Parametric Stability Analysis for Yield of Chili Pepper (Capsicum annuum L.)


ABSTRACT
The objective of this study was to identify the stability of seven hybrid chili pepper genotypes that have been developed at Genetics and Plant Breeding Laboratory, Department of Agronomy and Horticulture IPB. The study used eight yield stability analyses and Additive Main Effect Multiplicative Interaction (AMMI) methods. The design was randomized complete block design with three replications as blocks using the genotypes of IPB CH1, IPB CH2, IPB CH3, IPB CH5, IPB CH25, IPB CH28, IPB CH50, and five commercial varieties, i.e. Adipati, Biola, Gada, Hot Beauty and Imperial. These genotypes were planted at six different locations at Ciherang, Leuwikopo, Tajur, Subang, Rembang and Boyolali. IPB CH28, IPB CH25, IPB CH1 and IPB CH2 were more stable cultivars than IPB CH3, IPB CH5, IPB CH50, Adipati and Biola, which had 10, 9, 8, and 6 out of all 10 stability statistics used, respectively. IPB CH28 and IPB CH25 being the most stable cultivars. IPB CH3 was the best genotype compared to the checks based on pair wise GxE interaction test. Based on post predictive success, the AMMI2 model was able to explain 85.51% of the interaction-influenced variation. The stable genotypes in six locations were IPB CH1, IPB CH2, IPB CH25, IPB CH28, and IPB CH50. IPB CH3 genotype was locally adapted for Subang.

Keywords: chili pepper, multi location trials, yield stability

Full paper: PARAMETRIC STABILITY