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Field Screening of Different Chilli Cultivars against Important Sucking Pests of Chilli in West Bengal

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ABSTRACT
Varietal screening of some chilli cultivars against important sucking pest of chilli were carried out in the present study during 2016 at District Seed Farm (AB Block) of Bidhan Chandra Krishi Viswavidyalaya located at Kalyani, Nadia, West Bengal. Six different varieties of Chilli i.e Bullet, Suryamukhi, Akashi, Bhanger, Jhumko and Mocha were subjected to field screening against important insect pests of Chilli i.e whitefly, thrips, aphids, mites and Jassids. Observations were taken at weekly intervals as insect count per three leaves and were subjected to statistical analysis for calculation of critical difference. Among the six tested cultivar of chilli Jhumko (1.62 mites/ 3 leaves) was found to be tolerant to chilli mite and bullet (3.22 mites/ 3 leaves) was susceptible against it..Suryamukhi (1.32 whitefly /3 leaves) was recorded as the tolerant one against whitefly and Akashi(1.99whitefly/ 3 leaves) was the susceptible one. Bhangar(2.13 thrips/ 3 leaves) and Mocha (5.12 thrips/ 3 leaves) were found to be toletant and susceptible cultivars against thrips respectively. Similarly Bhangar (4.01 aphid/ 3 leaves) was tolerant and Suryamukhi (5.48 aphid/3 leaves) was susceptible to Aphid infestation. Mocha (0.37 jassid/ 3 leaves) was found to be tolerant against jassid where as Bullet (1.24 jassid/ 3 leaves) was recorded as the susceptible one against it.
Key words: *Cultivar, Screening, Sucking Pests, Chilli.*

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INTRODUCTION

Chilli (*Capsicum annuam* L.) is an important spice crop as well as vegetable crop grown all over India. In India, chilli is cultivated in an area of 7.67 lakh hectares and the production is estimated at 12.34 lakh tones. India contributes about 68% of the world's production of chilli., and is No. 1 in terms of international trade, exporting 20% of its total production.(Source: FAO). chilli is cultivated in an area of 7.67 lakh hectares and the production is estimated at 12.34 lakh tones. India is the largest producer of dry chillies and peppers in the world [2, 3]. Pest profile of chilli is complex with more than 293 insect [1]. Among the different insect pests of chilli, aphid (*Aphis gossypii* Glov.), whitefly (*Bemisia tabaci* Genn.), thrips (*Scirtothrips dorsalis* Hood) mite (*Polyphagotarsonemus latus* Banks), and jassid (*Amrasca bigutula bigutula*.), were most important to cause substantial damage to chilli plant. Chilli leaf curl complex is one of the most destructive syndrome affecting chilli in India and is considered to be caused by thrip, mites and virus. Thrips cause necrosis of tissues by extracting contents from the epidermal cells. Both nymphs and adults suck the sap from tender crop canopy, resulting in shriveling of leaves, Heavy infestation of chilli thrips causes "chilli leaf curl" also called "Murda disease". Whitefly damages the plants in three ways- firstly by causing chlorosis, leaf withering, premature leaf fall and wilting, secondly by excreting honey dew, which leads to development of sooty mould thus reducing the effective leaf area for photosynthesis, third and the most important one is the transmission of chilli leaf curl virus which accounts for major yield losses. The aphids and jassids can accumulate in high densities on young tender parts of the plants and suck the sap especially from the underside of the young leaves. Feeding damage of chilli mite also causes terminal leaves and flower buds to become cupped and distorted. Farmers usually use a lot of pesticides chemicals indiscriminately and frequently for the effective management of insect pests of chilli due to their lack of education and awareness. Most of the Conventional chemicals are broad

spectrum, persistent in nature and having long residual action. The indiscriminate use of broad spectrum chemicals have resulted in reduction in biodiversity of natural enemies, outbreak of secondary pests and development of resistance to pesticides, pesticides induced resurgence and contamination of food and eco-system [4, 5]. So, there is search for newer insecticides that can break the resistance and are less persistent, non-toxic to non-target organisms, and have less residual action.

MATERIAL AND METHODS

Location

The experiment was conducted at the District Seed Farm (A-B Block) of Bidhan Chandra Krishi Viswavidyalaya located at Kalyani, Nadia, West Bengal in experimental field during the year 2016-2017. The geographical details of the site are 23° N latitude, 89° E longitude and 9.75 meter above mean sea level (MSL).

Soil

The soil of the experimental field was typically gangetic alluvial soil (Entisol) having sandy clay loam texture with good drainage facility, neutral in reaction and moderate in fertility

Lay out of the experiment:

The experiment was conducted in a Randomized Block Design (RBD) with 3 replications and 8 treatments.

Planting materials:

Table No: 1

TREATMENT	VARIETY
T1	Bullet
T2	Akashi
T3	Suryamukhi
T4	Bhangar
T5	Jhumko
T6	Mocha

Statistical Analysis

The data recorded on each Standard Week of Observations was subjected to RBD analysis and critical difference (CD) and Standard Error of Mean at 5% level of significance was worked out through Analysis of Variance(ANOVA).

Methodology:

The chilli seedlings were transplanted following randomized block design in the plots of 3.5m x 3.0m. Incidence of yellow mite , chilli thrips ,aphid, whitefly and jassid was recorded at an interval of 3 days. Pest counts were made from 3 top leaves of 5 randomly selected plants per plot. The leaves thus collected from the fields were put in a zip lock polypropylene bag and brought to the laboratory for observation under stereo- zoom binocular microscope (Olympus SZ-40) for estimation of population of thrips and mites. Observation of whitefly population was done by shaking the base of chilli plant and recording the number of whitefly through naked eye. Population of aphid, jassid and whitefly nymph was observed by using hand lense.

RESULT AND DISCUSSION

Screening of Chilli cultivars for evaluation of Susceptibility against Thrips

The mean population of thrips was recorded to be lowest in Bhanger variety i.e 2.13 thrips/ three leaves followed by Bullet and Jhumko with mean as (2.71 and 2.87 thrips/ three leaves) respectively. The highest number of thrips population was recorded in variety Mocha (5.12thrips/three leaves), followed by Surya mukhi (2.94 thrips/three leaves) and Akashi (2.90 thrips/three leaves). All the varieties were found to be significantly at par from each other except Akashi and Suryamukhi,which are not statistically at par with each other in all the weeks of observations. Thrips population has initiated from the 32nd SW and reached its peak by 43rd SW. The population of thrips was found to be consistently higher in Mocha variety. All the varieties were found to be significantly different from each other and superioriorly tolerant than Mocha.

Screening of Chilli cultivars for evaluation of Susceptibility against Mites

Observations taken reveal that the mean population of mites was recorded to be lowest in Jhumko variety followed by Akashi and Mocha with mean as 1.62, 2.81 and 3.00 mites/three leaves respectively. The highest number of mites population was recorded in variety Bullet (3.22mites/three leaves). Suryamukhi

(3.01mites/three leaves), Bhanger (3.00mites/three leaves) and Mocha (3.00mites/3leaves) were recorded not to be significantly different than each other in all the standard weeks of observations. All varieties were found to be significantly different than each other except the above mentioned varieties in all the standard weeks of observations. The population of mites recorded in Bullet was at its peak in 45th SW (11.71mites/three leaves), with its initial population build up starting from 34th SW (1.85mites/three leaves). The sudden increase in population was found in the 43rd SW in all the varieties Bullet, Suryamukhi, Akashi, Bhanger, Jhumko and Mocha,(population recorded to be 6.42, 6.79, 5.54, 5.64, 2.95 and 6.47mites/three leaves respectively). Jhumko showed excellent results against mites with its highest recorded population to be (1.62mites/three leaves).

Table 2: Varietal Screening of Chilli Cultivars against Mites

Standard Meteorological Week \ Varieties	Bullet		Akashi		Suryamukhi		Bhangar		Jhumko		Mocha		CD	S.E m (+)
30th	0.05	(0.74)	0.01	(0.71)	0.13	(0.79)	0.14	(0.80)	0.31	(0.90)	0.11	(0.78)	0.16	0.05
31st	0.18	(0.82)	0.12	(0.79)	0.19	(0.83)	0.25	(0.87)	0.40	(0.95)	0.14	(0.80)	0.17	0.06
32nd	0.19	(0.83)	0.30	(0.89)	0.43	(0.96)	0.29	(0.89)	0.45	(0.97)	0.18	(0.82)	0.19	0.06
33rd	0.70	(1.10)	0.55	(1.02)	0.91	(1.19)	0.80	(1.14)	1.09	(1.26)	1.23	(1.32)	0.43	0.14
34th	1.85	(1.53)	1.13	(1.28)	1.35	(1.36)	1.04	(1.24)	0.60	(1.05)	0.92	(1.19)	0.73	0.24
35th	1.09	(1.26)	1.27	(1.33)	1.35	(1.36)	1.29	(1.34)	0.51	(1.00)	1.24	(1.32)	0.26	0.09
36th	1.61	(1.45)	1.33	(1.35)	1.44	(1.39)	1.53	(1.42)	0.81	(1.14)	1.48	(1.41)	0.41	0.14
37th	2.57	(1.75)	1.54	(1.43)	1.63	(1.46)	1.53	(1.42)	1.09	(1.26)	1.48	(1.41)	0.53	0.18
38th	1.76	(1.50)	1.83	(1.53)	2.18	(1.64)	2.13	(1.62)	1.10	(1.26)	2.31	(1.68)	0.63	0.21
39th	2.54	(1.74)	2.07	(1.60)	2.21	(1.65)	2.23	(1.65)	1.07	(1.25)	2.24	(1.66)	0.99	0.33
40th	3.28	(1.94)	2.42	(1.71)	2.48	(1.73)	2.27	(1.66)	1.40	(1.38)	2.75	(1.80)	1.08	0.36
41st	3.71	(2.05)	3.02	(1.88)	2.94	(1.85)	3.50	(2.00)	1.85	(1.53)	2.81	(1.82)	0.71	0.24
42nd	4.53	(2.24)	3.91	(2.10)	4.21	(2.17)	4.19	(2.17)	2.30	(1.67)	4.10	(2.14)	1.27	0.42
43rd	6.42	(2.63)	5.54	(2.46)	6.79	(2.70)	5.64	(2.48)	2.95	(1.86)	6.47	(2.64)	1.51	0.50
44th	9.31	(3.13)	8.53	(3.00)	8.44	(2.99)	9.01	(3.08)	5.57	(2.46)	9.24	(3.12)	1.68	0.56
45th	11.71	(3.49)	11.40	(3.45)	11.41	(3.45)	12.18	(3.56)	4.35	(2.20)	11.25	(3.43)	1.59	0.53
Mean	3.22		2.81		3.01		3.00		1.62		3.00		-	-

Values in the parenthesis are angular transformed

Table 3: Varietal Screening of Chilli Cultivars against Thrips

Varieties	Standard Meteorological Week																Mean
	30th	31st	32nd	33rd	34th	35th	36th	37th	38th	39th	40th	41st	42nd	43rd	44th	45th	
Bullet	0.05 (0.74)	0.09 (0.77)	0.15 (0.81)	0.87 (1.17)	1.06 (1.25)	1.52 (1.42)	1.61 (1.45)	1.61 (1.45)	2.49 (1.73)	2.82 (1.82)	2.49 (1.73)	4.38 (2.21)	5.55 (2.46)	6.38 (2.62)	5.91 (2.53)	6.33 (2.61)	2.71
Akashi	0.01 (0.71)	0.20 (0.84)	0.21 (0.84)	0.74 (1.11)	1.42 (1.39)	1.95 (1.57)	2.16 (1.63)	1.97 (1.57)	2.18 (1.64)	2.56 (1.75)	2.98 (1.87)	5.35 (2.42)	6.10 (2.57)	6.21 (2.59)	5.84 (2.52)	6.55 (2.66)	2.90
Suryamukhi	0.14 (0.80)	0.10 (0.77)	0.54 (1.02)	1.12 (1.27)	1.43 (1.39)	2.00 (1.58)	2.26 (1.66)	2.17 (1.63)	2.84 (1.83)	2.52 (1.74)	2.76 (1.81)	5.05 (2.36)	6.13 (2.57)	6.15 (2.58)	5.52 (2.45)	6.23 (2.59)	2.94
Bhangar	0.00 (0.71)	0.02 (0.72)	0.48 (0.99)	1.15 (1.28)	1.26 (1.33)	2.26 (1.66)	2.02 (1.59)	2.19 (1.64)	3.01 (1.87)	2.63 (1.77)	2.66 (1.78)	2.63 (1.77)	2.60 (1.76)	3.04 (1.88)	2.94 (1.85)	5.17 (2.38)	2.13
Jhumko	0.03 (0.73)	0.03 (0.73)	0.42 (0.96)	1.19 (1.30)	1.41 (1.38)	1.89 (1.55)	2.05 (1.60)	2.01 (1.58)	2.63 (1.77)	2.48 (1.73)	2.90 (1.84)	5.21 (2.39)	5.95 (2.54)	6.32 (2.61)	4.85 (2.31)	6.54 (2.65)	2.87
Mocha	1.45 (1.40)	0.96 (1.21)	1.60 (1.45)	2.80 (1.82)	1.33 (1.35)	4.83 (2.31)	4.58 (2.25)	6.76 (2.69)	6.72 (2.69)	7.04 (2.75)	7.66 (2.86)	6.05 (2.56)	6.85 (2.71)	7.36 (2.80)	7.68 (2.86)	8.28 (2.96)	5.12
CD	0.32	0.38	0.59	0.88	0.23	1.03	1.41	0.86	1.31	0.90	1.00	1.27	1.05	1.25	1.15	1.29	-
S.E m (+)	0.10	0.13	0.20	0.29	0.08	0.34	0.47	0.28	0.43	0.30	0.33	0.42	0.35	0.41	0.38	0.43	-

Values in the parenthesis are angular transformed

Table 4: Varietal Screening of Chilli Cultivars against Aphid

Varieties	Standard Meteorological Week																Mean
	30th	31st	32nd	33rd	34th	35th	36th	37th	38th	39th	40th	41st	42nd	43rd	44th	45th	
Bullet	0.23 (0.85)	0.60 (1.05)	1.41 (1.38)	2.24 (1.66)	2.52 (1.74)	2.99 (1.87)	3.27 (1.94)	3.60 (2.02)	4.39 (2.21)	7.04 (2.75)	7.03 (2.74)	7.14 (2.76)	8.17 (2.94)	9.16 (3.11)	8.67 (3.03)	10.77 (3.36)	4.95
Akashi	0.28 (0.88)	0.10 (0.77)	0.31 (0.90)	1.04 (1.24)	1.55 (1.43)	1.63 (1.46)	2.59 (1.76)	3.11 (1.90)	3.00 (1.87)	7.01 (2.74)	7.05 (2.75)	7.59 (2.84)	8.17 (2.94)	9.17 (3.11)	8.80 (3.05)	9.09 (3.10)	4.41
Suryamukhi	0.05 (0.74)	0.13 (0.79)	0.28 (0.88)	0.62 (1.06)	1.30 (1.34)	1.87 (1.54)	2.65 (1.77)	2.80 (1.82)	2.87 (1.84)	5.66 (2.48)	10.99 (3.39)	11.87 (3.52)	12.98 (3.67)	12.97 (3.67)	11.09 (3.40)	9.51 (3.16)	5.48
Bhangar	0.00 (0.71)	0.09 (0.77)	0.06 (0.75)	1.15 (1.28)	1.50 (1.41)	1.49 (1.41)	1.94 (1.56)	1.43 (1.39)	2.92 (1.85)	2.74 (1.80)	8.62 (3.02)	7.94 (2.91)	8.03 (2.92)	9.47 (3.16)	9.13 (3.10)	7.59 (2.84)	4.01
Jhumko	0.03 (0.73)	0.13 (0.79)	0.14 (0.80)	0.84 (1.16)	1.50 (1.41)	1.94 (1.56)	2.57 (1.75)	2.48 (1.73)	2.89 (1.84)	6.03 (2.56)	8.11 (2.93)	7.92 (2.90)	8.03 (2.92	9.50 (3.16)	9.18 (3.11)	8.97 (3.08)	4.39
Mocha	0.00 (0.71)	0.19 (0.83)	0.20 (0.84)	1.06 (1.25)	1.28 (1.33)	1.39 (1.37)	2.47 (1.72)	2.65 (1.77)	2.46 (1.72)	5.51 (2.45)	7.41 (2.81)	7.09 (2.75)	8.36 (2.98)	8.21 (2.95)	9.10 (3.10)	8.01 (2.92)	4.09
CD	0.09	0.21	0.57	0.77	0.40	0.60	0.68	1.06	0.75	1.31	1.25	1.35	0.75	1.37	0.80	1.45	-
S.E m (+)	0.03	0.07	0.19	0.25	0.13	0.20	0.23	0.35	0.25	0.43	0.41	0.45	0.25	0.45	0.27	0.48	-

Values in the parenthesis are angular transformed

Table 5: Varietal Screening of Chilli Cultivars against White fly

Varieties	Standard Meteorological Week																Mean
	30th	31st	32nd	33rd	34th	35th	36th	37th	38th	39th	40th	41st	42nd	43rd	44th	45th	
Bullet	0.05 (0.74)	0.34 (0.92)	0.29 (0.89)	0.72 (1.10)	0.86 (1.17)	1.14 (1.28)	1.17 (1.29)	1.16 (1.29)	2.10 (1.61)	1.39 (1.37)	2.32 (1.68)	1.88 (1.54)	2.69 (1.79)	4.77 (2.30)	4.42 (2.22)	4.91 (2.33)	1.89
Akashi	0.69 (1.09)	0.21 (0.84)	0.78 (1.13)	0.21 (0.84)	0.36 (0.93)	0.38 (0.94)	0.48 (0.99)	1.72 (1.49)	1.31 (1.35)	2.20 (1.64)	2.69 (1.79)	2.42 (1.71)	3.58 (2.02)	3.47 (1.99)	5.30 (2.41)	6.00 (2.55)	1.99
Suryamukhi	0.00 (0.71)	0.09 (0.77)	0.07 (0.75)	0.36 (0.93)	0.24 (0.86)	0.23 (0.85)	0.36 (0.93)	0.43 (0.96)	0.8 (1.14)	1.25 (1.32)	2.01 (1.58)	1.60 (1.45)	1.84 (1.53)	3.23 (1.93)	4.20 (2.17)	4.36 (2.20)	1.32
Bhangar	0.00 (0.71)	0.18 (0.82)	0.1 (0.80)	0.27 (0.88)	0.46 (0.98)	0.38 (0.94)	0.42 (0.96)	0.60 (1.05)	1.14 (1.28)	1.47 (1.40)	2.02 (1.59)	1.79 (1.51)	2.92 (1.85)	3.88 (2.09)	4.21 (2.17)	5.08 (2.36)	1.56
Jhumko	0.10 (0.77)	0.42 (0.96)	0.08 (0.76)	0.19 (0.83)	0.37 (0.93)	0.46 (0.98)	0.41 (0.95)	0.46 (0.98)	1.23 (1.32)	1.56 (1.44)	2.14 (1.62)	1.88 (1.54)	2.64 (1.77)	3.73 (2.06)	3.85 (2.09)	5.14 (2.37)	1.54
Mocha	0.00 (0.71)	0.22 (0.85)	0.12 (0.79)	0.26 (0.87)	0.31 (0.90)	0.41 (0.95)	0.46 (0.98)	0.58 (1.04)	1.11 (1.27)	1.41 (1.38)	2.27 (1.66)	1.95 (1.57)	3.11 (1.90)	4.04 (2.13)	3.98 (2.12)	5.01 (2.35)	1.58
CD	0.31	0.17	0.19	0.22	0.32	0.19	0.19	0.66	0.27	0.29	0.36	0.35	0.67	0.71	0.62	0.54	-
S.E m (+)	0.10	0.05	0.06	0.07	0.11	0.06	0.06	0.22	0.09	0.10	0.12	0.12	0.22	0.23	0.71	0.18	-

Values in the parenthesis are angular transformed

Table 6: Varietal Screening of Chilli Cultivars Against Jassid

Varieties	Standard Meteorological Week																Mean
	30th	31st	32nd	33rd	34th	35th	36th	37th	38th	39th	40th	41st	42nd	43rd	44th	45th	
Bullet	0.46 (0.98)	0.57 (1.03)	0.35 (0.92)	0.54 (1.02)	0.72 (1.10)	0.82 (1.15)	0.87 (1.17)	0.88 (1.17)	1.95 (1.57)	1.61 (1.45)	1.26 (1.33)	1.70 (1.48)	1.80 (1.52)	2.03 (1.59)	2.06 (1.60)	2.18 (1.64)	1.24
Akashi	0.00 (0.71)	0.03 (0.73)	0.12 (0.79)	0.12 (0.79)	0.53 (1.01)	0.41 (0.95)	0.36 (0.93)	0.37 (0.93)	0.42 (0.96)	0.65 (1.07)	0.66 (1.08)	0.52 (1.01)	0.87 (1.17)	1.43 (1.39)	1.34 (1.36)	1.38 (1.37)	0.58
Suryamukhi	0.00 (0.71)	0.03 (0.73)	0.03 (0.73)	0.08 (0.76)	0.34 (0.92)	0.37 (0.93)	0.35 (0.92)	0.38 (0.94)	1.07 (1.25)	0.48 (0.99)	0.51 (1.00)	0.62 (1.06)	0.80 (1.14)	1.09 (1.26)	0.89 (1.18)	1.27 (1.33)	0.52
Bhangar	0.00 (0.71)	0.06 (0.75)	0.06 (0.75)	0.13 (0.79)	0.44 (0.97)	0.35 (0.92)	0.38 (0.94)	0.33 (0.91)	0.42 (0.96)	0.49 (0.99)	0.68 (1.09)	0.58 (1.04)	0.78 (1.13)	1.37 (1.37)	1.24 (1.32)	1.41 (1.38)	0.55
Jhumko	0.00 (0.71)	0.00 (0.71)	0.02 (0.72)	0.14 (0.80)	0.28 (0.88)	0.37 (0.93)	0.32 (0.91)	0.35 (0.92)	0.36 (0.93)	0.61 (1.05)	0.54 (1.02)	0.62 (1.06)	0.74 (1.11)	1.26 (1.33)	0.91 (1.19)	1.09 (1.26)	0.48
Mocha	0.01 (0.71)	0.00 (0.71)	0.06 (0.75)	0.15 (0.81)	0.19 (0.83)	0.23 (0.85)	0.16 (0.81)	0.20 (0.84)	0.25 (0.87)	0.46 (0.98)	0.44 (0.97)	0.38 (0.94)	0.59 (1.04)	0.95 (1.20)	0.80 (1.14)	1.09 (1.26)	0.37
CD	0.24	0.22	0.16	0.19	0.15	0.13	0.11	0.11	0.92	0.40	0.29	0.14	0.24	0.34	0.50	0.48	
S.E m (+)	0.08	0.07	0.05	0.06	0.05	0.04	0.04	0.04	0.31	0.13	0.10	0.05	0.08	0.11	0.16	0.16	

Values in the parenthesis are angular transformed

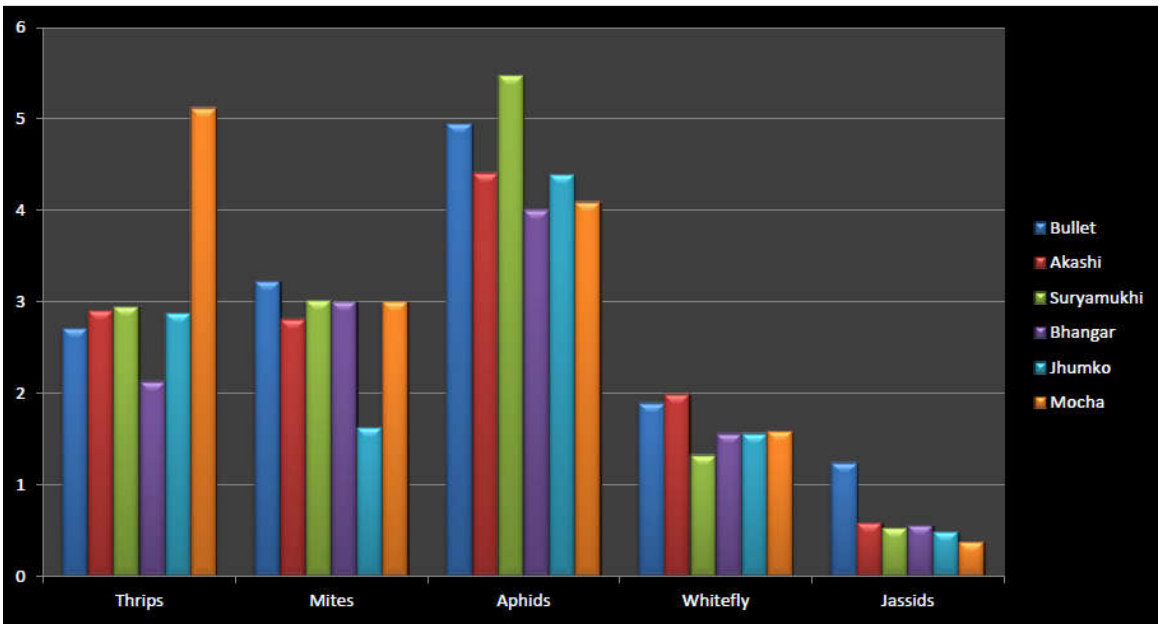

Figure 1: Susceptibility of Different Chilli Cultivars against Important Sucking Pests

Screening of Chilli cultivars for evaluation of Susceptibility against Aphids

Out of the six varieties taken under observations, the mean population of aphids was recorded to be lowest in Bhanger variety followed by Mocha and Akashi with mean as 4.01, 4.09 and 4.41 aphids/3leaves respectively. The highest mean population of aphids was recorded in variety Suryamukhi (5.48aphids/ three leaves), followed by Bullet (4.95 aphids/ 3leaves) and Akashi(4.41 aphids/ three leaves). All the varieties were found to be significantly at par from each other in all the weeks of observations. The population buildup consistently started from 34th SW and reached its peak in 42nd and 43rd SW. Suryamukhi showed highest population i.e (12.97 aphids/three leaves) in the 43rd SW. Almost, same scenario goes with the other varieties too. All the varieties were significantly different from each other in all the standard weeks of observations.

Screening of Chilli cultivars for evaluation of Susceptibility against Whitefly

The result reveals that Suryamukhi shows highest tolerance against whitefly with lowest recorded mean of whitefly i.e 1.32whitefly/three leaves followed by Jhumko, Bhanger and Mocha with their means 1.54, 1.56 and 1.58 whitefly/three leaves respectively. The highest mean population of whitefly was recorded in Akashi variety i.e 1.99whitefly/three leaves followed by Bullet (1.89 whitefly/three leaves.). Jhumko, Bhanger and Mocha varieties were found not be significantly at par with each other in all the standard weeks .Variety Bullet and Suryamukhi were found to be significantly at par along with Akashi. All th above mentioned varieties were found to significantly different from Jhumko, Bhanger and Mocha, in all the SMW‟s. Whitefly population was found to be negligible in all the varieties in the initial days, with initiation of population from 31st SMW and continued upto 45th SMW where least population was observed in Suryamukhi variety and highest population was observed in Akashi variety with its peak reaching in the 45th SMW. The best results against whiteflies were observed in Suryamukhi variety.

Screening of Chilli cultivars for evaluation of Susceptibility against Jassids

Observations undertaken stated that the mean population of jassids was recorded to be lowest in Mocha variety followed by Jhumko with mean as 0.37 and 0.48 jassids/ three leaves respectively. The highest number of jassids population was recorded in variety Bullet (1.24 jassids/ three leaves), followed by Akashi(0.58 jassids/ three leaves) and Suryamukhi(0.52 jassids/ three leaves). All the varieties were found to be significantly at par from each other except Akashi(0.58jassids/ three leaves) , Suryamukhi (0.52 jassids/ three leaves) and Bhanger (0.55 jassids/ three leaves) ,which are not statistically at par with each other in all the weeks of observations. The population of jassids was initially very less in all the varieties taken under observations. The initial population build up started from 35th SW in a lag phase it continued upto 43rd SW. Variety Bullet which was recorded with highest no of jassids had its peak population to in 45th SW.

CONCLUSION

Among the six tested cultivar of chilli Jhumko (1.62 mites/ 3 leaves) was found to be tolerant to chilli mite and bullet (3.22 mites/ 3 leaves) was susceptible against it. Suryamukhi (1.32 whitefly /3 leaves) was recorded as the tolerant one against whitefly and Akashi(1.99whitefly/ 3 leaves) was the susceptible one. Bhangar (2.13 thrips/ 3 leaves) and Mocha (5.12 thrips/ 3 leaves) were found to be toletant and susceptible cultivars respectively. Similarly Bhangar (4.01 aphid/ 3 leaves) was tolerant and Suryamukhi (5.48 aphid/3 leaves) was susceptible to Aphid infestation. Mocha (0.37 jassid/ 3 leaves) was found to be tolerant against jassid where as Bullet (1.24 jassid/ 3 leaves) was recorded as the susceptible one against it.

REFERENCES

1. Ahmed, K.; Mehmood, M.G. and Murthy, N.S.R. (1987). Yield losses due to various pests in hot pepper. *Capsicum Newsletter.* 6: 83-84.
2. Anonymous, (2012). www.faostat.com.
3. Anonymous, (2012a). Spice board of India.
4. http://www.fao.org/statistics/en/
5. Singh, S.P. (2000). Bio Intensive approach Helpful. *The Hindu Survey of Indian Agriculture* : 159-163.

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