



RESEARCH ARTICLE

Maize inbred lines screening for resistance against *Chilo partellus*

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ABSTRACT

Screening of 145 maize inbred lines comprising of 20 sweet corn, 13 popcorn, 43 QPM, 20 speciality corn and 49 normal maize against *Chilo partellus* during *Kharif* 2009 and 2010 was done at Maize Research Centre, Rajendranagar. Artificial infestation was done at 12 days after germination and leaf injury rating was recorded on 1-9 scale at 30 days after infestation in both the replications. HSSW(HS)C1f3(SH2SH2), DMSC 3, DMSC16, DMSC 28, HKIPC 4B-1, HKIPC 5, HKIPC 8, WINPOP 4, WINPOP 43, V351, CM123, CM133, CM 139, CM 500, CM 502, HKI C78, HKI 141, HKI C323, Ae-40, CML-154, CML-384, NC 392, MIRT&PT-3, HKI 17-2, HKI 26-2-4-(1-2), HKI 31-2, HKI 164-3(2-1)-1, HKI 164-4-(1-3)-2-2, HKI 164-7-7-ER2, HKI 164-7-4ER3, HKI 164-7-4-2, HKI 164-4-(1-3), HKI 193-2-2, CML165, CML167, DMR QPM 03-124, DMR QPM 58-26, CML 175, CL-QRCYQ-47, DMRQPM-03-113, Pool 16BNSEQC3F6x38-1, PFSR/51016-1, PFSR R2, PFSR S3, JCY2-1-2-1-1-B-1-2-3-1-1-1, JCY2-7-1-2-1-B-1-2-1-1, JCY3-7-1-2-1'B-1-1-4-1 and SW-930-313-23-PO-49-54-1-3-1-1-1-2-1-2-1-2-3-1-1-2 were least susceptible to *C. partellus* and can be used in breeding stem borer resistant hybrids.

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INTRODUCTION

Maize has occupied an important place in India due to its potential and greater demand for food, feed and industrial utilization. In India, maize ranks fifth in total area, fourth in production and third in productivity. Around 250 species of insect and mite species attack maize in field and storage conditions (Mathur, 1991). The average loss caused by the insect pests is estimated to be 10 per cent. Among them, spotted stem borer, *Chilo partellus* (Swinhoe) (Crambidae: Lepidoptera) is the most serious one during *Kharif* season causing 26.7-80.4 per cent yield losses in different agroclimatic regions of India (Panwar, 2005). Screening of germplasm from different parts of the world to identify the sources of resistance and utilizing them for the development of varieties have so far remained the main stay in the management of maize pests.

MATERIALS AND METHODS

A total of 145 maize inbred lines comprising of 20 sweet

corn, 13 popcorn, 43 QPM, 20 speciality corn and 49 normal maize were supplied by Winter Nursery Centre, DMR, Hyderabad. Inbreds along with two checks, Win synthetic and Basiloal were screened against *C. partellus* during *Kharif* 2009 and 2010 in the fields of Maize Research Centre, Rajendranagar. After thorough land preparation, ridges were formed at 75 cm and sowing was done at a spacing of 20 cm within the row length of 3 m. Two replications were maintained. *C. partellus* was mass multiplied in the laboratory on artificial diet as per the procedure given by Siddiqui *et al.* (1977). At 12 days after germination, each individual plant was artificially infested with 20-25 black headed stage eggs of *C. partellus*. At 30 days after infestation, individual plants were rated on 1-9 scale based on leaf injury rating by Sarup *et al.* (1978).

Based on LIR, plants were classified into 3 categories :

Upto 3.0	:	Least susceptible
3.1-6.0	:	Moderately susceptible
>6.1 to 9.0	:	Highly susceptible