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To screen the chilli varieties against major insect pests infesting chilli crop during *Kharif* 2019-20 season

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Abstract
Ten chilli varieties from different regions were screened for their relative degree of tolerance and susceptibility against major insect pests of chilli. The experiment was carried out at CCS HAU KVK, Bawal during the 2019-20 *Kharif* season. It is concluded from the study that among the ten varieties screened against major insect pests of chilli, only one variety Arka Khyati was categorized as resistant while, three were categorized as moderately resistant and four varieties were categorized as susceptible varieties. Varieties, Pusa Sadabahar and Pusa Jwala showed the highest degree of leaf curling index was categorized as highly susceptible varieties.

Keywords: chilli, screening, varieties

Introduction
Chilli (*Capsicum annuum* L.) is one of the most important commercial vegetable crop grown for the value of its fruits, which are used in green as well as ripe dried form for its pungency in India. It is cultivated under tropical and sub-tropical climates of India. It is believed that the chilli plant was introduced in India by the Portuguese about the middle of 17th century. Besides traditional use of chilli as vegetables, condiments, spices, pickles and sauces it is also being used in pharmaceuticals, beverages and cosmetics (Tiwary *et al.*, 2005) [19]. The chilli plants are highly sensitive to excessive rainfall, water logging and frost conditions, while, well drained loamy soil rich in organic matter is the ideal condition for its cultivation. In World, India ranks first in the chilli production followed by China, Thailand, Ethiopia and Indonesia. Indian chilli is considered to be world famous for two important commercial qualities i.e. pungency level and colour. Indian chilli is mainly exported to Asian countries like Thailand, UAE, China, Sri Lanka, Singapore, Malaysia, Bangladesh, etc. In India, chilli occupies an area of 7.03 lakh ha with annual production of 17.52 lakh tones and productivity of 2493 kg per ha, whereas in Haryana it occupies an area of 2.21 lakh ha with the production of 4.03 lakh tones and productivity of 1825 kg per ha (Anonymous, 2020) [1].

Even though chilli has superior export potentialities in addition to national demand, it contributes to its low productivity through multiple limiting factors such as several insect pests and diseases (Hanumanthappa *et al*., 2018) [3]. Insect pests continue to pose a major threat for achieving higher production of chilli crops and it has been reported to attack by more than 293 insects and non-insect pests species are in worldwide and arthropod pests caused an overall reduction in yield losses to range between 50 to 90 per cent (Rajput *et al*., 2017) [12]. Among the insect and non-insect pests that attack chilli at different crop growth stages, the important sucking pests contributing to decrease in the crop yield are mites (*Polyphagotarsonemus latus* Banks), whiteflies (*Bemesia tabaci* Genn.), thrips (*Scirtothrips dorsalis* Hood) and aphids (*Myzus persicae* Sulzer and *Aphis gossypii* Glover). In chilli, the yield loss caused by mites attack were up to 34 per cent (Rai *et al*., 2014) [13] and losses due to attack by thrips reported to ranges from 50 to 90 per cent and fruit borers to an extent of 90 per cent (Reddy and Reddy, 1999) [15]. "Leaf curl or *Churda murda*" is one of the most severe diseases in chilli growing regions in India. Murda disease is caused by mites, thrips and virus. Pest management involves several divergent measures like chemicals, botanicals, use of resistant cultivars, use of bio-control agents, etc. to minimize the losses due to insect pests. Insect resistant varieties as an important component of integrated pest management suits well in the management of insect pests of chilli. All the crop genotypes are attacked by insect pests, but the degree of damage as well as the number of pest species attacking different crop species vary considerably. Adoption of resistant variety is the most practical and valuable tool for minimizing pest attack, as it is compatible with other methods of pest control.

Materials and Methods

The experiment was laid out during 2019-20 *Kharif* seasons at Regional Research Station, Bawal to study the varietal screening against pest infesting chilli. Ten chilli varieties were collected from different sources and raised separately in nursery for one month and then transplanted following randomized block design in the main field, with a spacing of 60cm x 45cm. Each variety was transplanted in a plot size of 3m x 3m with five rows in three replications. All the recommended package of practices were followed except plant protection measures.

Five plants were randomly selected from each plot for recording the observations on insect pests infesting chilli. The observations on sucking pests *viz.*, aphids, mites, whiteflies and thrips were recorded using 10x magnifying hand lens from three leaves per plant one each from the top, middle and bottom leaves and average population was calculated. Chilli plants showing symptoms of curling was scored individually on 0 to 4 scale (Niles, 1980) [8] on five randomly selected plants at fifteen days intervals at 45, 60, 75 and 90 days after transplantation (DAT) of the main crop and pooled to compute the overall mean scoring for each entry. The per cent leaf curl index (PLI) was calculated as described by Hosamani (2007) [4].

. Chilli plants showing symptoms of curling was scored individually on 0 to 4 scale

Damage score	Extent of damage
0	Healthy plant
1	1 – 25 per cent of the leaves in plant showing curling
2	26 – 50 per cent of the leaves in plant showing curling moderately damaged.
3	51 – 75 per cent of the leaves in a plant showing curling, heavily damaged, malformation of growing points, reduction in plant height.
4	> 75 per cent of leaves showing curling, severe to complete destruction of growing points, drastic reduction of plant height, defoliations and severe malformation.

$$PLI = \frac{\text{Sum of scores of all plants}}{\text{Total no. of plants x No. of score category}} \times 100$$

The resistance reactions of chilli genotypes were classified into four categories based on the PLI value, where, 0-10 = resistant; 11-25 = moderately resistant; 26-50 = susceptible and 51-100 = highly susceptible.

Assessment of larval population of *H. armigera* and fruit damage

The observations on larval population of chilli fruit borer, *H. armigera* was recorded from five randomly selected plants from each variety at 70, 85, 100 and 115 DAT. The per cent fruit damage was worked out by counting total number of fruits per plant and number of damaged fruits per plant on five randomly selected plants in each treatment at every picking by adapting following formula:

$$\text{Per cent fruit damage} = \frac{\text{Number of fruits damaged}}{\text{Total number of fruits}} X100$$

Results and Discussion

Varietal screening of chilli against thrips

Infestation of thrips was observed in all the varieties of chilli. Data on mean population of thrips recorded highest mean population i.e. 17.57 thrips per three leaves per plant in variety Pusa Jwala. The next cultivars in descending order of mean population were Pusa Sadabahar (16.45), RCH-1 (15.36), Mathania Long (13.99), Arka Sweta (13.09), Arka Meghna (11.66), Mathania Local (9.92), Arka Lohit (9.17) and Arka Sheepal (8.11). The lowest mean population of thrips was recorded in variety Arka Khyati (7.18 thrips/3leaves/plant) showed in Table 1. Singh *et al.* (1998) [18] screened seven chilli varieties and found that varieties *viz.*, Jawahar Mirch-2, Pant C1 and Pusa Sadabahar were found to be promising with least infestation by *S. dorsalis* population. Similar findings were reported by Samota *et al.* (2018) [16] who observed that out of ten genotypes of chilli, three genotypes viz., Alakhpura Selection, Mathania Local and Pant C-1 were found to be least susceptible and five genotypes viz., RCH-1, Moti Hira-31, Dhan Laxmi-21, Selection-5 and MY Selection-71 were categorized as moderately susceptible. Genotypes PS-64 and Pusa Jawala were found to be highly susceptible against sucking pests of chilli.

Table 1: Mean population of thrips, *Scirtothrips dorsalis* on different chilli varieties in 2019-20 *Kharif* season

Sr. No.	Varieties	Mean number of thrips/ three leaves/ plant				Mean
		45 DAT	60 DAT	75 DAT	90 DAT	
1.	RCH-1	16.24 (4.15)	19.49 (4.52)	13.42 (3.79)	12.30 (3.64)	15.36 (4.03)
2.	Mathania Local	10.48 (3.39)	13.54 (3.81)	8.34 (3.05)	7.33 (2.88)	9.92 (3.28)
3.	Mathania Long	15.54 (4.06)	18.38 (4.40)	11.57 (3.54)	10.48 (3.38)	13.99 (3.85)
4.	Pusa Sadabahar	17.39 (4.29)	20.54 (4.64)	14.52 (3.94)	13.37 (3.79)	16.45 (4.16)
5.	Arka Sweta	15.16 (4.02)	17.66 (4.32)	11.17 (3.49)	8.36 (3.06)	13.09 (3.72)
6.	Arka Khyati	7.38 (2.89)	10.58 (3.40)	6.45 (2.72)	4.29 (2.29)	7.18 (2.83)
7.	Arka Sheepal	8.29 (3.04)	11.54 (3.54)	7.32 (2.88)	5.31 (2.51)	8.11 (2.99)
8.	Arka Lohit	9.44 (3.23)	12.47 (3.67)	8.42 (3.07)	6.34 (2.70)	9.17 (3.17)
9.	Arka Meghna	12.51 (3.67)	15.05 (4.00)	10.67 (3.41)	8.43 (3.07)	11.66 (3.54)
10.	Pusa Jwala	18.33 (4.39)	21.38 (4.73)	16.58 (4.19)	13.99 (3.86)	17.57 (4.29)
	CD (P= 0.05)	0.26	0.20	0.27	0.35	0.26
	SE (m)	0.09	0.07	0.09	0.12	0.09

*Figures in the parenthesis are square root transformed values

Varietal screening of chilli against aphids

Minimum infestation of aphid was found in variety Arka Khyati 2.68, 4.32, 8.50 and 10.72 aphids per plant at 45, 60, 75 and 90 DAT, respectively followed by in ascending order Arka Sheepal (3.65, 7.43, 12.50 & 15.55), Arka Lohit (8.29, 10.42, 14.38 & 20.63), Mathania Local (9.23, 13.53, 22.37 & 27.32), Arka Meghna (14.36, 18.47, 27.57 & 32.52), Arka Sweta (17.49, 23.29, 32.49 & 38.57), Mathania Long (22.28, 28.52, 36.46 & 45.53), RCH-1 (28.40, 32.44, 40.70 & 48.45), Pusa Sadabahar (30.73, 34.35, 42.28 & 50.60) and maximum aphid infestation was recordedd in variety Pusa Jwala (32.23, 38.34, 45.34 & 52.56) showed in Table 2. Rao *et al.* (1984) observed that the varieties X 180, X 203 and X 197 were found to be least susceptible against infestation of *A. gossypii.* Priyadarshini *et al.* (2019) observed that Bhangar variety was found tolerant, whereas Suryamukhi was recorded as susceptible against aphid infestation.

Table 2: Mean population of Aphid, *Aphis gossypii* on different chilli varieties in 2019-20 *Kharif* season

Sr. No.	Varieties	Mean number of aphids/ three leaves/ plant				Mean
		45 DAT	60 DAT	75 DAT	90 DAT	
1.	RCH-1	28.40 (5.42)	32.44 (5.78)	40.70 (6.46)	48.45 (7.03)	37.50 (6.17)
2.	Mathania Local	9.23 (3.20)	13.53 (3.81)	22.37 (4.83)	27.32 (5.32)	18.11 (4.29)
3.	Mathania Long	22.28 (4.82)	28.52 (5.43)	36.46 (6.12)	45.53 (6.82)	33.20 (5.80)
4.	Pusa Sadabahar	30.73 (5.63)	34.35 (5.94)	42.28 (6.58)	50.60 (7.18)	39.49 (6.33)
5.	Arka Sweta	17.49 (4.30)	23.29 (4.93)	32.49 (5.79)	38.57 (6.29)	27.96 (5.33)
6.	Arka Khyati	2.68 (1.90)	4.32 (2.30)	8.50 (3.08)	10.72 (3.42)	6.55 (2.68)
7.	Arka Sheepal	3.65 (2.15)	7.43 (2.90)	12.50 (3.67)	15.55 (4.07)	9.78 (3.20)
8.	Arka Lohit	8.29 (3.03)	10.42 (3.38)	14.38 (3.92)	20.63 (4.65)	13.43 (3.74)
9.	Arka Meghna	14.36 (3.92)	18.47 (4.41)	27.57 (5.34)	32.52 (5.79)	23.23 (4.87)
10.	Pusa Jwala	32.23 (5.76)	38.34 (6.27)	45.34 (6.81)	52.56 (7.32)	42.12 (6.54)
	CD (P= 0.05)	0.33	0.19	0.19	0.15	0.21
	SE (m)	0.11	0.06	0.06	0.05	0.07

*Figures in the parenthesis are square root transformed values

Varietal screening of chilli against whitefly

Mean population of whitefly was in the range of 1.01 to 4.88 per three leaves per plant among different varieties. The highest mean population (4.88) was observed in Pusa Jwala variety. The next cultivars in descending order of mean population of whitefly were Pusa Sadabahar (4.23), RCH-1 (3.78), Mathania Long (3.42), Arka Sweta (3.07), Arka Meghna (2.78), Mathania Local (2.21), Arka Lohit (1.91) and Arka Sheepal (1.55).The lowest mean population of whitefly was recorded in variety Arka Khyati (1.01) as depicted in Table 3. Priyadarshini *et al.* (2019) [11] reported that Suryamukhi (1.32 whitefly/3 leaves) variety was found tolerant and Akashi (1.99 whitefly/3 leaves) was recorded as the susceptible one against whitefly infestation.

Table 3: Mean population of Whitefly, *Bemisia tabaci* on different chilli varieties in 2019-20 *Kharif* season

Sr. No.	Varieties	Mean number of whitefly/ three leaves/ plant				Mean
		45 DAT	60 DAT	75 DAT	90 DAT	
1.	RCH-1	3.74 (2.17)	3.06 (2.02)	5.45 (2.53)	2.87 (1.97)	3.78 (2.17)
2.	Mathania Local	2.36 (1.83)	1.90 (1.70)	3.48 (2.11)	1.10 (1.45)	2.21 (1.77)
3.	Mathania Long	3.26 (2.06)	2.95 (1.99)	4.91 (3.43)	2.55 (1.88)	3.42 (2.09)
4.	Pusa Sadabahar	4.22 (2.27)	3.66 (2.16)	5.89 (2.62)	3.14 (2.03)	4.23 (2.27)
5.	Arka Sweta	3.09 (2.02)	2.77 (1.94)	4.38 (2.31)	2.04 (1.74)	3.07 (2.00)
6.	Arka Khyati	1.03 (1.42)	0.47 (1.21)	2.37 (1.82)	0.17 (1.08)	1.01 (1.38)
7.	Arka Sheepal	1.87 (1.69)	0.97 (1.40)	2.86 (1.95)	0.49 (1.22)	1.55 (1.57)
8.	Arka Lohit	2.18 (1.78)	1.26 (1.50)	3.27 (2.06)	0.94 (1.39)	1.91 (1.68)
9.	Arka Meghna	2.96 (1.99)	2.22 (1.79)	4.09 (2.25)	1.83 (1.68)	2.78 (1.93)
10.	Pusa Jwala	5.23 (2.50)	4.04 (2.24)	6.50 (2.74)	3.75 (2.18)	4.88 (2.41)
	CD (P= 0.05)	0.20	0.11	0.34	0.04	0.17
	SE (m)	0.07	0.04	0.11	0.01	0.06

*Figures in the parenthesis are square root transformed values

Varietal screening of chilli against mites

Data on mean population of mites during year 2019-20 indicated that highest mean population (9.99 mites/3leaves/plant) was observed in variety Pusa Jwala. The next varieties in descending order of mean population of mites were Pusa Sadabahar (9.39), RCH-1 (8.77), Mathania Long (8.08), Arka Sweta (6.75), Arka Meghna (5.66), Mathania Local (5.58), Arka Lohit (4.60) and Arka Sheepal (3.89).The lowest mean population of mites was recorded in Arka Khyati (2.94). The lowest (1.59) mean population of mites was observed in Arka Khyati. Desai *et al.* (2006) [2] observed that out of twenty one varieties screened against yellow mite, the varieties ACG-77, RHRC Erect and Jwala were found to be promising whereas PBS 86-1 and G-4 were highly susceptible against mite infestation. Kaur *et al.* (2010) screened sixty chilli accessions against yellow mite and found that the genotypes, *viz.*, Kashmir Long-1, EC 532397, SH-HP-404, Sel. 1-1-A, SCM-334 and JCA- 283 were found to be highly susceptible (3.1-4.0) against mite infestation. Almost similar findings were observed by Kulkarni *et al.* (2011) [6] who reported that out of eighty genotypes screened against *S. dorsalis* and *H. latus*, Pant C-1, DCA-40, DCA- 11, DCA-7, Arka Lohit and IC 324894 were found to be promising genotypes to both mites and thrips.

Table 4: Mean population of Mite, *Polyphagotarsonemus latus* on different chilli varieties in 2019-20 *Kharif* season

Sr. No.	Varieties	Mean number of mites/ three leaves/ plant				Mean
		45 DAT	60 DAT	75 DAT	90 DAT	
1.	RCH-1	10.82 (3.44)	8.69 (3.11)	9.35 (3.21)	6.24 (2.69)	8.77 (3.11)
2.	Mathania Local	7.70 (2.95)	5.44 (2.53)	5.56 (2.56)	3.63 (2.14)	5.58 (2.54)
3.	Mathania Long	9.45 (3.23)	7.37 (2.89)	8.56 (3.09)	6.39 (2.82)	8.08 (3.01)
4.	Pusa Sadabahar	11.44 (3.52)	8.93 (3.15)	9.81 (3.28)	7.38 (2.89)	9.39 (3.21)
5.	Arka Sweta	8.48 (3.08)	6.73 (2.78)	6.44 (2.72)	5.34 (2.52)	6.75 (2.77)
6.	Arka Khyati	4.31 (2.30)	3.02 (2.00)	2.82 (1.95)	1.61 (1.61)	2.94 (1.97)
7.	Arka Sheepal	5.47 (2.54)	4.06 (2.25)	3.59 (2.13)	2.44 (1.85)	3.89 (2.19)
8.	Arka Lohit	6.22 (2.68)	4.79 (2.41)	4.38 (2.31)	3.02 (2.01)	4.60 (2.35)
9.	Arka Meghna	7.32 (2.88)	5.06 (2.46)	6.16 (2.67)	4.10 (2.26)	5.66 (2.57)
10.	Pusa Jwala	12.52 (3.67)	9.28 (3.21)	10.28 (3.36)	7.88 (2.98)	9.99 (3.30)
	CD (P= 0.05)	0.26	0.19	0.29	0.15	0.22
	SE (m)	0.09	0.06	0.10	0.05	0.07

*Figures in the parenthesis are square root transformed values

Varietal screening of chilli against fruit borer

Mean per cent infestation of fruit borer damage was in the range of 2.13 to 54.04 per cent among different varieties. The highest mean population of fruit borer larval infestation (54.04%) was observed in Mathania Long genotype. The next cultivars in descending order of mean per cent infestation of borer damage wereMathania Local (49.97%), RCH-1 (45.11%), Pusa Jwala (33.62%), Pusa Sadabahar (25.89%), Arka Meghna (20.75%), Arka Sweta (17.54%), Arka Lohit (12.44%) and Arka Khyati (3.48%).The lowest mean per cent infestation of borer damage was recorded in variety Arka Sheepal (2.13%) showed in Table 5. The findings of Shivaramu and Kulkarni (2008) [17] revealed that out of 33 chilli genotypes screened against fruit borer, the seven genotypes namely, Arka Lohit, H.C.-28, Devarhippargi, Button, SL-37, TC-1 and Purired were found to be resistant while the 6 genotypes, PAU-101, California Wonder, Hybrid Agni, North- Hira LCA-312 and CA-960 were found to be highly susceptible with more than 48.7% fruit borer damage. Kurbett *et al.* (2018) found that 7 genotypes namely, BDS-01, BDS-02, BDS-03, BDS-04, BDS-05, BDS-06, BDS-15 and BDS-16 were observed as moderately resistant to *H. armigera* damage.

Table 5: Mean percent infestation of fruit borer, *Helicoverpa armigera* on different chilli varieties in 2019-20 *Kharif* season

Sr. No.	Varieties	mean percent infestation of fruit damage				Mean
		70 DAT	85 DAT	100 DAT	115 DAT	
1.	RCH-1	39.41 (38.87)	47.58 (43.60)	51.22 (45.68)	42.21 (40.50)	45.11 (42.16)
2.	Mathania Local	44.47 (41.81)	52.38 (46.34)	55.53 (48.16)	47.51 (43.55)	49.97 (44.97)
3.	Mathania Long	48.95 (44.38)	56.42 (48.67)	60.47 (51.02)	50.32 (45.17)	54.04 (47.31)
4.	Pusa Sadabahar	20.22 (26.71)	27.54 (31.64)	32.42 (34.69)	23.38 (28.90)	25.89 (30.48)
5.	Arka Sweta	13.35 (21.41)	18.90 (25.76)	22.47 (28.28)	15.44 (23.12)	17.54 (24.64)
6.	Arka Khyati	1.69 (7.32)	4.55 (12.24)	5.42 (13.42)	2.25 (8.52)	3.48 (10.38)
7.	Arka Sheepal	0.96 (5.62)	2.46 (8.94)	3.34 (10.48)	1.75 (7.60)	2.13 (8.16)
8.	Arka Lohit	8.52 (16.96)	12.46 (20.64)	18.36 (25.36)	10.44 (18.83)	12.44 (20.45)
9.	Arka Meghna	16.52 (23.96)	22.39 (28.22)	25.50 (30.13)	18.61 (25.54)	20.75 (27.01)
10.	Pusa Jwala	27.35 (31.52)	35.65 (36.64)	40.20 (39.38)	31.20 (33.94)	33.62 (35.37)
	CD (P= 0.05)	0.48	0.75	1.51	0.59	0.83
	SE (m)	0.17	0.27	0.53	0.10	0.27

*Figures in the parenthesis are angular transformed per cent values

Susceptibility of chilli varieties for leaf curling

Data indicated from Table 6 that variety Arka Khyati showed some degree of resistance against sucking pest and lowest leaf curling (PLI: 0-10) was observed and categorized as resistant. Varieties viz., Arka Sheepal, Arka Lohit and Mathania Local were showed moderately resistance and PLI score was between 11 to 25 per cent. Four varieties namely RCH-1, Mathania Long, Arka Sweta and Arka Meghna which had PLI Score between 26 to 50 per cent were categorized as susceptible varieties. Maximum sucking pest infestation was recorded in two varieties, Pusa Sadabahar and Pusa Jwala which were showed highest degree of leaf curling index (PLI: 51-100) and categorized as highly susceptible varieties. The variety Pusa Jwala and Pusa Sadabahar showed susceptibility against sucking insect pest because both varieties were very old and farmers grown continuously on same field therefore susceptibility was evolved in these varieties over the time as compared to other tested varieties. Panickar and Patel (2001) [10] found that the genotypes Byadagi kaddi (40.80%) and PKM-1 (42.80%) were found to be highly susceptible against leaf curl whereas genotypes *viz.*, Pant C1 (15.73%), LCA-312 (16.70%), Hissar Vijay (16.90%), LCA-301 (18.30%) and LCA-304 (19.90%) were found to be promising. Padhi *et al.* (2017) [9] screened fifteen genotypes against chilli leaf curl virus and results showed that no genotype was found to be fully immune to leaf curl virus. Two genotypes 13/CHVar-2 and13/CHVar-1 were found to be resistance while genotypes viz., 13CHHYB-3, 13CHHYB-1, LCA_334 and Kashi Anmol were found to be highly susceptible against leaf curl virus. Moderately resistant genotypes were as follows 13CHHYB-8, 13CHHYB-5 and 13/CHVar-4.

Table 6: Susceptibility of chilli varieties to sap sucking insect pests based on leaf curling during 2019-20 season

Sr. No.	Varieties	Leaf curling (%) at 15 days interval				Mean	Resistant Category*
		45 DAT	60 DAT	75 DAT	90 DAT		
1.	RCH-1	35.33 (36.45)	46.30 (42.86)	29.08 (32.62)	51.37 (45.77)	40.52 (39.42)	S
2.	Mathania Local	24.05 (29.35)	27.23 (31.44)	19.37 (26.10)	29.77 (33.05)	25.11 (29.97)	MR
3.	Mathania Long	36.34 (37.06)	45.99 (42.68)	29.23 (32.71)	50.14 (45.06)	40.43 (39.38)	S
4.	Pusa Sadabahar	47.28 (43.42)	59.31 (50.35)	34.41 (35.90)	67.11 (54.99)	52.03 (46.16)	HS
5.	Arka Sweta	38.26 (38.20)	47.40 (43.49)	32.49 (34.73)	55.26 (48.00)	43.35 (41.10)	S
6.	Arka Khyati	7.21 (15.55)	12.11 (20.35)	5.08 (13.02)	15.07 (22.82)	9.87 (17.94)	R
7.	Arka Sheepal	22.18 (28.08)	26.32 (30.85)	17.16 (24.46)	30.19 (33.32)	23.97 (29.19)	MR
8.	Arka Lohit	23.07 (28.69)	26.23 (30.79)	19.26 (26.01)	29.48 (32.87)	24.51 (29.59)	MR
9.	Arka Meghna	30.67 (33.61)	40.24 (39.35)	27.37 (31.53)	45.11 (42.17)	35.84 (36.67)	S
10.	Pusa Jwala	49.29 (44.58)	60.59 (51.09)	40.21 (39.34)	61.41 (51.58)	52.87 (46.65)	HS
	CD (P= 0.05)	0.80	1.60	0.51	2.15		
	SE (m)	0.29	0.57	0.19	0.75		

Figures in the parenthesis are re-transformed per cent values; * R - Resistant (PLI: 0-10); MR - Moderately resistant (PLI: 11-25): S- Susceptible (PLI: 26-50): HS - Highly susceptible (PLI: 51-100)

Conclusion

Screening of chilli varieties against major insect pests revealed that thrips infestation was maximum in variety Pusa Jwala and minimum was observed in the variety Arka Khyati which was significantly superior over all varieties. Similarly, minimum infestation of aphid was found in variety Arka Khyati and maximum infestation of aphids was observed in variety Pusa Jwala (52.56 aphids/plant) at 90 days after transplanting. Maximum infestation of whitefly was recorded at 75 days of transplanting in variety Pusa Jwala and minimum incidence of whitefly was observed in Arka Khyati. Minimum infestation of mite was observed in the variety Arka Khyati and maximum infestation of mites was found in variety Pusa Jwala during 2019-20. The maximum larval population of fruit borer was recorded at 100 days of transplanting in variety Mathania Long (54.04), whereas minimum larval population (2.13) was observed in the variety Arka Sheepal. Based on their susceptibility, out of 10 chilli varieties screened, only one variety Arka Khyati was categorized as resistant while, three were categorized as moderately resistant and two varieties, Pusa Sadabahar and Pusa Jwala showed highest degree of leaf curling index were categorized as highly susceptible varieties.

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