

## **Genotype x environmental interaction and stability analysis of yield components in maize (*Zea mays* L.)**

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**ABSTRACT :** Stability for new maize hybrids across different environmental condition is an important target in maize breeding programme. The main objective of this study was to identify stable high yielding hybrids in different environmental conditions. The experiment was performed using Complete Randomized Block Design in three replication on the experimental field different environmental conditions. A total number of 90 hybrids along with four checks have were analyzed. There was considerable variation among genotypes and environments for grain yield. The analysis of variance showed that significant mean squares due to environments were observed in all the characters. Parental lines P<sub>4</sub>, P<sub>9</sub> and hybrids P<sub>1</sub> x P<sub>5</sub>, P<sub>2</sub> x P<sub>5</sub>, P<sub>2</sub> x P<sub>10</sub>, P<sub>4</sub> x P<sub>5</sub>, P<sub>4</sub> x P<sub>7</sub>, P<sub>5</sub> x P<sub>3</sub>, P<sub>7</sub> x P<sub>3</sub>, P<sub>7</sub> x P<sub>6</sub> and P<sub>9</sub> x P<sub>1</sub> having higher mean values ( $b_i < 1$ ) with non-significant S<sup>2</sup>di were stable under unfavourable environment for high grain yield per plant. Hybrids P<sub>2</sub> x P<sub>3</sub>, P<sub>3</sub> x P<sub>1</sub>, P<sub>3</sub> x P<sub>2</sub>, P<sub>4</sub> x P<sub>1</sub> and P<sub>6</sub> x P<sub>4</sub> exhibited non-significant S<sup>2</sup>di,  $b_i > 1$  and mean values higher than the population mean and best check “DHM 117”. It thus indicated that these hybrids were stable for this trait under favourable environments with high yield potential.

**Key Words:** Maize, G x E interaction, stability, yield components.