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IN VITRO SCREENING OF OKRA GERMPLASM ACCESSIONS AND VARIETIES AGAINST OKRA SHOOT AND FRUIT BORER, *EARIASVITTELLA* (FAB)

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ABSTRACT

An in vitro experiment was conducted atInsectary of Agricultrual College and Research Institute, Madurai, during Kharif 2015 to identify the infestation ofokra shoot and fruit borer, *Eariasvitella* (Fab). Thirty okra varieties were screened to know their response on the basis of fruit damage scale. Based on the infestation of the fruits the grading is done as resistant, moderately resistant, moderately susceptible, susceptible sources. Among the thirty accessions, 11 were moderately resistant like IC 90285, Ic 90223 and 10 were moderately susceptible namely IC 90269, IC 90284, IC 15438, and one was susceptible – PusaSawani (Check), and eight were found to be resistant sources namely VRO 104, and Punjab 8.

KEYWORDS: Screening, Okra, Shoot and Fruit Borer, Germplasm, Resistance

INTRODUCTION

Okra (*Abelmoschusesculentus* L.) commonly known as bhendi or lady's finger belongs to the Malvaceae family and is an important vegetable crop grown across different states of the country throughout the year. Among the different species of genus, *Abelmoschus*, the most popularly grown species is*Abelmoschusesculentus*in Asia and has great commercial demand due to its nutritional value. The major production constraint for okra is okra shoot and fruit borer, which becomes unfit for consumption and as a result the reduction in the production is about 35-76 per cent. Considering the limitations in the chemical control method, the alternative methodof mechanism of resistance is preferred. For this the screening of the accessions becomes necessary for identifying the resistant source for further studies.

MATERIALS AND METHODS

The experiment was conducted at Agricultural College and Research Institute, Madurai, during the Kharif 2015, to screen the okra accessions in pot culture condition. For this, 20 germplasm accessions and 10 popular varieties were chosen for screening of the pests in 3 replications (Table 1). The experimental materials were raised in 30 pots in three replication. All the recommended cultural practices were followed to raise the crop and no plant protection measures were followed.

SCREENING FOR RESISTANCE AGAINST SHOOT/FRUIT BORERS

Shoot Damage

The shoot borer infestation was assessed at vegetative stage based on total number of shoots and number of shoots exhibiting symptom and the same was used to compute the per cent shoot damage. The per cent shoot damage was calculated by adopting the following formula.

Per cent shoot damage	=	Number of damaged shoots / Total number of shoots	X 100

Fruit Damage

At harvest, fruit borer damage was calculated using, by counting the total number of fruits and number of damaged fruits, which was then expressed in percent damage.

Percent fruit damage	=	Number of damaged fruits / Total number of fruits	X 100

RESULTS AND DISCUSSIONS

The incidence of Okra shoot and fruit borer *Eariasvitella* was studied in the kharif 2015, and presented in the Table 2. During this period, the accession namely PusaSawani was recorded as the susceptible source with the result of 18.23, as this is in close conformity with that of Raut and Sonone. (1979) as it showed the highest fruit and shoot damage Konsam*et al*., 2015. The accession Varshauphar, VRO 104,106, Kashimangali, Kashipragathi, Kashivibhuti, Pusa A4, and Punjab 8 showed the resistant level to shoot and fruit damage as in the studies done by Prabhu et al., 2009 and Konsam*et al*., 2015. It recorded the tolerant level of shoot and fruit damage comparatively to the other accessions. The accessions, IC 90269,IC 90270, IC 90284, IC 15438, IC15537,IC15027,IC45827, IC 48281,IC 48948 and Arkaanamika showed the moderately susceptible level for the shoot and fruit borer. It had a level of more than 5 to 10. This is in close conformity with the line of Kumbhar*et al*., (2003) and Mahaveer*et al*., 2009. Also the studies are on par with results of Rajesh and Jat (2009).

The accessions IC 90285, IC90223, IC 90219, IC 90218, IC90202, IC90203, IC90213, IC90214, and IC 52301 were resulted in the level of moderately resistant and this result is in conformity with that of the results discussed by Konsam*et al*., 2015.

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Table 1: Accessions Used and Their Source

S.No	Accessions	Source of Accessions
1	IC90202	NBPGR
2	IC90203	NBPGR
3	IC90213	NBPGR
4	IC90214	NBPGR
5	IC90218	NBPGR
6	IC90219	NBPGR
7	IC90223	NBPGR

Table 1: Cond		
8	IC90285	NBPGR
9	IC90269	NBPGR
10	IC90270	NBPGR
11	IC90284	NBPGR
12	IC15438	NBPGR
13	IC15537	NBPGR
14	IC15027	NBPGR
15	IC45827	NBPGR
16	IC45828	NBPGR
17	IC48281	NBPGR
18	IC48948	NBPGR
19	IC14909	NBPGR
20	IC52301	NBPGR
21	Arkaanamika	TNAU
22	VRO-104	TNAU
23	Kashimangali	TNAU
24	Kashipragathi	TNAU
25	Punjab-8	TNAU
26	Pusasawani	TNAU
27	Kashivibuthi	TNAU
28	Varshauphar	TNAU
29	VRO 106	TNAU
30	PUSA A4	TNAU

Table 2: Level of Incidence of Okra Shoot and Fruit Borer

S.No	Accessions	*E. Vitella*	
		Mean Population	Level of Resistance
1	IC90202	4.68	MR
2	IC90203	5.45	MR
3	IC90213	4.27	MR
4	IC90214	4.80	MR
5	IC90218	4.21	MR
6	IC90219	4.91	MR
7	IC90223	3.84	MR
8	IC90285	4.32	MR
9	IC90269	6.62	MS
10	IC90270	7.73	MS
11	IC90284	6.05	MS
12	IC15438	6.80	MS
13	IC15537	7.23	MS

Table 2: Cond			
14	IC15027	5.66	MS
15	IC45827	6.36	MS
16	IC45828	4.08	MR
17	IC48281	7.04	MS
18	IC48948	6.32	MS
19	IC14909	4.76	MR
20	IC52301	6.20	MR
21	Arkaanamika	2.05	MS
22	VRO-104	2.39	R
23	Kashimangali	1.87	R
24	Kashipragathi	2.10	R
25	Punjab-8	11.90	R
26	Pusasawani	1.71	S
27	Kashivibuthi	2.00	R
28	varshaupha r	1.57	R
29	VRO 106	1.76	R
30	PUSA A4	3.73	R

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