



RESEARCH NOTE

Evaluation of insecticides for management of thrips, *Scirtothrips dorsalis* Hood in cashew

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ABSTRACT: The production and productivity of cashew is influenced by many factors, among which incidence of insect pests is one of the major factor. Cashew thrips is one of the most important pest of cashew. Considering the importance of thrips, experiment was carried out at Regional Fruit Research Station, Vengurla under All India Coordinated Research Project on Cashew for management of cashew thrips during 2015-16 to 2017-18. From the pooled data of three years, it is revealed that the insecticide acetamiprid20SP @ 0.5 g/L was found to be the most effective for management of cashew thrips with the least incidence of thrips (2.29%) after third spray followed by deltamethrin 2.8 EC @ 0.9ml/ lit (3.68%).

Keywords: Cashew, insect pest, management, thrips, *Scirtothrips dorsalis*

Cashew is one of the most important cash crop grown in India. The production and productivity of cashew is influenced by many biotic and abiotic factors; among them, incidence of insect pests is the major constraint (Dumbare *et al.*, 1987; Godase *et al.*, 2005; Raviprasad, 2015; Anamika Kar and Poduval, 2016; Zote *et al.*, 2017; Gupta, 2020; Lakshmana *et al.*, 2020; Molly Irine *et al.*, 2020). Pillai *et al.* (1976) documented sixty insect species causing regular damage to cashew crop; among which tea mosquito bug (*Helopeltis antonii*), stem and root borer (*Placaederus ferrugineus*), inflorescence thrips (*Scirtothrips dorsalis*), apple and nut borer (*Nephoteryx sp.*) etc. are the major pests of cashew in India. Patil *et al.*, (1979) reported *Scirtothrips dorsalis* as predominant species of cashew thrips in Konkan region of Maharashtra. Godase *et al.*, (2005) and Navik (2015) reported that, thrips has become a major pest of cashew causing upto 30 per cent reduction in nut weight in Konkan region of Maharashtra. About six species of thrips are known to attack cashew in India; out of which four species viz., *Scirtothrips dorsalis* Hood., *Thrips hawaiiensis* Morgan., *Selenothrips rubrocinctus* Giard and *Haplothrips tenuipennis* Bagnal have been recorded infesting cashew in Konkan region of Maharashtra (Parab, 2010).

Adults and nymphs are seen in colonies on the lower surface of leaves. Due to sustained feeding by large number of thrips, the terminal leaves curl downward from margin toward mid rib. In due course, the young leaves fall down. Due to feeding by huge number of thrips, the apples and nuts become corky, remain under sized with

shabby appearance. Also, the juice content of apple is reduced (Maruthadurai *et al.*, 2012 and Navik, 2016). The thrips alone accounts for severe fruit drop (Panda, 2013). Considering the importance of thrips in Konkan region, the present study was conducted to evaluate the efficacy of some insecticides against cashew thrips at Regional Fruit Research Station, Vengurla under All India Coordinated Research Project on Cashew during 2015-16 to 2017-18.

A field trial was conducted in randomized block design with seven treatments (Table 1) and three replications during the years 2015-16, 2016-17 and 2017-18 at Regional Fruit Research Station, Vengurla under AICRP on Cashew to find out the effective insecticide for the management of thrips with following different treatments.

For recording per cent incidence of thrips (corky growth or presence of scabs) hundred nuts as well as apples per tree were selected randomly and thrips damage score was recorded in 0-4 scale (Table 1) ((Ambika *et al.*, 1979, Godase *et al.*, 1990).

The data on the percent incidence of thrips recorded during the year 2015-16, 2016-17, 2017-18 along with pooled data of three years is presented in Table 1. All the insecticide treatments were found effective for management of cashew thrips, as these treatments reduced the pest incidence over control significantly. During 2015-16, the treatment T₂ (Acetamiprid20 SP @0.5 g/L) was found to be the most effective treatment which recorded the least incidence of thrips (2.88 %). It was significantly superior over all other treatments.

Table 1. Scoring of thrips damage

Rating	Extent of damage
0	No damage
1	1-25 per cent nut or apple surface damaged (up to 1/4 of the damaged surface area)
2	26-50 per cent nut or apple surface damaged (up to 1/2 of the damaged surface area)
3	51-75 per cent nut or apple surface damaged (up to 3/4 of the damaged surface area)
4	76-100 per cent nut or apple surface damaged (more than 3/4 of the damaged surface area)

The recorded data were converted into percent incidence on the basis of formula given below,

Table 2. Efficacy of insecticides for management of thrips in cashew (2015-16 to 2017-18)

Treatment	Mean per cent incidence of thrips			
	2015-16	2016-17	2017-18	Pooled
T ₁ Emamectin Benzoate 5 SG @ 0.2 g/L	6.08 (14.19)	3.20 (10.20)	4.80 (12.56)	4.69 (12.31)
T ₂ Acetamiprid 20 SP @ (0.5 g/L)	2.88 (9.66)	1.28 (6.26)	2.72 (9.12)	2.29 (8.34)
T ₃ Flonicamid 50WG @ (0.3g/L)	6.08 (14.21)	4.64 (12.42)	4.16 (11.59)	4.96 (12.74)
T ₄ Deltamethrin 2.8 EC @ 0.9 ml /L	5.28 (13.20)	2.24 (8.44)	3.52 (10.72)	3.68 (10.78)
T ₅ Standard check	3.84 (11.69)	2.88 (9.63)	4.32 (11.95)	3.68 (11.09)
T ₆ Buprofezin 25SC @ 2ml/L	8.01 (16.38)	1.79 (7.54)	4.32 (11.95)	4.70 (11.95)
T ₇ Untreated control	12.01 (20.21)	8.65 (17.04)	7.05 (15.32)	9.23 (17.52)
S.Em	0.635	0.583	0.615	0.864
CD at 5%	1.92	2.80	1.86	2.62

- Figures in parenthesis are arcsine transformed values

During 2016-17, the treatment T₂ (Acetamiprid20SP @0.5 g/L) was found to be the best for the management of thrips with the least incidence of thrips (1.28%) but it was at par with the treatment T₅ (Buprofezin25 SC@2ml/L) and T₄ (Deltamethrin 2.8 EC @0.9ml/L). During 2017-18, the treatment T₂ (Acetamiprid20 SP @ 0.5 g/L) was found the most effective treatment for management of thrips with least incidence (2.72%) however, it was at par with the treatment T₄ (Deltamethrin2.8 EC @ 0.9ml/L). From the pooled mean of three years, it is evident that, the treatment T₂ (Acetamiprid 20 SP @0.5 g/L) was found to be the most effective treatment for the management of thrips with least incidence of thrips (2.29%), however, it was at par with the treatment T₄ (Deltamethrin2.8 EC @ 0.9ml/L).

The present finding are in close agreement with those of Anamika Kar (2017) who reported acetamiprid as effective insecticide for the management of cashew pests. Samota (2017) reported the efficacy of acetamiprid against *Scriptothrips dorsalis* in chilli. Many earlier

research workers have studied the efficacy of different insecticides for management of cashew thrips. Ayyanna *et al.* (1985), reported the efficacy of phosalone and diamethoate against cashew thrips. Mahapatro (2008), Navik *et al.*, (2016) and Zote *et al.*, (2017a) reported the efficacy of lambda cyhalothrin against cashew thrips. Godase and Bhole (2002) reported the efficacy of permethrin, cypermethrin and deltamethrin against cashew thrips. Jalgaonkar, *et al.*, (2011) reported the efficacy of lambda cyhalothrin and triazophos against cashew thrips.

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