations for long duration and five locations for short duration were considered for genetic trend analysis. Combined analysis of variance for the two groups revealed significant differences among varieties. The genetic trends for the groups of varieties compared, adding group-specific intercepts and slopes. A annual increases of grain yields both in long duration and short duration rice varieties for the last 44 and 46 years were 3.13 and 14.29 kg ha-1 which reflects that the annual relative genetic gain 0.05 and 0.27% respectively. The genotype BRRI dhan60 for short duration and BR14, BRRI dhan59 & BRRI dhan61 for long duration were exhibited higher adaptability and stability which recommended to be used in all environments included in the study. Rajshahi for short duration and Satkhira for long duration was demonstrated high adaptable and stable region for all the genotypes included in the study. Experimental findings conclude that the genetic gains were attained through genetic improvement programs. But further increase of existing genetic gain through new varietal improvement schemes is essential to attain the genetic potential for grain yield which is extreme necessity for feeding country’s ever increasing populations.

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