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**Statistical Analysis of Genotype x Environment Interaction in
Transplanted Rice**

by

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ABSTRACT

The genotype x environment interaction (GE) in transplanted rice was investigated using yield data from the 2002 Wet Season. National Cooperative Tests to generate information vital not only to making varietal recommendations but also in the improvement of the conduct of multi-location trials. Yield data on promising varieties of transplanted rice evaluated in 18 locations were obtained from the Philippine Rice Research Institute in Maligaya, Muñoz, Nueva Ecija. Significant heterogeneity of variances among the 18 locations were revealed by the Bartlett's Chi-Square test ($p=1.000$). A subset consisting of 5 locations whose Mean Square Errors (MSEs) were more or less homogeneous ($p=0.06$) were pooled in the combined analysis of variance to have a valid test for the significance of the GE interactions. Significant GE were detected, $F_c = 2.63$ ($p < 0.05$). Using AMMI analysis, genotypes and locations were characterized with respect to their adaptability and their influence on the genotypes, respectively. Highly adapted genotypes were identified namely: *Matatag5*, *Matatag6*, *Matatag3* and PSB Rc28 as forming a convex hull in the AMMI1 biplot. IR65 and IR72 showed specific adaptability while PR31563-AR32-19-3-4, PR30244-AC-9-1 and PR27445-3B-12-1 showed general adaptability to all environments. Locations showing strong interactive forces as well as locations having similar effects were identified.

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