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Reaction of sorghum germplasm against shoot fly (*Antherigona soccata* Raondani).

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Abstract

Fifty sorghum germplasm were evaluated under field conditions against Shoot fly (*Antherigona soccata*) at Collage of Agriculture Gwalior. On the basis of data Per cent dead heart caused by Shoot fly in different genotypes ranged from 4.92 to 25.38%. Genotype Gird-17 was found less susceptible to Shoot fly followed by E-25, Gird-48, ERS-29, E-192, Gird-8, Gird-28, ER-10-1 and E-224. Whereas, genotype E-199 was found highly susceptible to Shoot fly followed by ER-32 and E-241.

Keywords: Shoot fly (*Antherigona soccata*)

Introduction

The attack of many insect pests causes severe losses to the sorghum. Over 150 insect species have been reported to damage sorghum in different agro-ecosystems (Jotwani *et al.*, 1980) [4]. Shoot fly (*Antherigona soccata*) is the major pest of sorghum. Causes enormous losses to the sorghum crop every year. For the integrated management of the insect pest in sorghum involves cultural practices, and use of insecticides. Cultural practices are effective against certain insect species. Chemical control is expensive and numerous applications may be required. This is often beyond the reach of the most farmers. Host plant resistance as a method for pest control offers many advantages in the semi-arid tropics. Therefore, the present investigations were conducted to find out the less susceptible genotype against Shoot fly (*Antherigona soccata*).

Material and Methods

Fifty genotypes were sown in kharif season at experimental field of Department of Entomology, College of Agriculture, RVSKVV, Gwalior (M.P.). Each genotype was sown in double row of 4 meter length replicated two times. Normal agronomical practices were followed for raising the crop successfully. Fish meal was applied of different spots in the research experiment for attracting shoot fly. Observation recorded on per cent dead heart caused by shoot fly in each plot at 14, 21 and 28 days after emergence of the crop.

Result and Discussion

Per cent dead heart at 14 DAE: On the basis of data per cent dead heart caused by shoot fly at 14 days after emergence in different genotypes ranged from 0.81% in ER-10-1 to 15.86% in E-199. Genotypes ERS-29 and Gird-16 were found free from the presence of dead heart. Minimum per cent dead heart (0.81%) recorded in genotype ER-10-1 indicate their less susceptibility to Shoot fly followed by Gird-7, ER-10, SPV-1328, E-25, Gird-18 and Gird-1. On the other hand maximum per cent dead heart (15.86%) recorded in E-199 indicate their higher susceptibility to Shoot fly followed by E-241.

Per cent dead heart at 21 DAE: On the basis of data significant differences were recorded among different genotypes with regards to per cent dead heart caused by shoot fly ranged from 2.14% in Gird 48 to 21.41% in E-199. Minimum per cent dead heart (2.14%) recorded in genotype Gird 48 indicate their less susceptibility to Shoot fly followed by Grid 17, Gird 21, E-25, Gird 7, SPV-1862, Gird 44 and Gird 1. On the other hand maximum per cent dead heart (21.41%) recorded in E-199 indicate their higher susceptibility to Shoot fly followed by E-241.

Per cent dead heart at 28 DAE: On the basis of data at 28 days after emergence significant differences were observed in different genotypes with regards to per cent dead heart caused by shoot fly ranged from 4.92% in Gird 17 to 25.38% in E-199. Minimum per cent dead heart (4.92%) recorded in genotype Gird 17 indicate their less susceptibility to Shoot fly followed by E-25, Gird 48, ERS-29, Gird-8 and SPV-1862. On the other hand maximum per cent dead heart (25.38%)

recorded in E-199 indicate their higher susceptibility to Shoot fly followed by ER-32 and E-241.

Similar to the present finding Bhadviya (1995) ^[2], Gour (1995) ^[3], Singh and Grwal (1997) ^[5] & Balikai and Biradar (2004) also reported less susceptibility in different genotypes against Shoot fly. The variation in susceptibility may be due the genotypes taken for experimentation by different workers.

Table 1: Per cent dead heart caused by shoot fly in different genotypes of sorghum

S. No.	Varieties	Per cent dead heart at		
		14 DAE	21 DAE	28 DAE
1	ER-17	8.93 (3.07)**	10.99 (19.35)*	13.87 (21.85)*
2	E- 189	4.38 (2.21)	4.97 (12.81)	9.97 (18.39)
3	Gird- 33	5.83 (2.52)	7.87 (16.28)	8.25 (16.68)
4	Gird- 39	4.44 (2.22)	8.89 (17.28)	18.89 (25.66)
5	Gird-7	0.91 (1.19)	3.60 (10.93)	7.24 (15.58)
6	Gird-50	2.73 (1.80)	9.70 (18.11)	12.64 (20.80)
7	E-228	4.51 (2.24)	9.02 (17.38)	10.74 (19.10)
8	E-25	1.11 (1.27)	3.24 (10.18)	5.28 (13.24)
9	E-198	8.77 (3.04)	10.66 (19.04)	12.61 (20.77)
10	Gird-28	3.77 (2.07)	5.61 (13.69)	6.09 (14.27)
11	ER- 10-1	0.81 (1.14)	8.04 (16.45)	8.04 (16.45)
12	ER-31	2.97 (1.86)	6.84 (15.07)	8.04 (16.39)
13	Grid- 19	5.01 (2.35)	5.87 (13.98)	8.20 (16.62)
14	E-241	12.33 (3.58)	14.65 (22.49)	16.14 (23.63)
15	Gird- 18	1.14 (1.28)	5.41 (13.33)	9.55 (17.98)
16	Gird- 21	2.04 (1.59)	3.08 (9.94)	7.13 (15.45)
17	E-207	6.14 (2.58)	7.04 (15.36)	9.01 (17.46)
18	SPV-1862	2.08 (1.61)	4.04 (11.59)	6.07 (14.25)
19	E-192	5.58 (2.47)	7.17 (15.47)	7.21 (15.54)
20	E-195	2.22 (1.65)	9.65 (18.04)	11.87 (20.10)
21	I-081	4.48 (2.23)	8.40 (16.80)	10.78 (19.15)
22	E-225	4.76 (2.29)	7.03 (15.28)	10.87 (19.24)
23	E-205	1.94 (1.56)	8.72 (17.14)	10.76 (19.14)
24	Gird-38	3.65 (2.04)	6.43 (14.64)	9.19 (17.55)
25	E-199	15.86 (4.04)	21.41 (27.54)	25.38 (30.18)
26	Gird-1	1.70 (1.48)	4.31 (11.87)	7.49 (15.73)
27	Gird-17	1.98 (1.57)	2.96 (9.77)	4.92 (12.76)
28	Gird-44	2.91 (1.85)	4.08 (11.62)	6.69 (14.98)
29	Gird-35	3.75 (2.06)	4.73 (12.55)	11.73 (20.02)
30	ERS-15	2.81 (1.82)	5.42 (13.43)	10.81 (19.18)
31	Gird- 29	5.59 (2.47)	7.38 (15.75)	10.13 (18.54)
32	ERS-29	0.00 (0.71)	5.95 (14.06)	5.98 (14.12)
33	Gird 49	5.05 (2.35)	6.17 (14.34)	10.10 (18.51)
34	Gird 41	2.80 (1.82)	8.51 (16.91)	13.41 (21.41)
35	Gird 48	2.14 (1.62)	2.14 (8.39)	5.41 (13.33)
36	E 196	5.56 (2.46)	7.39 (15.61)	9.06 (17.51)
37	ER-32	8.57 (3.01)	12.85 (20.97)	14.84 (22.51)
38	ER 10	0.93 (1.19)	4.64 (12.39)	8.42 ((16.83)
39	Gird 8	3.02 (1.88)	14.84 (22.63)	14.84 (22.63)
40	Gird 16	0.00 (0.71)	8.42 (16.83)	8.42 (16.83)
41	GGUB 48	4.90 (2.32)	5.06 (12.92)	10.40 (18.67)
42	Gird 42	2.65 (1.77)	5.02 (12.87)	7.86 (16.26)
43	EJN 23	1.92 (1.56)	7.64 (15.90)	9.48 (17.91)
44	Gird 45	3.42 (1.98)	5.03 (12.95)	9.03 (17.46)
45	SPV 1328	0.93 (1.19)	6.53 (14.77)	9.38 (17.81)
46	ER-6	1.97 (1.57)	7.69 (16.04)	11.24 (19.55)
47	Gird 40	2.06 (1.60)	6.90 (15.00)	14.56 (22.34)
48	E-238	7.27 (2.79)	10.51 (18.89)	14.79 (22.57)
49	E-224	2.01 (1.58)	5.21 (13.16)	6.56 (14.80)
50	I-033	3.70 (2.05)	8.68 (17.12)	10.99 (19.31)
	SE(m)±	(0.24)	(1.23)	(1.183)
	CD at 5%	(0.69)	(3.51)	(3.37)

DAE: Days after emergence

** Figures in parenthesis are $\sqrt{\frac{t}{n} \times 0.5}$ values and * Figures in parenthesis are arc sign values

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