

Research Paper :

Evaluation of sorghum genotypes in aphid and shoot bug nursery against major pests



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SUMMARY

The study was carried out during *Rabi* 2006-07 at the Regional Agricultural Research Station, Bijapur, Karnataka, India. Totally 49 entries from Aphid and Shoot bug Nursery were selected for the experiment including resistant (Y 75 for shoot bug and T x 428 for aphid), susceptible checks (Hathi Kuntha for shoot bug and 296B for aphid) and local checks (DSV 4 and DSV 5). The entries *viz.*, CSV 216R, EC 8-2, PEC-10-1, SLR 37, SLR 1, SLR 47, IS 33722, SLV 35, SLR 32, Maulee, PU 10-1 and IS 33844-1 were found to be resistant to shoot fly based on dead hearts and trichomes on the lower surface of leaf. Among different genotypes *viz.*, T x 428, EP 65 and SLR 37 were grouped under resistant category for aphids. The entries *viz.*, T x 428, CSV 216R, SLV 29, SLV 31, SLR 35, SLR 37, SLR 10 and Y 75 were found to be resistant to shoot bug by recording significantly lowest shoot bug population density per plant and percentage of plant damage due to sorghum stripe disease caused by shoot bug. Thus, the genotype SLR 37 exhibited multiple resistance to shoot fly, shoot bug and aphid. The genotype T x 428 was found to possess multiple resistances to aphid and shoot bug.

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Shoot fly, Aphid,
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Shoot fly (*Atherigona soccata* Rondani), Aphid (*Melanaphis sacchari* Zehntner) and shoot bug (*Peregrinus maidis* Ashmead) are serious pests of *Rabi* sorghum in Northern Karnataka, India. Most of the released hybrids and high yielding varieties are highly susceptible to these pests. Shoot fly is one of the serious pests of sorghum, which causes damage to the seedlings and young plants resulting in deadhearts. Sorghum aphid is becoming economically important in recent years in many sorghum-growing areas leading to losses in grain and fodder yield. The shoot bug is a major hurdle in *Rabi* sorghum production by causing dual problem of direct loss by sucking the sap and indirect damage by transmitting sorghum stripe disease. Hence, it comes in the way of harvesting potential yield of grain and fodder. Effective chemical control measures have been developed for their control which involves the number of insecticidal treatments. The limitations of these methods are pollution hazards and cash inputs for plant protection. Moreover,

insecticides are hazardous to many target and non-target species in addition to disturbance in crop eco-system which led scientists to find out newer, safer, cost effective alternatives as the components of integrated pest management (Pawar and Kadam, 1995; Balikai, 2003). Further, the relationship of various plant characters with shoot fly resistance has been studied earlier by many workers (Singh and Rana, 1986; Patel and Sukhani, 1990). The resistant cultivars reduce the cost, are easy to execute and can fit in the IPM programme. In this study, an attempt has been made to know the reaction of various sorghum genotypes in aphid and shoot bug nursery to major pests.

MATERIALS AND METHODS

The study was carried out during *Rabi* 2006-07 at the Regional Agricultural Research Station, Bijapur, Karnataka, India. In total 49 entries from Aphid and Shoot bug Nursery were selected for the experiment including resistant (Y 75 for shoot bug and T x 428 for aphid), susceptible checks (Hathi Kuntha for

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