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Efficacy of different acaricides against rice sheath mite, *Steneotarsonemus spinki* smiley on rice crop

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Abstract
An experiment was conducted during *kharif*-2016 at Main Rice Research Centre, Navsari Agricultural University, Navsari to test the relative efficacy of some acaricides against rice sheath mite, *Steneotarsonemus spinki* Smiley. Among all the acaricides tested, chlorfenpyr 10 SC @ 1.00 ml/litre and buprofezin 25 EC @ 1.20 ml/litre were found to be most effective in controlling *S. spinki*. The next best effective treatments in the order of merit were diafenthiuron 50 WP @ 1.10 g/litre, propargite 57 EC @ 1.00 ml/litre and fenpyroximate 5 EC @ 0.50 ml/litre in terms of reduction of sheath mite population. As far as the yield is concerned, the highest grain yield was recorded in the treatment of chlorfenpyr 10 SC @ 1.00 ml/litre (5024 kg/ha) and it was at par with the treatment of buprofezin 25 EC @ 1.20 ml/litre (4922 kg/ha), diafenthiuron 50 WP @ 1.10 g/litre (4799 kg/ha), propargite 57 EC @ 1.00 ml/litre (4493 kg/ha), fenpyroximate 5 EC @ 0.50 ml/litre (4084 kg/ha), abamectin 1.9 EC @ 1.30 ml/litre (4003 kg/ha) and fenazaquin 10 EC @ 1.00 ml/litre (3839 kg/ha). The highest straw yield was recorded in the treatment of chlorfenpyr 10 SC @ 1.00 ml/litre (6515 kg/ha) and it was at par with buprofezin 25 EC @ 1.20 ml/litre (6454 kg/ha), diafenthiuron 50 WP @ 1.10 g/litre (6413 kg/ha), propargite 57 EC @ 1.00 ml/litre (6392 kg/ha) and fenpyroximate 5 EC @ 0.50 ml/litre (6086 kg/ha).

Keywords: Rice sheath mite, acaricide, efficacy, grain and straw yield

1. Introduction

Rice (*Oryza sativa* L.), is the world's second most important cereal crop. Asia is considered to be "rice bowl" of the world, where more than 90 per cent of world's rice is produced and consumed. It is the staple food of nearly half of the humanity of the world. It is mainly grown and consumed in Asian countries such as India, China, Japan, Indonesia, Thailand, Pakistan, Bangladesh, North and South Koreas, Myanmar, Philippines, Sri Lanka etc. It is one of the oldest and second most intensively grown cereal crops next to wheat.

India is number one in an area with approximately 42.949 million hectares of rice area and it ranks second in production with approximately 112.905 million tones with productivity 2629 kg/ha [1]. Low yields of rice have been attributed to a number of factors. Traditionally, insect pests, diseases and weeds are the triple evils responsible for low yields of rice in India. Among insect pest, mites are assuming more dangerous for rice crop in India. Rice mites are also assuming the major pest status. Among different species of mites associated with rice crop, the sheath mite or panicle mite and the leaf mite are most important. The sheath mite, *Steneotarsonemus spinki* Smiley which belongs to family Tarsonemidae infests flag leaf sheath causing brown discoloration. Infestation of this mite on panicle causes chaffy grains and also discoloration of filled or ill-filled grains. Grain sterility is one of the most common effects due to feeding of this mite on rice and also act as carrier of various pathogenic fungi like *Acrocylindrium* (*Sarocladium*) *oryzae*, *Fusarium moniliformae*, *Helminthosporium oryzae etc* [2]. Its attack is common in states like Karnataka, Andhra Pradesh, Orissa and Gujarat [3]. It also attacked rice field in West Bengal [4]. Severe crop losses due to infestation of sheath mite were reported from China (30 to 90%), Cuba (70%) and predicted loss up to 30 to70% in Brazil [5]. It has been reported that this mite caused yield losses ranging from 4.9% to 23.7% [6]. Dicofol 18.5 EC @ 500 g *a.i.*/ha as the best treatments against panicle mite under field conditions [7]. The occurrence of rice sheath mite has increase in South Gujarat since few years and has become major problem in rice cultivation as it reduce quality and quantity of rice production because of that economic losses to farmers and consumers. In the treatment, after 1st spray and 2nd spray the highest per cent mortality of rice sheath mite's eggs were recorded in the treatment of chlorfenpyr 10 SC 0.015 @ 75 ml/ha [8, 9].

It is revealed the acaricides, diafenthiuron 50 SC @ 450 g *a.i.*/ha was the best acaricide which recorded significantly lower numbers of rice panicle mite [10]. Whereas, mite population declined from 26.20 to 6.40 and 30.93 to 9.40 mites per leaf sheath in fenpyroximate and fenzaquin treatments, respectively [11]. The the maximum grain yield (6139 kg/ha) of rice was recorded in the treatment of diafenthiuron 50 WP 0.12 @ 600 gm/ha and buprofezin 25 SC 0.03 @ 150 ml/ha (6133 kg/ha) [9]. The maximum straw yield of rice was recorded in the treatment of chlorfenpyr 10 SC 0.015 @ 75 ml/ha (6115 kg/ha) [12].

2. Materials and Methods

The field experiment was laid out in randomized block design during *kharif* 2016 with three replications at the Main Rice Research Centre, Navsari Agricultural University, Navsari, Gujarat, India. There were ten treatments including untreated control. The rice variety GR-11 was used for the experiment. The spacing was 20 x 15 cm whereas the gross plot size was 5.4 x 3.6 m^2, with the net plot size of 5.1 x 3.2 m^2. All the recommended agronomic packages of practices were followed to raise the crop. The crop was transplanted when the seedlings were 22 days old. The experiment laid out in a randomized block design (RBD) with ten treatments *viz*., T_1: abamectin 1.9 EC @ 1.30 ml/litre, T_2: fenazaquin 10 EC @ 1.00 ml/litre, T_3: buprofezin 25 EC @ 1.20 ml/litre, T_4: fenpyroximate 5 EC @ 0.50 ml/litre, T_5: propargite 57 EC @ 1.00 ml/litre, T_6: diafenthiuron 50 WP @ 1.10 g/litre, T_7: wettable sulphur 80 WP @ 2.50 g/litre, T_8: chlorfenpyr 10 SC @ 1.00 ml/litre, T_9: Water spray and T_{10}: Control (untreated).

The treatments were applied first at the time of panicle initiation (flag leaf initiation) and the second spray of various pesticide treatments were imposed 15 days after the first application. Total 10 leaf sheaths of rice were randomly selected from each net plot and brought to the acarology laboratory at Department of Entomology, N. M. College of Agriculture, N.A.U., Navsari in separate polythene bags. The observations in the sheath mite population were recorded before spray and after 1, 3, 7 and 14 days after spray on 2 cm leaf sheath (mobile stages). The yield data on grain and straw were recorded plot wise (kg per plot) and were converted as on hector basis.

3. Results and Discussion

The efficacy of different acaricides, after 1st spray, the treatment of chlorfenpyr 10 SC @ 1.00 ml/litre was found the lowest sheath mite's eggs 13.46, 10.80, 6.30 and 2.89 eggs/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively. After 1st spray, buprofezin 25 EC @ 1.20 ml/litre was second best treatment in order of effectiveness which gave 15.90, 12.51, 8.88 and 3.96 eggs/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively. After 1st spraying, wettable sulphur 80 WP @ 2.50 g/litre was the least effective against rice sheath mite's eggs which showed 19.90, 16.60, 13.90 and 9.80 eggs/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively (Table 1). Anonymous [9] reported that after 1st spray, the highest per cent mortality of rice sheath mite's eggs was recorded in the treatment of chlorfenpyr 10 SC 0.015 @ 75 ml/ha. Thus, the present findings are in conformity with the earlier report.

In case mobile stages of rice sheath mite against after 1st spray, chlorfenpyr 10 SC @ 1.00 ml/litre was most effective acaricide which resulted 12.40, 10.16, 5.96 and 3.69 mobile stages/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively. After 1st spray, the next best treatment was buprofezin 25 EC @ 1.20 ml/litre which gave 14.80, 12.39, 8.01 and 4.25 mobile stages/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively. After 1st spraying, wettable sulphur 80 WP @ 2.50 g/litre was the least effective against the mobile stage of rice sheath mite which showed 18.93, 16.20, 13.10 and 10.10 mobile stages/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively (Table 2). After 1st spray highest per cent mortality of the mobile stages of rice sheath mite were recorded in the treatment of chlorfenpyr 10 SC 0.015 @ 75 ml/ha reported by Anonymous [8]. Thus, the present findings are in agreement with the earlier report. Further, fenpyroximate and fenzaquin showed its superiority in controlling the mite population declined from 26.20 to 6.40 and 30.93 to 9.40 mites per leaf sheath, respectively in paddy field in past also reported by Mutthuraja and Srinivasa [11]. The present findings are more or less in conformity with the earlier workers.

A similar trend of results existed after the second spraying of acaricides against eggs of rice sheath mite, *S. spinki*. After 2nd spray, the treatment of chlorfenpyr 10 SC @ 1.00 ml/litre was found the lowest sheath mite's eggs 6.61, 5.07, 3.54 and 1.44 eggs/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively. After 2nd spray, buprofezin 25 EC @ 1.20 ml/litre was second best treatment in order of effectiveness which gave 7.79, 6.56, 4.50 and 2.22 eggs/2 cm leaf sheath at 1, 3, 7 and 14 days respectively. After 2nd spraying, wettable sulphur 80 WP @ 2.50 g/litre was the least effective against rice sheath mite's eggs which showed 10.30, 8.88, 7.02 and 4.89 eggs/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively (Table 3). After 2nd spray, the highest per cent mortality of rice sheath mite's eggs were recorded in the treatment of chlorfenpyr 10 SC 0.015 @ 75 ml/ha reported by Anonymous [9]. Thus, the present findings are in conformity with the earlier report

In case mobile stages of rice sheath mite, *S. spinki* similar trend of results existed after second spraying. The treatment of chlorfenpyr 10 SC @ 1.00 ml/litre was most effective acaricide which resulted 6.56, 4.84, 2.96 and 1.24 mobile stages/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively. After 2nd spray, the next best treatment was buprofezin 25 EC @ 1.20 ml/litre which gave 7.56, 6.35, 4.25 and 1.49 mobile stages/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively. After 2nd spraying, wettable sulphur 80 WP @ 2.50 g/litre was the least effective against the mobile stage of rice sheath mite which showed 9.55, 8.30, 6.71 and 4.08 mobile stages/2 cm leaf sheath at 1, 3, 7 and 14 days, respectively (Table 4). After 2nd spray, the highest per cent mortality of the mobile stages of rice sheath mite were recorded in the treatment of chlorfenpyr 10 SC 0.015 @ 75 ml/ha reported by Anonymous [8]. Thus, the present findings are in agreement with the earlier report. The present studies were also supported by Bhanu and Reddy [10] who reported diafenthiuron 50 SC @ 450 g *a.i.*/ha was the best acaricide which recorded significantly lower numbers of rice panicle mite Thus, the result obtained though present investigations are in agreement with earlier workers.

Table 1: Efficacy of acaricides against eggs of rice sheath mite, *S. spinki* after first spraying (*kharif*-2016)

Treatments		Rate (g or ml/litre)	B.S. (2 cm leaf sheath)	No. of eggs/2 cm leaf sheath				
				1 DAS*	3 DAS*	7 DAS*	14 DAS*	Mean
T_1	Abamectin 1.9 EC	1.30	19.20	4.26 (18.20)	3.88 (15.10)	3.40 (11.60)	2.81 (7.90)	3.62 (13.17)
T_2	Fenazaquin 10 EC	1.00	20.33	4.41 (19.50)	4.05 (16.40)	3.59 (12.90)	2.96 (8.76)	3.80 (14.50)
T_3	Buprofezin 25 EC	1.20	18.33	3.98 (15.90)	3.54 (12.51)	2.98 (8.88)	1.99 (3.96)	3.21 (10.35)
T_4	Fenpyroximate 5 EC	0.50	19.13	4.15 (17.39)	3.83 (14.70)	3.39 (11.50)	2.80 (7.84)	3.58 (12.88)
T_5	Propargite 57 EC	1.00	19.00	4.16 (17.30)	3.77 (14.28)	3.24 (10.50)	2.55 (6.50)	3.48 (12.17)
T_6	Diafenthiuron 50 WP	1.10	18.93	4.12 (17.00)	3.70 (13.70)	3.17 (10.10)	2.21 (4.89)	3.38 (11.49)
T_7	Wettable Sulphur 80 WP	2.50	20.47	4.46 (19.90)	4.07 (16.60)	3.72 (13.90)	3.13 (9.80)	3.88 (15.10)
T_8	Chlorfenpyr 10 SC	1.00	15.67	3.65 (13.46)	3.28 (10.80)	2.51 (6.30)	1.70 (2.89)	2.91 (8.47)
T_9	Water spray	-	19.00	4.48 (20.10)	4.08 (16.70)	3.78 (14.30)	3.24 (10.50)	3.95 (15.60)
T_{10}	Control	-	20.93	4.58 (21.00)	4.62 (21.40)	4.66 (21.80)	4.71 (22.20)	4.64 (21.60)
	SEm±	-	1.09	0.15	0.18	0.18	0.13	0.10
	C.D.at 5 %	-	NS	0.45	0.54	0.53	0.37	0.40
	C.V.%	-	9.87	6.23	8.17	8.93	7.73	7.90

B.S.= Before spray, DAS=Days after spray
*Figures outside the parenthesis are √x+0.5 transformed value while figures in parenthesis are retransformed value.

Table 2: Efficacy of acaricides against mobile stages of rice sheath mite, *S. spinki* after first spraying (*kharif*-2016)

Treatments		Rate (g or ml/litre)	B.S. (2 cm leaf sheath)	No. of mobile stages/2 cm leaf sheath				
				1 DAS*	3 DAS*	7 DAS*	14 DAS*	Mean
T_1	Abamectin 1.9 EC	1.30	19.80	4.22 (17.89)	3.72 (13.90)	3.26 (10.69)	2.65 (7.02)	3.51 (12.39)
T_2	Fenazaquin 10 EC	1.00	20.93	4.31 (18.60)	3.89 (15.20)	3.46 (12.00)	2.92 (8.53)	3.68 (13.60)
T_3	Buprofezin 25 EC	1.20	18.93	3.84 (14.80)	3.51 (12.39)	2.83 (8.01)	2.06 (4.25)	3.14 (9.86)
T_4	Fenpyroximate 5 EC	0.50	19.73	4.10 (16.89)	3.67 (13.50)	3.25 (10.60)	2.59 (6.71)	3.45 (11.90)
T_5	Propargite 57 EC	1.00	19.60	4.03 (16.30)	3.61 (13.10)	3.09 (9.55)	2.45 (6.01)	3.35 (11.29)
T_6	Diafenthiuron 50 WP	1.10	19.53	3.99 (15.93)	3.58 (12.88)	3.03 (9.18)	2.21 (4.89)	3.27 (10.70)
T_7	Wettable Sulphur 80 WP	2.50	21.07	4.34 (18.93)	4.02 (16.20)	3.60 (13.10)	3.17 (10.10)	3.81 (14.59)
T_8	Chlorfenpyr 10 SC	1.00	17.00	3.52 (12.40)	3.18 (10.16)	2.44 (5.96)	1.92 (3.69)	2.85 (8.12)
T_9	Water spray	-	19.87	4.36 (19.01)	4.02 (16.20)	3.75 (14.10)	3.59 (12.90)	3.96 (15.70)
T_{10}	Control	-	20.87	4.64 (21.60)	4.68 (21.90)	4.72 (22.30)	4.78 (22.90)	4.70 (22.10)
	SEm±	-	0.9054	0.15	0.17	0.12	0.14	0.08
	C.D.at 5%	-	NS	0.45	0.51	0.37	0.42	0.39
	C.V.%	-	7.95	6.32	7.83	6.42	8.61	7.86

B.S.= Before spray, DAS=Days after spray
*Figures outside the parenthesis are √x+0.5 transformed value while figures in parenthesis are retransformed value.

Table 3: Efficacy of acaricides against eggs of rice sheath mite, *S. spinki* after second spraying (*kharif*-2016)

Treatments		Rate (g or ml/litre)	B.S. (2 cm leaf sheath)	No. of eggs/2 cm leaf sheath				
				1 DAS*	3 DAS*	7 DAS*	14 DAS*	Mean
T_1	Abamectin 1.9 EC	1.30	9.53	3.06 (9.37)	2.79 (7.79)	2.41 (5.81)	1.94 (3.77)	2.58 (6.66)
T_2	Fenazaquin 10 EC	1.00	10.13	3.15 (9.92)	2.90 (8.41)	2.55 (6.50)	2.09 (4.37)	2.70 (7.29)
T_3	Buprofezin 25 EC	1.20	8.47	2.79 (7.79)	2.56 (6.56)	2.12 (4.50)	1.49 (2.22)	2.30 (5.29)
T_4	Fenpyroximate 5 EC	0.50	9.53	3.04	2.75	2.41	1.88	2.56 (6.56)

				(9.24)	(7.56)	(5.81)	(3.54)	
T_5	Propargite 57 EC	1.00	9.47	2.99 (8.94)	2.73 (7.46)	2.30 (5.29)	1.81 (3.28)	2.50 (6.25)
T_6	Diafenthiuron 50 WP	1.10	9.47	2.96 (8.76)	2.66 (7.08)	2.26 (5.11)	1.78 (3.17)	2.46 (6.05)
T_7	Wettable Sulphur 80 WP	2.50	10.13	3.20 (10.30)	2.98 (8.88)	2.65 (7.02)	2.21 (4.89)	2.79 (7.79)
T_8	Chlorfenpyr 10 SC	1.00	6.87	2.57 (6.61)	2.25 (5.07)	1.88 (3.54)	1.20 (1.44)	2.07 (4.29)
T_9	Water spray	-	9.27	3.24 (10.50)	3.14 (9.86)	2.86 (8.16)	2.30 (5.29)	2.91 (8.47)
T_{10}	Control	-	9.93	3.39 (11.50)	3.35 (11.23)	3.40 (11.60)	3.50 (12.30)	3.41 (11.64)
	SEm±		0.66	0.13	0.11	0.12	0.08	0.08
	C.D.at5%		NS	0.39	0.33	0.36	0.23	0.30
	C.V.%		12.35	7.52	6.80	8.54	6.75	8.37

B.S.= Before spray, DAS=Days after spray
*Figures outside the parenthesis are √x+0.5 transformed value while figures in parenthesis are retransformed value.

Table 4: Efficacy of acaricides against mobile stages of rice sheath mite, S. spinki after second spraying (kharif-2016)

Treatments		Rate (g or ml/litre)	B.S. (2 cm leaf sheath)	No. of mobile stages/2 cm leaf sheath				
				1 DAS*	3 DAS*	7 DAS*	14 DAS*	Mean
T_1	Abamectin 1.9 EC	1.30	9.87	2.96 (8.76)	2.68 (7.18)	2.36 (5.57)	1.68 (2.83)	2.47 (6.10)
T_2	Fenazaquin 10 EC	1.00	10.40	3.07 (9.43)	2.79 (7.79)	2.48 (6.15)	1.83 (3.35)	2.58 (6.66)
T_3	Buprofezin 25 EC	1.20	9.40	2.75 (7.56)	2.52 (6.35)	2.06 (4.25)	1.22 (1.49)	2.22 (4.93)
T_4	Fenpyroximate 5 EC	0.50	9.80	2.93 (8.59)	2.64 (6.97)	2.33 (5.43)	1.65 (2.73)	2.44 (5.96)
T_5	Propargite 57 EC	1.00	9.73	2.85 (8.12)	2.60 (6.76)	2.23 (4.98)	1.54 (2.38)	2.36 (5.57)
T_6	Diafenthiuron 50 WP	1.10	9.87	2.86 (8.18)	2.54 (6.45)	2.20 (4.84)	1.45 (2.11)	2.31 (5.34)
T_7	Wettable Sulphur 80 WP	2.50	10.53	3.09 (9.55)	2.88 (8.30)	2.59 (6.71)	2.02 (4.08)	2.68 (7.18)
T_8	Chlorfenpyr 10 SC	1.00	7.00	2.56 (6.56)	2.20 (4.84)	1.72 (2.96)	1.11 (1.24)	1.99 (3.96)
T_9	Water spray	-	9.60	3.12 (9.74)	2.91 (8.47)	2.73 (7.46)	2.10 (4.41)	2.76 (7.62)
T_{10}	Control	-	10.33	3.33 (11.10)	3.37 (11.40)	3.34 (11.20)	3.43 (11.80)	3.37 (11.40)
	SEm±		0.7288	0.09	0.10	0.11	0.06	0.08
	C.D.at5%		NS	0.26	0.30	0.32	0.19	0.32
	C.V.%		13.08	5.17	6.41	7.78	6.22	9.32

B.S.= Before spray, **DAS**=Days after spray
*Figures outside the parenthesis are √x+0.5 transformed value while figures in parenthesis are retransformed values.

4. Grain and straw yield of rice

4.1 Grain yield

The grain yields of different treatments were statistically significant and superior over control (Table 5). The highest grain yield was recorded in the treatment of chlorfenpyr 10 SC @ 1.00 ml/litre (5024 kg/ha) and it was at par with the treatment of buprofezin 25 EC @ 1.20 ml/litre (4922 kg/ha), diafenthiuron 50 WP @ 1.10 g/litre (4799 kg/ha), propargite 57 EC @ 1.00 ml/litre (4493 kg/ha), fenpyroximate 5 EC @ 0.50 ml/litre (4084 kg/ha), abamectin 1.9 EC @ 1.30 ml/litre (4003 kg/ha), fenazaquin 10 EC @ 1.00 ml/litre (3839 kg/ha), whereas remaining treatments were superior over control. The maximum grain yield (6139 kg/ha) of rice was recorded in the treatment of diafenthiuron 50 WP 0.12 @ 600 gm/ha and buprofezin 25 SC 0.03 @ 150 ml/ha (6133 kg/ha) reported by Anonymous [9]. Thus, the present findings are more or less similar with the earlier reports.

4.2 Straw yield

All the acaricidal treatments were significantly superior in recording higher straw yield as compared to untreated control (Table 5). The highest straw yield was recorded in the plot treated with chlorfenpyr 10 SC @ 1.00 ml/litre (6515 kg/ha) which was at par with buprofezin 25 EC @ 1.20 ml/litre (6454 kg/ha), diafenthiuron 50 WP @ 1.10 g/litre (6413 kg/ha), propargite 57 EC @ 1.00 ml/litre (6392 kg/ha), whereas the treatment of fenpyroximate 5 EC @ 0.50 ml/litre was recorded straw yield (6086 kg/ha) and it was at par with the treatments abamectin 1.9 EC @ 1.30 ml/litre (6066 kg/ha), fenazaquin 10 EC @ 1.00 ml/litre (6045 kg/ha), wettable sulphur 80 WP @ 2.50 g/litre (6004 kg/ha) and water spray (5800 kg/ha). The maximum straw yield of rice was recorded in the treatment of chlorfenpyr 10 SC 0.015 @ 75 ml/ha (6115 kg/ha) reported by Anonymous [12]. Thus, past worker's findings are in agreement with present findings.

Table 5: Grain and straw yield of rice (kharif-2016)

Treatments		Grain yield		Straw yield	
		(kg/plot)	(kg/ha)	(kg/plot)	(kg/ha)
T_1	Abamectin 1.9 EC	6.53	4003	9.90	6066
T_2	Fenazaquin 10 EC	6.27	3839	9.87	6045
T_3	Buprofezin 25 EC	8.03	4922	10.53	6454
T_4	Fenpyroximate 5 EC	6.67	4084	9.93	6086
T_5	Propargite 57 EC	7.33	4493	10.43	6392
T_6	Diafenthiuron 50 WP	7.83	4799	10.47	6413
T_7	Wettable Sulphur 80 WP	5.90	3615	9.80	6004
T_8	Chlorfenpyr 10 SC	8.20	5024	10.63	6515
T_9	Water spray	4.43	2716	9.47	5800
T_{10}	Control	4.33	2655	8.83	5412
SEm±		0.74	-	0.23	-
C.D.at5%		2.19	-	0.69	-
C.V.%		19.44	-	4.02	-

5. Conclusion

The sheath mite, *S. spinki* is a serious pest of rice. On the basis of the study it can be concluded that the pesticide chlorfenpyr 10 SC @ 1.00 ml/litre was most effective in controlling the sheath mite of rice and it was followed by other pesticides like buprofezin 25 EC @ 1.20 ml/litre, and diafenthiuron 50 WP @ 1.10 g/litre.

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