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Screening of different okra genotypes against Jassid, *Amrasca biguttula biguttula* (Ishida)

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Abstract
An experiment entitled 'Screening of different okra genotypes against jassid, *Amrasca biguttula biguttula* (Ishida)' were conducted on the research farm of Vegetable Improvement Scheme, Central Experiment Station, Wakawali, under DBSKKV, Dapoli during *Summer* 2019 and *Summer* 2020. Fifteen genotypes of okra, namely, Arka Abhay, HRB-108-4, PB-226, Hariya- 351, Veldhe Local, Parbhani Kranti, Okra Local, Kashi Pragati, Phule Utkrasha, Evergreen, Arka Anamika, Pusa Sawani, Varsha Uphar, Bantiware Local and Phule Vimukta were screened for their relative susceptibility against jassid, *A. biguttula biguttula* (Ishida). Among these, two genotypes *viz*., Arka Anamika and Arka Abhay were found least susceptible (<4.16 jassid/ 3 leaves) while, three genotypes *viz*., Okra local, Pusa Sawani and Bantiware Local were found highly susceptible (>9.46 jassid/ 3 leaves) and remaining all genotypes were found moderately susceptible to the jassid population.

Keywords: Screening, jassid, okra genotypes

Introduction
Okra (*Abelmoschus esculentus* (L.) Moench) is a commercial vegetable crop belonging to the Malvaceae family, also known as lady's finger due to its shape in many English-speaking countries and bhindi in India. India ranks first in area and production in the world. In India, it was cultivated on an area of 509.0 thousand hectare with an annual production of 6094.9 thousand metric tons and productivity of 12 metric tons per hectare during 2017-18 (Anonymous, 2018) [2]. During the *Summer* season, it fetches a lucrative price due to shortage of other vegetables in the market. It has good nutritional value particularly high content of calcium and vitamin C (Anitha and Nandihalli, 2008) [1]. Incidence of insect pests is one of the limiting factors in production of okra. According to Rawat and Sahu (1973) [7], okra crop is ravaged by as many as 45 species of insect-pests throughout its growth period. Among these, major sucking pests such as cotton jassid, *Amrasca biguttula biguttula* (Ishida), aphid, *Aphis gossypii* (Glover) and whitefly, *Bemisia tabaci* (Gennadius) are quite serious and major restraining factors in okra cultivation. Krishnaiah (1980) [3] reported that losses in okra due to leaf hopper, *A. biguttula biguttula* (Ishida) were 50-56 per cent. In order to prevent the infestation of the pests and to produce a quality crop, it is essential to manage the pest population with suitable measures. The use of resistant varieties is one of the most economical and effective methods of control. Hence, the investigation was undertaken to study the screening of different okra genotypes against jassid, *A. biguttula biguttula* (Ishida).

Material and Methods
Separate six raised bed 1 m X 27 m (27sq.m.) size were prepared at research farm of Central Experiment Station, Wakawali for conducting the experiment during two consecutive *Summer* season *viz*., 2019 and 2020. The crop was grown in a simple Randomized Block Design (RBD) with fifteen genotypes as treatments, each replicated thrice. The seeds of different okra genotypes were sown by adopting 45 cm X 30 cm spacing into a plot size 1 m X 3 m separately. No insecticidal treatments were applied at any stage of the crop growth. All recommended agronomic and cultural practices were followed to raise a good crop. The number of nymphs and adults of jassid were recorded during early morning from three leaves each one from top, middle and bottom at weekly intervals by observing randomly selected ten plants. The observations recorded on populations of were transformed into $\sqrt{X+1}$ values and subjected to analysis of variance by using OPSTAT software. On the basis of critical difference between mean populations, susceptibility to these insect pests was determined.

The genotypes of okra were categorized on the basis of mean population of insect pests recorded during the crop season using following formula: $X \pm \sigma$

Where
$\overline{X}$ = Average of mean population
σ = Standard deviation of mean population
The categories were made as (i) least susceptible, (ii) moderately susceptible, and (iii) highly susceptible. (Yadav, 2015) [8]

Results and Discussion

The data on screening of different okra genotypes against jassid population during *Summer* 2019, *Summer* 2020 and pooled are presented in Table 1, 2 and 3 and depicted in Fig. 1, 2 and 3.

Table 1: Relative susceptibility of different okra genotypes against jassid, *Amrasca biguttula biguttula* (Ishida) during *summer* 2019

S. No.	Genotypes	Mean population/three leaves/plant												Mean
		9 SMW	10 SMW	11 SMW	12 SMW	13 SMW	14 SMW	15 SMW**	16 SMW	17 SMW	18 SMW	19 SMW	20 SMW	
1	Arka Abhay	0.13 (1.06)*	0.53 (1.22)	1.20 (1.45)	2.00 (1.72)	3.80 (2.18)	6.53 (2.72)	9.27 (3.14)	7.27 (2.82)	5.67 (2.54)	4.87 (2.34)	2.80 (1.94)	1.00 (1.39)	3.76 (2.16)
2	HRB-108-4	0.40 (1.17)	1.00 (1.40)	1.67 (1.62)	2.53 (1.87)	5.20 (2.47)	8.87 (3.12)	13.40 (3.78)	10.20 (3.34)	6.60 (2.70)	5.20 (2.46)	3.27 (2.03)	1.47 (1.56)	4.98 (2.44)
3	PB-226	0.33 (1.15)	0.60 (1.25)	1.33 (1.49)	2.00 (1.72)	4.40 (2.13)	8.20 (3.01)	11.33 (3.50)	7.87 (2.94)	5.93 (2.59)	4.93 (2.41)	3.13 (1.99)	1.13 (1.45)	4.27 (2.28)
4	Hariya- 351	0.80 (1.32)	1.33 (1.25)	2.07 (1.73)	3.20 (2.04)	5.87 (2.61)	10.53 (3.35)	14.73 (3.96)	11.33 (3.48)	8.73 (3.10)	5.87 (2.61)	4.33 (2.30)	2.40 (1.84)	5.93 (2.62)
5	Veldhe Local	0.93 (1.36)	1.40 (1.54)	2.33 (1.80)	3.27 (2.04)	6.07 (2.65)	11.80 (3.54)	17.40 (4.26)	12.67 (3.66)	10.40 (3.36)	6.33 (2.70)	4.73 (2.38)	2.67 (1.91)	6.67 (2.75)
6	Parbhani Kranti	1.67 (1.62)	3.20 (2.04)	4.80 (2.40)	6.40 (2.71)	9.93 (3.30)	14.87 (3.98)	19.93 (4.57)	16.27 (4.15)	11.67 (3.55)	7.40 (2.87)	5.87 (2.57)	3.13 (2.02)	8.76 (3.12)
7	Okra Local	1.73 (1.63)	3.33 (2.07)	5.13 (2.47)	6.87 (2.79)	10.47 (3.38)	15.27 (4.03)	19.93 (4.55)	16.80 (4.21)	12.87 (3.70)	8.80 (3.10)	6.00 (2.64)	3.60 (2.13)	9.23 (3.19)
8	Kashi Pragati	0.67 (1.27)	0.93 (1.38)	1.60 (1.60)	2.87 (1.96)	5.13 (2.47)	9.33 (3.19)	14.27 (3.90)	10.13 (3.30)	6.93 (2.80)	5.20 (2.48)	3.67 (2.15)	1.73 (1.62)	5.21 (2.48)
9	Phule Utkrasha	0.47 (1.19)	0.93 (1.35)	1.40 (1.54)	2.40 (1.84)	4.73 (2.38)	8.20 (3.00)	12.73 (3.67)	9.47 (3.20)	6.67 (2.76)	4.60 (2.30)	3.13 (2.00)	1.33 (1.49)	4.67 (2.37)
10	Evergreen	0.73 (1.29)	1.07 (1.43)	1.87 (1.68)	3.00 (1.99)	5.27 (2.49)	9.53 (3.22)	14.67 (3.95)	10.33 (3.35)	7.60 (2.89)	5.60 (2.54)	3.80 (2.13)	2.07 (1.73)	5.46 (2.53)
11	Arka Anamika	0.13 (1.06)	0.60 (1.26)	1.00 (1.39)	1.93 (1.70)	3.60 (2.13)	6.40 (2.71)	8.67 (3.07)	6.53 (2.72)	5.00 (2.43)	4.33 (2.24)	2.53 (1.84)	1.07 (1.42)	3.48 (2.10)
12	Pusa Sawani	2.00 (1.71)	3.87 (2.20)	6.33 (2.70)	8.87 (3.14)	13.60 (3.81)	17.27 (4.26)	20.93 (4.67)	19.40 (4.51)	15.40 (4.03)	10.73 (3.41)	6.80 (2.77)	4.20 (2.27)	10.78 (3.43)
13	Varsha Uphar	0.93 (1.37)	1.53 (1.58)	2.47 (1.85)	4.20 (2.27)	6.87 (2.80)	13.47 (3.77)	18.80 (4.43)	15.87 (4.09)	11.33 (3.51)	7.13 (2.82)	5.73 (2.54)	3.13 (2.02)	7.62 (2.92)
14	Bantiware Local	2.40 (1.83)	4.73 (2.38)	6.80 (2.78)	10.33 (2.36)	15.20 (4.02)	18.40 (4.40)	23.53 (4.89)	21.93 (4.77)	18.13 (4.37)	12.53 (3.65)	10.60 (3.39)	4.67 (2.37)	12.44 (3.66)
15	Phule Vimukta	0.80 (1.33)	1.27 (1.47)	2.00 (1.73)	3.13 (2.02)	5.53 (2.55)	9.60 (3.25)	14.67 (3.90)	10.40 (3.37)	7.87 (2.96)	5.00 (2.42)	3.87 (2.16)	2.20 (1.77)	5.53 (2.54)
	S.Em.±	0.12	0.11	0.13	0.10	0.12	0.25	0.29	0.25	0.23	0.26	0.23	0.15	0.13
	C.D. at 5%	0.35	0.32	0.38	0.29	0.37	0.72	0.84	0.73	0.68	0.76	0.69	0.44	0.38

*Figures in the parentheses are square root transformed values **Peak population of SMW- Standard Meteorological Week

Table 2: Relative susceptibility of different okra genotypes against jassid, *Amrasca biguttula biguttula* (Ishida) during *Summer* 2020

S. No.	Genotypes	Mean population/three leaves/plant												Mean
		9 SMW	10 SMW	11 SMW	12 SMW	13 SMW	14 SMW	15 SMW**	16 SMW	17 SMW	18 SMW	19 SMW	20 SMW	
1	Arka Abhay	0.27 (1.12)*	0.73 (1.30)	1.33 (1.51)	3.07 (2.01)	4.27 (2.29)	7.87 (2.97)	10.07 (3.32)	8.73 (3.11)	6.13 (2.67)	4.80 (2.40)	3.07 (1.99)	1.13 (1.43)	4.29 (2.29)
2	HRB-108-4	0.53 (1.22)	1.20 (1.47)	1.80 (1.67)	3.40 (2.09)	6.00 (2.64)	10.33 (3.36)	14.00 (3.84)	11.27 (3.47)	7.07 (2.79)	5.27 (2.48)	3.40 (2.07)	1.60 (1.60)	5.49 (2.53)
3	PB-226	0.47 (1.19)	0.80 (1.33)	1.47 (1.56)	3.13 (2.02)	5.33 (2.50)	8.13 (3.02)	12.13 (3.59)	8.93 (3.14)	6.27 (2.64)	5.07 (2.42)	3.33 (2.04)	1.27 (1.46)	4.69 (2.38)
4	Hariya- 351	0.93 (1.36)	1.53 (1.56)	2.27 (1.80)	3.60 (2.14)	6.27 (2.67)	10.93 (3.44)	15.07 (4.00)	12.40 (3.63)	9.20 (3.17)	6.00 (2.62)	4.13 (2.25)	2.33 (1.82)	6.22 (2.68)
5	Veldhe Local	1.07 (1.42)	1.67 (1.63)	2.40 (1.84)	4.20 (2.27)	7.33 (2.88)	13.60 (3.81)	18.27 (4.38)	13.07 (3.74)	10.73 (3.40)	6.40 (2.70)	4.80 (2.35)	2.60 (1.89)	7.18 (2.85)
6	Parbhani Kranti	1.80 (1.66)	3.33 (2.07)	4.93 (2.43)	7.07 (2.83)	10.60 (3.40)	16.80 (4.21)	20.07 (4.58)	16.60 (4.18)	12.00 (3.59)	7.53 (2.89)	6.00 (2.64)	3.20 (2.03)	9.16 (3.18)
7	Okra Local	2.00 (1.72)	3.47 (2.11)	5.33 (2.51)	7.00 (2.82)	11.67 (3.55)	17.27 (4.26)	21.13 (4.69)	17.53 (4.30)	13.20 (3.74)	8.87 (3.13)	6.53 (2.73)	3.67 (2.14)	9.81 (3.28)
8	Kashi Pragati	0.93	1.20	1.67	3.07	5.93	10.73	14.87	11.20	7.27	5.47	4.07	1.93	5.69

		(1.37)	(1.45)	(1.63)	(2.00)	(2.62)	(3.42)	(3.97)	(3.49)	(2.83)	(2.49)	(2.22)	(1.70)	(2.58)
9	Phule Utkrasha	0.73 (1.29)	1.13 (1.44)	1.53 (1.58)	2.87 (1.96)	5.00 (2.44)	8.67 (3.09)	13.13 (3.75)	9.93 (3.30)	6.80 (2.77)	5.40 (2.51)	3.27 (2.03)	1.80 (1.66)	5.02 (2.45)
10	Evergreen	0.80 (1.31)	1.40 (1.53)	2.07 (1.74)	3.93 (2.21)	6.20 (2.67)	9.93 (3.27)	15.20 (4.01)	10.93 (3.44)	8.33 (3.04)	5.73 (2.53)	3.93 (2.22)	2.33 (1.82)	5.90 (2.62)
11	Arka Anamika	0.33 (1.14)	0.73 (1.31)	1.20 (1.48)	2.47 (1.85)	4.13 (2.25)	8.47 (3.07)	9.27 (3.15)	7.60 (2.91)	5.40 (2.51)	4.47 (2.31)	3.33 (2.04)	1.27 (1.48)	4.06 (2.24)
12	Pusa Sawani	2.13 (1.75)	4.00 (2.23)	6.40 (2.72)	9.20 (3.19)	14.20 (3.89)	19.00 (4.47)	21.27 (4.71)	20.13 (4.59)	16.07 (4.12)	10.80 (3.42)	7.13 (2.83)	4.33 (2.30)	11.22 (3.49)
13	Varsha Uphar	1.07 (1.40)	1.67 (1.62)	2.53 (1.87)	4.67 (2.37)	7.27 (2.87)	14.47 (3.91)	19.13 (4.48)	16.00 (4.12)	11.73 (3.56)	7.13 (2.84)	5.93 (2.61)	3.20 (2.04)	7.90 (2.98)
14	Bantiware Local	2.53 (1.87)	4.87 (2.42)	6.93 (2.81)	11.20 (3.49)	16.67 (4.20)	18.53 (4.40)	24.67 (5.06)	22.33 (4.81)	18.53 (4.41)	13.00 (3.71)	11.07 (3.46)	4.87 (2.42)	12.93 (3.73)
15	Phule Vimukta	1.00 (1.39)	1.40 (1.54)	2.27 (1.80)	4.07 (2.24)	5.80 (2.60)	10.53 (3.39)	15.93 (4.10)	10.93 (3.42)	8.07 (2.98)	5.80 (2.54)	4.13 (2.24)	2.53 (1.87)	6.04 (2.64)
	S.Em.±	0.13	0.11	0.07	0.09	0.13	0.17	0.20	0.20	0.23	0.26	0.21	0.13	0.09
	C.D. at 5%	0.38	0.32	0.21	0.28	0.38	0.51	0.60	0.60	0.69	0.76	0.63	0.40	0.27

*Figures in the parentheses are square root transformed **Peak population of jassid SMW- Standard Meteorological Week

Table 3: Relative susceptibility of different okra genotypes against jassid, *Amrasca biguttula biguttula* (Ishida) (Pooled data of *Summer* 2019 and 2020)

S. No.	Genotypes	Mean population/three leaves/plant												Mean
		9 SMW	10 SMW	11 SMW	12 SMW	13 SMW	14 SMW	15 SMW**	16 SMW	17 SMW	18 SMW	19 SMW	20 SMW	
1	Arka Abhay	0.20 (1.09)*	0.63 (1.27)	1.27 (1.48)	2.53 (1.87)	4.03 (2.24)	7.20 (2.85)	9.67 (3.25)	8.00 (2.98)	5.90 (2.61)	4.83 (2.38)	2.93 (1.96)	1.07 (1.43)	4.02 (2.23)
2	HRB-108-4	0.47 (1.20)	1.10 (1.44)	1.73 (1.65)	2.97 (1.98)	5.60 (2.56)	9.60 (3.24)	13.70 (3.82)	10.73 (3.91)	6.83 (2.75)	5.23 (2.47)	3.33 (2.05)	1.53 (1.59)	5.24 (2.49)
3	PB-226	0.40 (1.18)	0.70 (1.30)	1.40 (1.53)	2.57 (1.88)	4.87 (2.41)	8.17 (3.01)	11.73 (3.55)	8.40 (3.05)	6.10 (2.62)	5.00 (2.42)	3.23 (2.02)	1.20 (1.47)	4.48 (2.33)
4	Hariya- 351	0.87 (1.36)	1.43 (1.55)	2.17 (1.77)	3.40 (2.09)	6.07 (2.63)	10.73 (3.40)	14.90 (3.98)	11.87 (3.56)	8.97 (3.13)	5.93 (2.62)	4.23 (2.28)	2.37 (1.83)	6.08 (2.65)
5	Veldhe Local	1.00 (1.41)	1.53 (1.58)	2.37 (1.82)	3.73 (2.17)	6.70 (2.76)	12.70 (3.68)	17.83 (4.33)	12.87 (3.70)	10.57 (3.38)	6.37 (2.70)	4.77 (2.37)	2.63 (1.90)	6.92 (2.80)
6	Parbhani Kranti	1.73 (1.64)	3.27 (2.06)	4.87 (2.42)	6.73 (2.77)	10.27 (3.35)	15.83 (4.10)	20.00 (4.58)	16.43 (4.16)	11.83 (3.57)	7.47 (2.88)	5.93 (2.61)	3.17 (2.03)	8.96 (3.15)
7	Okra Local	1.87 (1.68)	3.40 (2.09)	5.23 (2.49)	6.93 (2.81)	11.07 (3.47)	16.27 (4.15)	20.53 (4.62)	17.17 (4.26)	13.03 (3.72)	8.83 (3.12)	6.27 (2.69)	3.63 (2.14)	9.52 (3.23)
8	Kashi Pragati	0.80 (1.33)	1.07 (1.42)	1.63 (1.62)	2.97 (1.98)	5.53 (2.55)	10.03 (3.31)	14.57 (3.94)	10.67 (3.40)	7.10 (2.83)	5.33 (2.49)	3.87 (2.19)	1.83 (1.68)	5.45 (2.53)
9	Phule Utkrasha	0.60 (1.26)	1.03 (1.41)	1.47 (1.56)	2.63 (1.90)	4.87 (2.41)	8.43 (3.05)	12.93 (3.72)	9.70 (3.25)	6.73 (2.77)	5.00 (2.42)	3.20 (2.01)	1.57 (1.59)	4.85 (2.41)
10	Evergreen	0.77 (1.32)	1.23 (1.48)	1.97 (1.71)	3.47 (2.11)	5.73 (2.59)	9.73 (3.25)	14.93 (3.98)	10.63 (3.40)	7.97 (2.98)	5.67 (2.54)	3.87 (2.19)	2.20 (1.78)	5.68 (2.58)
11	Arka Anamika	0.23 (1.10)	0.67 (1.29)	1.10 (1.44)	2.20 (1.78)	3.87 (2.20)	7.43 (2.90)	8.97 (3.11)	7.07 (2.82)	5.20 (2.47)	4.40 (2.28)	2.93 (1.95)	1.17 (1.45)	3.77 (2.17)
12	Pusa Sawani	2.07 (1.74)	3.93 (2.21)	6.37 (2.71)	9.03 (3.16)	13.90 (3.85)	18.13 (4.37)	21.10 (4.70)	19.77 (4.55)	15.73 (4.08)	10.77 (3.41)	6.97 (2.80)	4.27 (2.28)	11.00 (3.46)
13	Varsha Uphar	1.00 (1.40)	1.60 (1.61)	2.50 (1.86)	4.43 (2.32)	7.07 (2.84)	13.97 (3.84)	18.97 (4.46)	15.93 (4.10)	11.53 (3.53)	7.13 (2.83)	5.83 (3.57)	3.17 (2.04)	7.76 (2.95)
14	Bantiware Local	2.47 (1.85)	4.80 (2.40)	6.87 (2.79)	10.77 (3.42)	15.93 (4.11)	18.47 (4.40)	24.10 (4.99)	22.13 (4.79)	18.33 (4.39)	12.77 (3.68)	10.83 (3.43)	4.77 (2.40)	12.69 (3.69)
15	Phule Vimukta	0.90 (1.36)	1.33 (1.51)	2.13 (1.76)	3.60 (2.14)	5.67 (2.57)	10.07 (3.32)	15.30 (4.01)	10.67 (3.40)	7.97 (2.97)	5.40 (2.48)	4.00 (2.21)	2.37 (1.82)	5.78 (2.59)
	S.Em.±	0.06	0.07	0.08	0.08	0.09	0.19	0.20	0.20	0.21	0.24	0.21	0.10	0.10
	C.D. at 5%	0.19	0.22	0.24	0.23	0.26	0.56	0.58	0.59	0.63	0.71	0.61	0.30	0.31

*Figures in the parentheses are square root transformed values **Peak population of SMW- Standard Meteorological Week

***Summer* 2019**

The first observation of the jassid population was recorded in 9th SMW (Table 1). Initially, the mean jassid population was low on all the genotypes ranging from 0.13 to 2.40 per three leaves. The population of jassid per three leaves increased gradually and reached its peak in the 15th SMW (8.67 to 23.53). The mean jassid population of all intervals ranged from 3.48 to 12.44 per three leaves on all the genotypes. The minimum population of jassid per three leaves was observed on genotype Arka Anamika (3.48) followed by Arka Abhay (3.76), PB-226 (4.27), Phule Utkarsha (4.67), HRB-108-4 (4.98/) and Kashi Pragati (5.21) and all these genotypes were observed statistically at par with each other. The maximum population of jassid per three leaves was recorded on genotype Bantiware Local (12.44) and which was found statistically at par with Pusa Sawani (10.78). The genotypes in ascending order of jassid population were Arka Anamika, Arka Abhay, PB-226, Phule Utkarsha, HRB-108-4, Kashi

Pragati, Evergreen, Phule Vimukta, Hariya-351, Veldhe Local, Varsha Uphar, Parbhani Kranti, Okra local, Pusa Sawani and Bantiware Local.

***Summer* 2020**

The data (Table 2) indicated that all the genotypes in the present study were found more or less infested by jassids and the first incidence was noticed in the 9th SMW. The mean jassid population ranged from 0.27 to 2.53 per three leaves on all the genotypes. Afterwards, the population of jassid per three leaves increased gradually and attained its peak in the 15th SMW (9.27 to 24.67). Based on the mean of all observations, the jassid population ranged from 4.06 to 12.93 per three leaves on all the genotypes. The minimum population of jassid per three leaves was observed on Arka Anamika (4.06) followed by Arka Abhay (4.29), PB-226 (4.69) and Phule Utkarsha (5.02) and all these genotypes were found statistically at par with each other. The maximum population of jassid per three leaves was recorded on genotype Bantiware Local (12.93) and which was found statistically at par with Pusa Sawani (11.22). The genotypes in ascending order of jassid population were Arka Anamika, Arka Abhay, PB-226, Phule Utkarsha, HRB-108-4, Kashi Pragati, Evergreen, Phule Vimukta, Hariya-351, Veldhe Local, Varsha Uphar, Parbhani Kranti, Okra local, Pusa Sawani and Bantiware Local.

Pooled data (*Summer* 2019 and 2020)

The pooled analysis of data (Table 3) revealed that in 9th SMW mean jassid population ranged from 0.20 to 2.47 per three leaves on all the genotypes. The population of jassid per three leaves increased gradually and reached its peak in the 15th SMW (8.97 to 24.10). The mean jassid population of all intervals ranged from 3.77 to 12.69 per three leaves on all the genotypes. The minimum population of jassid per three leaves was observed on genotype Arka Anamika (3.77) followed by Arka Abhay (4.02), PB-226 (4.48) and Phule Utkarsha (4.85) and all these genotypes were observed statistically at par with each other. The maximum population of jassid per three leaves was recorded on genotype Bantiware Local (12.69) and which was found statistically at par with Pusa Sawani (11.00). The genotypes in ascending order of jassids population were Arka Anamika, Arka Abhay, PB-226, Phule Utkarsha, HRB-108-4, Kashi Pragati, Evergreen, Phule Vimukta, Hariya-351, Veldhe Local, Varsha Uphar, Parbhani Kranti, Okra local, Pusa Sawani and Bantiware Local. For the sake of convenience in interpreting the results, pooled data of mean jassid population (all intervals) of different okra genotypes were categorized into different categories *viz.*, least susceptible, moderately susceptible and highly susceptible. Categorization of genotypes was done on the basis of the statistical formula, $X \pm \sigma$, the average mean ($X = 6.81$) and standard deviation ($\sigma = 2.65$) as given in Table 4.

Table 4: Categorization of susceptibility of different okra genotypes against jassid (Pooled data of *Summer* 2019 and 2020)

S. No.	Jassid population per three leaves	Category	Name of okra genotypes
1	Below 4.16	Least susceptible	Arka Anamika, Arka Abhay
2	4.16 to 9.46	Moderately susceptible	PB-226, Phule Utkarsha, HRB-108-4, Kashi Pragati, Evergreen, Phule Vimukta, Hariya-351, Veldhe Local, Varsha Uphar, Parbhani Kranti,
3	Above 9.46	Highly susceptible	Okra local, Pusa Sawani and Bantiware Local

Average of pooled mean ($\overline{X}$) = 6.81 Standard deviation (σ) = 2.65

The above findings are in confirmation with the earlier research workers like Patel *et al*. (2012) [4] who revealed that Arka Anamika supported minimum jassid population (2.03 jassids/leaf), which was at par with GO-2 (2.05 jassids/leaf) and AOL-03-1 (2.07 jassids/leaf) cultivars, while the maximum jassid population (4.71 jassids/leaf) was observed in Parbhani Kranti, which was at par with Pusa Sawani (4.23 jassids/leaf). Pawar and Varma (2014) [5] tested seven okra varieties, among them least leafhopper population was recorded in variety (Gujarat Okra-2) 5.90 leaf hopper per three leaves and which was at par with variety (Arka Anamika). Priyanka *et al*., (2020) [6] reported that among the ten varieties variety IIVR-11 and VRO-4 were categorized as least susceptible (<5.18 leaf hoppers/ three leaves), Pusa Makhmali, Arka Abhay, VRO-5, VRO-6, Arka Anamika, and Pusa-A-GR as moderately susceptible (5.18 to 9.98 leaf hoppers/ three leaves), whereas, Kashi Satdhari and Parbhani Kranti is highly susceptible (>9.98 leaf hoppers/ three leaves) against leafhopper.

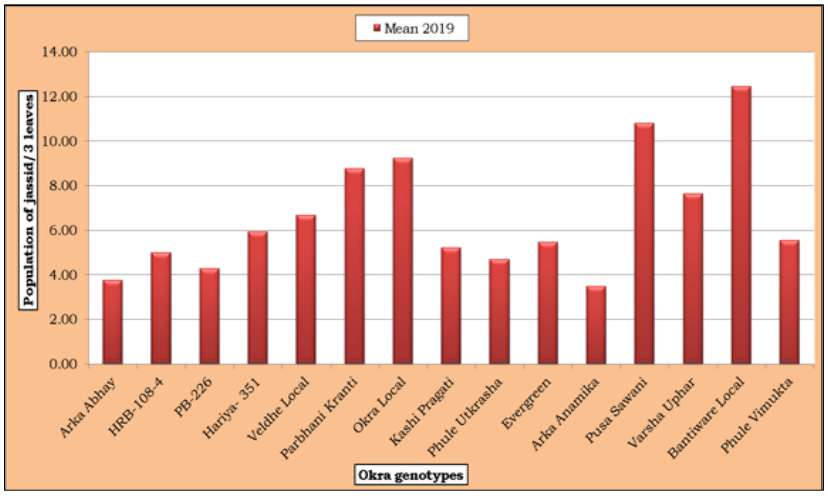

Fig 1: Relative susceptibility of different okra genotypes against jassids during *Summer* 2019

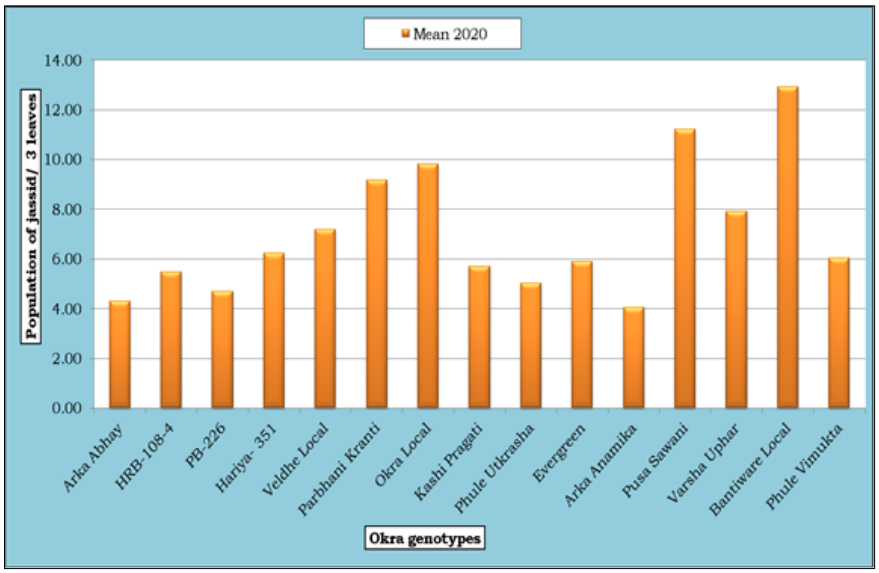

Fig 2: Relative susceptibility of different okra genotypes against jassids during *Summer* 2020

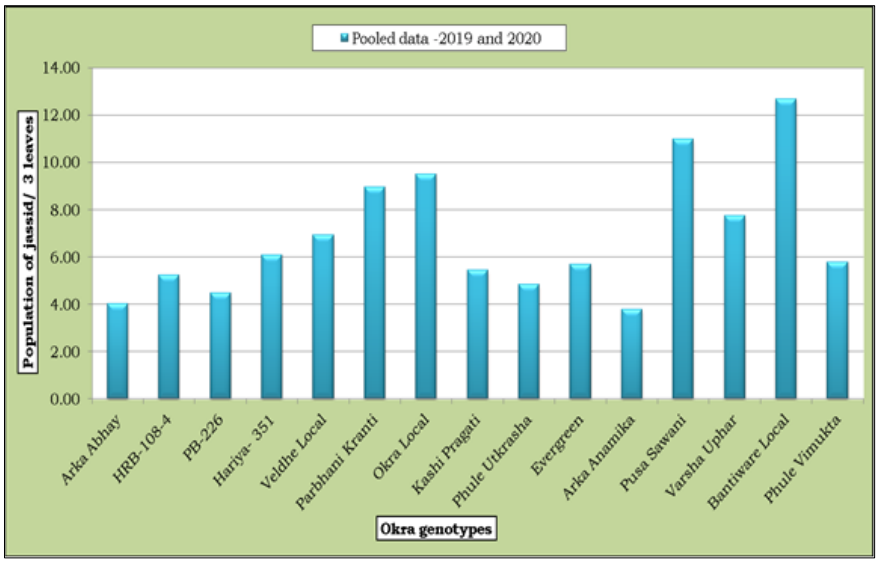

Fig 3: Relative susceptibility of different okra genotypes against jassids (Pooled data of *Summer* 2019 and 2020)

Conclusion

The overall results of the present study revealed that, out of the fifteen genotypes, two genotypes *viz*., Arka Anamika and Arka Abhay were found least susceptible (<4.16 jassid/ 3 leaves) while, three genotypes *viz*., Okra local, Pusa Sawani and Bantiware Local were found highly susceptible (>9.46 jassid/ 3 leaves) and remaining all genotypes were found moderately susceptible to the jassid population.

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