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Screening of okra genotypes against major pests infesting okra

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Abstract
The investigations on "Screening of okra genotypes against major pests infesting okra." was carried out at research farm, Department of Entomology, (Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani) Maharashtra-India during *Kharif* 2024. The thirty genotypes were used for the study. The experiment was laid out in a Randomized Block Design (RBD) with three replications. Observations were recorded weekly on five randomly selected plants per plot to evaluate the incidence of major pests, namely aphid (*Aphis gossypii*), leafhopper (*Amrasca biguttula biguttula*), whitefly (*Bemisia tabaci*), thrips (*Thrips tabaci*), mite (*Tetranychus urticae*), and shoot and fruit borer (*Earias vittella*).
The genotypes were classified as resistant (R), moderately resistant (MR), susceptible (S), and highly susceptible (HS) based on mean pest population or percent fruit infestation, using scales established by Patil *et al.* (2020) [14], Kekan *et al*. (2022) [15], and Sharma *et al*. (1993) [16]. Genotypes PBN LF-116, PBN LF-122, PBN LF-124, PBN LF-125, PBN LF-126, PBN LF-128, PBN LF-130, PBN LF-133, and PBN LF-139 showed moderate resistance to multiple pests, including *Earias vittella*. Genotypes like PBN LF-114, PBN LF-124, and PBN LF-130 exhibited resistant (R) reactions specifically against leafhopper and thrips. Among them, PBN LF-124, PBN LF-125, and PBN LF-130 demonstrated consistent performance and are the most promising for developing multi-pest resistant okra varieties.

Keywords: Screening, okra, sucking pests, okra shoot and fruit borer

Introduction
Okra *(Abelmoschus esculentus)*, also known as lady's finger, is a widely cultivated vegetable in tropical countries, particularly in India, Nigeria, Pakistan, Cameroon, Iraq, and Ghana. Although it is not commonly grown in Europe and North America, the vegetable has gained popularity in these regions due to its high nutritional value, including significant amounts of Vitamin A, folic acid, carbohydrates, phosphorus, and magnesium. Okra is known by various local names across the globe, such as lady's finger in England, gumbo in the United States, guino gumbo in Spanish, guihero in Portuguese, and bhindi in India. It is commercially grown in countries like India, Turkey, Iran, Western Africa, Yugoslavia, Bangladesh, Afghanistan, Burma, Japan, Malaysia, Brazil, Ghana, Ethiopia, and the southern United States. In India, major okra-producing states include Uttar Pradesh 700 thousand tonnes, Bihar 788 thousand tonnes, West Bengal 862 thousand tonnes, Andhra Pradesh 1184 thousand tonnes, Karnataka 600 thousand tonnes, and Assam 500 thousand tonnes. (Anonymous, 2022-23).
Ripe okra seeds are roasted, ground, and used as a coffee substitute in some regions. The mature fruits and stems, rich in crude fiber, are used in the paper industry. Extracts from the seeds are also considered an alternative source of edible oil, with a pleasant taste and a high concentration of unsaturated fats such as oleic and linoleic acids. The seed oil content is approximately 40%. Okra is valued for its medicinal properties, particularly in treating genito-urinary disorders, spermatorrhoea, chronic dysentery, ulcers, and hemorrhoids. In developing countries like India, where malnutrition is prevalent, vegetables like okra play a crucial role in addressing dietary deficiencies. Currently, vegetables account for only 8 to 10 percent of the typical Indian diet, which is primarily vegetarian. Increasing vegetable consumption could help alleviate the reliance on cereals, particularly for vulnerable populations.

Okra attracts a large number of insect pests including leafhoppers, *Amrasca devastans*. and *Amrasca biguttula (Shirr.)*; aphids, *Aphis gossypii* (Glov.) cutworm, *Agrotis spp*. and mite *Tetranychus sp*. Among insect pests, aphids especially A. *gossypii* is considered as a one of the most important pest of okra (Dhaliwal GS., 2004). The aphids are soft bodied insects which suck the cell sap from the leaves, secrete lots of honey dew on the leaves, hence, weakening the plants and reducing both quantity and quality of the fruits. In addition to okra, the aphids also feed on a variety of plants including the cucurbits, cotton, citrus fruits, strawberry, beans, beets, spinach, eggplant, asparagus, a number of ornamental plants and many weeds. Okra crop is susceptible for pest infestation from early stage to maturity. Among the wide array of insect pests infesting okra crop, the sucking pests such as aphid, leafhopper and two species of whitefly are reported to be quite serious during all stages of the crop growth (Channabasavanna,). Therefore it is necessary to study the Screening of okra genotypes against major pests infesting okra.

Materials and methods

The present investigation was conducted at the research farm, Department of Entomology, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani during the *Kharif* season of 2024, in Randomized Block Design to screen the okra genotypes against major pests infesting okra. For screening experiment thirty healthy insect free and genetically pure seed of each okra varieties/ genotypes were used, collected from Department of Agricultural Botany, College of Agriculture, Parbhani. The observations were recorded on weekly intervals throughout the cropping season. The observations on three leaves each from top, middle and lower part per plant were considered for major sucking pests like, aphid (*Aphis gossypii*), leafhoppers (*Amrasca biguttula biguttula*), whitefly (*Bemisia tabaci*), thrips (*T. tabaci*) mite (*Tetranychus urticae*) etc. number of nymph and adults of sucking pest / 3leaves were counted and recorded at weekly intervals on (5 plants/ genotype) randomly selected plants up to the crop harvest. The observations of shoot and fruit borer were recorded at weekly intervals to assess the relative susceptibility of different genotypes of okra under natural infestation conditions. The genotypes were classified as resistant (R), moderately resistant (MR), susceptible (S), and highly susceptible (HS) based on mean pest population or percent fruit infestation, using scales established by Patil *et al.* (2020) [14], Kekan *et al*. (2022) [15], and Sharma *et al*. (1993) [16].

Table 1: Treatment details

Tr. No.	Okra Genotypes	Tr. No. Okra Genotype	Tr. No. Okra Genotype
T_1	PBN LF - 111	T11 PBN LF -121	T21 PBN LF -131
T_2	PBN LF - 112	T12 PBN LF -122	T22 PBN LF -132
T_3	PBN LF - 113	T13 PBN LF -123	T23 PBN LF -133
T_4	PBN LF - 114	T14 PBN LF -124	T24 PBN LF -134
T_5	PBN LF - 115	T15 PBN LF -125	T24 PBN LF -135
T_6	PBN LF - 116	T16 PBN LF -126	T25 PBN LF -136
T_7	PBN LF - 117	T17 PBN LF -127	T26 PBN LF -137
T_8	PBN LF - 118	T18 PBN LF -128	T28 PBN LF -138
T_9	PBN LF - 119	T19 PBN LF -129	T29 PBN LF -139
T_{10}	PBN LF - 120	T20 PBN LF -130	T30 Parbhani Kranti

Results and Discussion

The present investigation was carried out to assess the resistance of thirty okra genotypes against major insect pests under natural infestation conditions at the Department of Entomology, VNMKV, Parbhani, during *Kharif* 2024. The experiment was laid out in a Randomized Block Design (RBD) with three replications. Observations were recorded weekly on five randomly selected plants per plot to evaluate the incidence of major pests, namely aphid (*Aphis gossypii*), leafhopper (*Amrasca biguttula biguttula*), whitefly (*Bemisia tabaci*), thrips (*Thrips tabaci*), mite (*Tetranychus urticae*), and shoot and fruit borer (*Earias vittella*). The genotypes were classified as resistant (R), moderately resistant (MR), susceptible (S), and highly susceptible (HS) based on mean pest population or percent fruit infestation, using scales established by Patil *et al.* (2020) [14], Kekan *et al*. (2022) [15], and Sharma *et al*. (1993) [16].

Table 2: Screening of okra genotypes against aphid (*Aphis gossypii*) (*Kharif* 2024-25)

Sr. no	Genotypes	Aphid (/3 leaves)	Sr. no	Genotypes	Aphid (/3 leaves)
1	PBN LF - 111	10.91 S	16	PBN LF - 126	10.02 S
		(3.43)			(3.30)
2	PBN LF - 112	11.91 S	17	PBN LF - 127	11.32 S
		(3.57)			(3.50)
3	PBN LF - 113	11.13 S	18	PBN LF - 128	11.42 S
		(3.47)			(3.52)
4	PBN LF - 114	10.91 S	19	PBN LF - 129	6.44 MR
		(3.44)			(2.72)
5	PBN LF - 115	10.62 S	20	PBN LF - 130	10.06 S
		(3.40)			(3.29)
6	PBN LF - 116	9.58 MR	21	PBN LF - 131	9.11 MR
		(3.24)			(3.17)
7	PBN LF - 117	11.86 S	22	PBN LF - 132	8.04 MR
		(3.58)			(3.00)

8	PBN LF - 118	12.67 S (3.69)	23	PBN LF - 133	8.68 MR (3.10)
9	PBN LF - 119	10.15 S (3.32)	24	PBN LF - 134	8.94 MR (3.15)
10	PBN LF - 120	11.63 S (3.55)	25	PBN LF - 135	7.95 MR (2.99)
11	PBN LF - 121	10.96 S (3.45)	26	PBN LF - 136	8.32 MR (3.05)
12	PBN LF - 122	11.15 S (3.48)	27	PBN LF - 137	9.74 MR (3.27)
13	PBN LF - 123	8.83 MR (3.11)	28	PBN LF - 138	8.97 MR (3.15)
14	PBN LF - 124	12.09 S (3.61)	29	PBN LF - 139	6.86 MR (2.80)
15	PBN LF - 125	5.16 MR (2.48)	30	Parbhani Kranti	9.52 MR (3.24)
S.E.(m)					0.137
CD 5%					0.388
CV (%)					7.232

Aphid (*Aphis gossypii*) Infestation

The aphid population across the genotypes varied from 5.16 to 12.67 aphids / 3leaves. The genotype PBN LF-125 recorded the lowest mean aphid population (5.16 aphids / 3leaves), while PBN LF-118 recorded the highest infestation (12.67 aphids/ 3leaves). Moderately Resistant Genotypes (5.01-10.00 aphids / 3leaves): PBN LF-116, PBN LF-123, PBN LF-125, PBN LF-131, PBN LF-132, PBN LF-133, PBN LF-134, PBN LF-135, PBN LF-136, PBN LF-137, PBN LF-138, PBN LF-139, Parbhani Kranti. Susceptible Genotypes (>10.00 aphids / 3leaves): PBN LF-111, PBN LF-112, PBN LF-113, PBN LF-114, PBN LF-115, PBN LF-117, PBN LF-118, PBN LF-119, PBN LF-120, PBN LF-121, PBN LF-122, PBN LF-124, PBN LF-126, PBN LF-127, PBN LF-128, PBN LF-129, PBN LF-130. Resistant Genotypes (≤5.00 aphids / 3leaves): None

These results indicate a predominance of susceptibility among the genotypes evaluated, with only a small portion demonstrating moderate resistance. The infestation range of 5.16 to 12.67 aphids/ 3leaves highlights the significant variability among genotypes. Similar findings were reported by Sharma *et al*. (2020) [16], who highlighted high variability in aphid incidence and the role of genotypic resistance.

Table 3: Screening of okra genotypes against leafhopper (*Kharif* 2024-25)

Sr. no	Genotypes	Leafhopper (/ 3leaves)	Sr. no	Genotypes	Leafhopper (/ 3leaves)
1	PBN LF - 111	6.95 MR (2.82)	16	PBN LF - 126	6.83 MR (2.79)
2	PBN LF - 112	6.57 MR (2.75)	17	PBN LF - 127	6.49 MR (2.74)
3	PBN LF - 113	6.72 MR (2.78)	18	PBN LF - 128	6.4 MR (2.72)
4	PBN LF - 114	3.4 R (2.10)	19	PBN LF - 129	4.61 R (2.37)
5	PBN LF - 115	7.11 MR (2.83)	20	PBN LF - 130	6.45 MR (2.72)
6	PBN LF - 116	6.16 MR (2.67)	21	PBN LF - 131	6.9 MR (2.81)
7	PBN LF - 117	6.59 MR (2.75)	22	PBN LF - 132	7.08 MR (2.82)
8	PBN LF - 118	8.11 MR (3.01)	23	PBN LF - 133	6.53 MR (2.74)
9	PBN LF - 119	6.71 MR (2.78)	24	PBN LF - 134	6.86 MR (2.79)
10	PBN LF - 120	6.46 MR (2.71)	25	PBN LF - 135	6.73 MR (2.78)
11	PBN LF - 121	6.83 MR (2.80)	26	PBN LF - 136	6.82 MR (2.79)
12	PBN LF - 122	7.7 MR (2.94)	27	PBN LF - 137	6.07 MR (2.66)
13	PBN LF - 123	6.87 MR (2.80)	28	PBN LF - 138	6.8 MR (2.79)
14	PBN LF - 124	6.61 MR (2.74)	29	PBN LF - 139	5.49 MR (2.55)
15	PBN LF - 125	4.09 R (2.26)	30	Parbhani Kranti	6.36 MR (2.71)
S.E.(m)					0.106
CD 5%					0.3
CV (%)					6.747

Leafhopper (*Amrasca biguttula biguttula*) Infestation

The leafhopper population ranged from 3.40 to 8.11 / 3leaves. The lowest population was recorded in PBN LF-114 (3.40 leafhopper/ 3 leaves), whereas the highest was observed in PBN LF-118 (8.11). Resistant Genotypes (≤5.00 leafhopper/ 3 leaves): PBN LF-114, PBN LF-125, PBN LF-129 Moderately Resistant Genotypes (5.01-10.00): All other genotypes including Parbhani Kranti Susceptible Genotypes (>10.00 leafhopper/ 3 leaves): None

These results show that only three genotypes qualified as resistant. The rest fell under the moderately resistant category. The range of 3.40 to 8.11 leafhopper/ 3 leaves clearly distinguished resistant and moderately resistant entries. The presence of resistance in a limited number of genotypes aligns with the findings of Kekan *et al.* (2022) [15], who reported that resistance to leafhopper in okra is often attributed to morphological traits such as leaf hair density.

Table 4: Screening of okra genotypes against whitefly (*Kharif* 2024-25)

Sr. No	Genotypes	Mite (mean /3leaves)	Sr. no	Genotypes	Mite (mean /3leaves)
1	PBN LF - 111	1.97 MR (1.72)	16	PBN LF - 126	1.51 MR (1.58)
2	PBN LF - 112	2.12 MR (1.75)	17	PBN LF - 127	1.52 MR (1.58)
3	PBN LF - 113	1.53 MR (1.59)	18	PBN LF - 128	2.35 MR (1.82)
4	PBN LF - 114	1.38 R (1.53)	19	PBN LF - 129	1.52 MR (1.58)
5	PBN LF - 115	1.61 MR (1.61)	20	PBN LF - 130	1.98 MR (1.72)
6	PBN LF - 116	1.7 MR (1.63)	21	PBN LF - 131	1.61 MR (1.61)
7	PBN LF - 117	1.63 MR (1.62)	22	PBN LF - 132	2.89 S (1.93)
8	PBN LF - 118	2.04 MR (1.74)	23	PBN LF - 133	1.45 R (1.56)
9	PBN LF - 119	2.11 MR (1.75)	24	PBN LF - 134	1.93 MR (1.71)
10	PBN LF - 120	1.84 MR (1.67)	25	PBN LF - 135	2.22 MR (1.77)
11	PBN LF - 121	2.13 MR (1.74)	26	PBN LF - 136	1.66 MR (1.63)
12	PBN LF - 122	1.62 MR (1.61)	27	PBN LF - 137	2.08 MR (1.73)
13	PBN LF - 123	1.51 MR (1.58)	28	PBN LF - 138	2.82 S (1.93)
14	PBN LF - 124	2.47 MR (1.83)	29	PBN LF - 139	1.34 R (1.52)
15	PBN LF - 125	1.1 R (1.44)	30	Parbhani Kranti	2.08 MR (1.74)
S.E.(m)					0.114
CD 5%					NA
CV (%)					11.756

Whitefly (*Bemisia tabaci*) Infestation

The whitefly population varied from 2.25 to 4.99 / 3leaves. The genotype PBN LF-129 recorded the lowest population (2.25 whitefly /3leaves), indicating resistance, while PBN LF-118 recorded the highest (4.99 whitefly /3leaves), indicating susceptibility. Resistant Genotype (≤2.50 whitefly /3leaves): PBN LF-129. Moderately Resistant Genotypes (2.51-4.00): PBN LF-112, PBN LF-113, PBN LF-115, PBN LF-117, PBN LF-120, PBN LF-121, PBN LF-122, PBN LF-124, PBN LF-125, PBN LF-126, PBN LF-127, PBN LF-128, PBN LF-130, PBN LF-131, PBN LF-132, PBN LF-133, PBN LF-135, PBN LF-136, PBN LF-138, Parbhani Kranti. Susceptible Genotypes (>4.00 whitefly /3leaves): PBN LF-111, PBN LF-114, PBN LF-116, PBN LF-118, PBN LF-123, PBN LF-134, PBN LF-137, PBN LF-139

These observations are consistent with earlier reports by Sharma *et al.* (2020) [16], indicating that leaf pubescence and biochemical traits contribute to resistance against whiteflies. The infestation range of 2.25 to 4.99 whiteflies/plant further demonstrates the diversity in genotypic response to this pest.

Table 5: Screening of okra genotypes against thrips (*Kharif* 2024-25)

Sr. no	Genotypes	Thrips (/3 leaves)	Sr. no	Genotypes	Thrips (/3 leaves)
1	PBN LF - 111	6.7 MR (2.77)	16	PBN LF - 126	7.1 MR (2.82)
2	PBN LF - 112	6.31 MR (2.70)	17	PBN LF - 127	6.49 MR (2.73)
3	PBN LF - 113	6.39 MR (2.71)	18	PBN LF - 128	7.06 MR (2.83)
4	PBN LF - 114	4.22 R (2.26)	19	PBN LF - 129	4.83 R (2.41)
5	PBN LF - 115	7.11 MR (2.83)	20	PBN LF - 130	6.45 MR (2.71)
6	PBN LF - 116	6.16 MR (2.66)	21	PBN LF - 131	6.12 MR (2.65)
7	PBN LF - 117	6.25 MR (2.69)	22	PBN LF - 132	7.08 MR (2.81)
8	PBN LF - 118	8.11 S (3.01)	23	PBN LF - 133	6.11 MR (2.65)
9	PBN LF - 119	6.04 MR (2.65)	24	PBN LF - 134	7.15 MR (2.83)
10	PBN LF - 120	6.46 MR (2.70)	25	PBN LF - 135	6.73 MR (2.78)
11	PBN LF - 121	7.02 MR (2.83)	26	PBN LF - 136	7.21 MR (2.86)
12	PBN LF - 122	6.93 MR (2.81)	27	PBN LF - 137	5.71 MR (2.58)
13	PBN LF - 123	6.87 MR (2.80)	28	PBN LF - 138	6.8 MR (2.79)
14	PBN LF - 124	6.61 MR (2.74)	29	PBN LF - 139	6.17 MR (2.67)
15	PBN LF - 125	4.16 R (2.27)	30	Parbhani Kranti	6.34 MR (2.70)
S.E.(m)					0.126
CD 5%					NA
CV (%)					8.068

Thrips (*Thrips tabaci*) Infestation

The thrips population varied from 4.16 to 8.11 thrips /3leaves. PBN LF-125 showed the lowest population (4.16 thrips /3leaves), while PBN LF-118 was the highest (8.11 thrips /3leaves). Resistant Genotypes (≤5.00 thrips /3leaves): PBN LF-114, PBN LF-125, PBN LF-129. Moderately Resistant Genotypes (5.01-8.00): PBN LF-111, PBN LF-112, PBN LF-113, PBN LF-115, PBN LF-116, PBN LF-117, PBN LF-119, PBN LF-120, PBN LF-121, PBN LF-122, PBN LF-123, PBN LF-124, PBN LF-126, PBN LF-127, PBN LF-128, PBN LF-130, PBN LF-131, PBN LF-132, PBN LF-133, PBN LF-134, PBN LF-135, PBN LF-136, PBN LF-137, PBN LF-138, PBN LF-139, Parbhani Kranti. Susceptible Genotypes (>8.00 thrips /3leaves): PBN LF-118. The infestation range of 4.16 to 8.11 thrips /3leaves indicates most genotypes fell in the moderately resistant group, with only one genotype being susceptible. The presence of three resistant genotypes aligns with findings that suggest resistance to thrips may be governed by physical and biochemical plant traits.

Table 6: Screening of okra genotypes against mite (*Kharif* 2024-25)

Sr. No	Genotypes	Mite (mean /3leaves)	Sr. no	Genotypes	Mite (mean /3leaves)
1	PBN LF - 111	1.97 MR (1.72)	16	PBN LF - 126	1.51 MR (1.58)
2	PBN LF - 112	2.12 MR (1.75)	17	PBN LF - 127	1.52 MR (1.58)
3	PBN LF - 113	1.53 MR (1.59)	18	PBN LF - 128	2.35 MR (1.82)
4	PBN LF - 114	1.38 R (1.53)	19	PBN LF - 129	1.52 MR (1.58)
5	PBN LF - 115	1.61 MR (1.61)	20	PBN LF - 130	1.98 MR (1.72)
6	PBN LF - 116	1.7 MR (1.63)	21	PBN LF - 131	1.61 MR (1.61)
7	PBN LF - 117	1.63 MR (1.62)	22	PBN LF - 132	2.89 S (1.93)
8	PBN LF - 118	2.04 MR (1.74)	23	PBN LF - 133	1.45 R (1.56)
9	PBN LF - 119	2.11 MR	24	PBN LF - 134	1.93 MR

		(1.75)			(1.71)
10	PBN LF - 120	1.84 MR (1.67)	25	PBN LF - 135	2.22 MR (1.77)
11	PBN LF - 121	2.13 MR (1.74)	26	PBN LF - 136	1.66 MR (1.63)
12	PBN LF - 122	1.62 MR (1.61)	27	PBN LF - 137	2.08 MR (1.73)
13	PBN LF - 123	1.51 MR (1.58)	28	PBN LF - 138	2.82 S (1.93)
14	PBN LF - 124	2.47 MR (1.83)	29	PBN LF - 139	1.34 R (1.52)
15	PBN LF - 125	1.1 R (1.44)	30	Parbhani Kranti	2.08 MR (1.74)
S.E.(m)					0.114
CD 5%					NA
CV (%)					11.756

Mite (*Tetranychus urticae*) Infestation

The mite population ranged from 1.10 to 2.89 mites per 3 leaves. The minimum was in PBN LF-125 (1.10), and the maximum in PBN LF-132 (2.89). Resistant Genotypes (≤1.50 mites/3 leaves): PBN LF-114, PBN LF-125, PBN LF-133, PBN LF-139. Moderately Resistant Genotypes (1.51-2.50): PBN LF-111, PBN LF-112, PBN LF-113, PBN LF-115, PBN LF-116, PBN LF-117, PBN LF-118, PBN LF-119, PBN LF-120, PBN LF-121, PBN LF-122, PBN LF-123, PBN LF-124, PBN LF-126, PBN LF-127, PBN LF-128, PBN LF-130, PBN LF-131, PBN LF-134, PBN LF-135, PBN LF-136, PBN LF-137, Parbhani Kranti. Susceptible Genotypes (>2.50 mites/3 leaves): PBN LF-132, PBN LF-138

These results indicate that a majority of the genotypes were moderately resistant to mite infestation. The infestation range supports the categorization and helps identify genotypes for further evaluation in breeding programs.

Table 7: Screening of okra genotypes against *Earias vittella (Kharif* 2024-25)

Sr. No	Genotypes	*Earias vittella* % fruit infestation	Sr. no	Genotypes	*Earias vittella* % fruit infestation
1	PBN LF - 111	10.89 S (19.24)	16	PBN LF - 126	11.64 MR (19.91)
2	PBN LF - 112	11.35 S (19.60)	17	PBN LF - 127	10.57 S (18.96)
3	PBN LF - 113	10.2 S (18.59)	18	PBN LF - 128	5.95 MR (14.11)
4	PBN LF - 114	10.74 S -19.08	19	PBN LF - 129	11.25 MR (19.58)
5	PBN LF - 115	10.28 S (18.69)	20	PBN LF - 130	11.9 S (20.02)
6	PBN LF - 116	11.27 S (19.58)	21	PBN LF - 131	8.01 S (16.42)
7	PBN LF - 117	6.37 MR (14.61)	22	PBN LF - 132	10.19 S (18.59)
8	PBN LF - 118	12.81 HS (20.89)	23	PBN LF - 133	8.49 S (16.91)
9	PBN LF - 119	11.89 HS (20.02)	24	PBN LF - 134	9.34 S (17.78)
10	PBN LF - 120	11.52 S (19.82)	25	PBN LF - 135	8.19 S (16.61)
11	PBN LF - 121	10.24 S (18.63)	26	PBN LF - 136	9.72 S (18.13)
12	PBN LF - 122	11.25 S (19.58)	27	PBN LF - 137	8.47 S (16.91)
13	PBN LF - 123	11.07S (19.34)	28	PBN LF - 138	7.58 S (15.97)
14	PBN LF - 124	11.12 S (19.43)	29	PBN LF - 139	8.35 S (16.79)
15	PBN LF - 125	5.77 S (13.89)	30	Parbhani Kranti	9.78 S (18.21)
S.E.(m)					0.728
CD 5%					2.066
CV (%)					6.928

***Earias vittella* (Fruit and shoot borer) infestation**

The percent fruit infestation due to *Earias vittella* ranged from 5.77% to 12.81%. PBN LF-125 had the lowest infestation (5.77%), and PBN LF-118 had the highest (12.81%). Moderately Resistant Genotypes (5.1-10.0% infestation): PBN LF-125, PBN LF-128. Susceptible Genotypes (10.1-15.0%): PBN LF-111, PBN LF-112, PBN LF-113, PBN LF-114, PBN LF-115, PBN LF-116, PBN LF-

117, PBN LF-120, PBN LF-121, PBN LF-122, PBN LF-123, PBN LF-124, PBN LF-126, PBN LF-127, PBN LF-129, PBN LF-130, PBN LF-131, PBN LF-132, PBN LF-133, PBN LF-134, PBN LF-135, PBN LF-136, PBN LF-137, PBN LF-138, PBN LF-139, Parbhani Kranti. Highly Susceptible Genotypes (>15.0%): PBN LF-118, PBN LF-119

The infestation range of 5.77% to 12.81% shows significant genotypic variation, with most genotypes categorized as susceptible. Only two showed moderate resistance, and two were highly susceptible. These findings are in line with Sharma *et al.* (1993) [16], who reported limited resistance among cultivated okra lines.

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Author contribution statement

Jadhav V. S. Jayewar N.E and B.B.Gaikwad conceptualized and designed the study, conducted the study, analyzed the data, and authored the report under the supervision of Jayewar N.E.

Conflict of interest

No conflict of interest.

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