RESEARCH PAPER

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Fruit and shoot borer resistance (*Earias vittella* Fab.) in okra *[Abelmoschus esculentus* (L.) Moench]

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Okra,[*Abelmoschus esculentus* (L.) Moench] is an important warm season vegetable crop grown for its tender pods in tropical and sub tropical regions. The present research study has done with an objective to transfer shoot and fruit borer resistance to genotypes with desirable yield attributes. For this study three high yielding varieties and three resistant genotypes of okra germplasm representing four cultivated species *Abelmoschus esculentus* and two semi-domesticated species *Abelmoschus caillei* were crossed in all possible combinations and the parents and hybrids were evaluated for resistance against borer infestation. The F_1 hybrid of Sel 2 x AC5 identified as the best hybrid for both high marketable fruit yield and resistance to fruit and shoot borer, and it also showed field tolerance to Yellow Vein Mosaic Virus.

Key words : Okra, *Abelmoschus esculentus, Abelmoschus caillei,* Fruit and shoot borer

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INTRODUCTION

India is a major producer of okra in the world with an annual production of 32 lakh tonnes (NHB, 2005). Among the pests of okra, the shoot and fruit borer (*Earias* species) is the major pest causing high yield reduction. The conventional plant protection measures using chemicals for the control of this pest is undesirable from the point of view of residual effects and health hazards, as the tender pods are used for consumption. Thus to evolve or identify a new resistant variety is of paramount importance. Karuppaiyan (2006) screened 144 okra germplasm lines of Indian and exotic origin for shoot and fruit borer resistance and reported a number of resistant and moderately resistant genotypes. In the present study these genotypes were used as donors of resistance to develop high yielding resistance varieties.

RESEARCH METHODOLOGY

Six diverse okra genotypes *viz.*, Arka Anamika, KL9, Salkeerthy, Sel 2, Susthira and AC5 were crossed in a 6 x 6 complete diallel pattern. Thirty crosses were made out of which 24 F_1s were fertile and six interspecific crosses were sterile. Fifteen F_2s were selected on the basis of their F_1 performance and the performance of their parents in earlier studies and they were raised along with check variety Salkeerthy following a spacing of 50 x 40 cm. The treatments were raised in randomized block design (RBD) replicated thrice with 15 plants in each replication. The crop was grown in ridges and furrow system. Recommended package of practices of KAU was followed to grow a successful crop of okra. The crop was left open for natural infestation by fruit and shoot borer and no pesticides were sprayed. Fruit borer susceptible variety Salkeerthy was raised in border rows. Observations were recorded from three randomly selected plants from each replication and they were evaluated for yield attributes and resistance to fruit and shoot borer.

The relative degree of resistance to shoot and fruit borer infestation was judged on the basis of percentage shoot and fruit infestation in each genotype. Kumbhar *et al.* (1991) had given a rating scale to classify the genotypes based on resistance and it was followed to