Poster Session | Abiotic Stress for Crop Production | P3: Poster Session

[P3] Abiotic Stress for Crop Production

2021年9月9日(木) 12:15 ～ 14:00 Room 3 (Poster) (Abiotic Stress for Crop Production)

12:15 ～ 13:00

[P3-15]Combination of GGE and BLUP Models in the Selection of Rice Varieties Adapted to the Rainfed Lowlands

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Developing lines tolerant to water stress that are highly productive, widely adapted, and stable across environments is crucial to sustain yield increases in the rainfed lowlands (RL). Fourteen varieties were tested in Multi-Environment Trials in 19 experiments across three years. Genotype plus Genotype-vs-Environment interaction (GGE) and Best Linear Unbiased Prediction (BLUP) models were used for genotype mega-environment evaluation while correlation identified traits which are related to grain yield. Genotype confidence index revealed that half of the environments were identified as unfavorable RL, wherein, DRS14 is the best performing genotype across all environments (3.48 t/ha), unfavorable RL (2.78 t/ha), and favorable RL (4.11 t/ha). Moreover, the GGE model identified DRS14 as the best ranking genotype that is location-specific to 18 out of 19 environments. However, based on the mean vs stability biplot and the BLUP model, DRS14 is highly unstable. Bivariate analysis showed that grain yield is positively correlated to shoot dry weight, while low negative relationships were observed for total root length (10-20 cm) and total lateral root length (10-20 cm). Ultimately considering productivity, wide adaptation, and stability across environments in both models, DRS768, DRS63, YTH183, and YTH303 meet parameters in productivity, wide-adaptation, and stability across RL environments.