

## **Adaptability of promising CIMMYT maize hybrids across diverse maize growing environments in Sri Lanka**

W.M.R. Kumari<sup>1</sup>, D.C.S.M.I. Wijewardhana<sup>1</sup>, N.A.P.S.G. Upasantha<sup>1</sup>,  
W.M.N.D. Gunathilake<sup>2</sup>, T. Karunainathan<sup>3</sup>, W.M.W. Weerakoon<sup>4</sup> and B.S. Vivek<sup>5</sup>

<sup>1</sup>*Field Crops Research and Development Institute, Mahailuppallama, Department of Agriculture, Sri Lanka,*

<sup>2</sup>*Grain Legumes and Oil Crops Research and Development Institute, Angunakolapalasse, Sri Lanka.*

<sup>3</sup>*Agriculture Research Station, Thirunewelli, Sri Lanka*

<sup>4</sup>*Department of Agriculture, Sri Lanka*

<sup>5</sup>*CIMMYT, India, c/o ICRISAT, Patancheru, Hyderabad, India*

### **Abstract**

Maize is the most important cereal crop mainly grown as a rainfed upland crop in the Dry zone of Sri Lanka. Introduction of CIMMYT maize hybrids to local farmers can increase the availability of varieties with high yield potential and enhanced nutritional quality and environmental adaptability. Hence, introducing drought tolerant maize hybrids is vital for maize based cropping systems where unexpected intermittent drought is experienced even in rainy seasons. Testing adaptability and stability of CIMMYT drought tolerant single cross maize hybrids and selection of promising hybrids were carried out in multi-environmental trials conducted in maize growing areas in 2016, 2017 and 2018. A method where grain yield deviation of each variety from environmental mean in each environment was calculated to test adaptability and stability of varieties across environments. The maize hybrids, namely, VH112926, VH12264 and VH12263 were finally selected as the most adaptable and stable hybrids over diverse environments where they recorded an average yield of 5.81 to 5.95 t/ha with desirable ear characteristics. The selected hybrids showed 0-3 days of anthesis-silking interval, uniform ears, uniform color, better grain filling and good husk cover which are of highly concerned by maize farmers in Sri Lanka.

**Key words: Adaptability and stability, Drought tolerant, Maize hybrids, Sri Lanka.**