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A study of farmers knowledge and perception regarding cashew stem and root borer damage and it's management in Konkan region of Maharashtra

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Abstract

Cashew stem and root borer (*Plocaederus ferrugineus* L.) is one of the most important pests of cashew. The incidence of cashew stem and root borer mostly remains unnoticed by cashew growers during initial stage as it is hidden and initial symptoms are inconspicuous leading to loss of yielding trees resulting in reduction of cashew productivity. The intensity of incidence depends upon management practices. A survey was conducted in the year 2017-18 to know the farmers knowledge and perception regarding cashew stem and root borer (CSRB) incidence, its nature of damage and management practices followed by them. The incidence of CSRB was found less in Dodamarg taluka where there is more knowledge regarding different aspects of CSRB. From the results it can be concluded that the farmers knowledge regarding cashew stem and root borer, its nature of damage and management technology developed by Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli plays an important role in management of cashew stem and root borer.

Keywords: Cashew, pest, stem and root borer, management, *Plocaederus ferrugineus* L.

Introduction

Cashew (*Anacardium occidentale* L.) is an important cash crop grown in Konkan region of Maharashtra. The productivity of cashew is influenced by many factors; out of which increased incidence of insect pests is one of the major constraint. In India, more than sixty insect species have been recorded causing damage to cashew crop (Pillai *et al.*, 1976)^[5]; out of which cashew tea mosquito bug (*Helopeltis antonii* Signoret), stem and root borer (*Plocaederus ferrugineus* L.) and thrips (*Scirtothrips dorsalis* Hood) are the major pests of cashew in Maharashtra (Dumbre *et al.*, 1987)^[2]. Cashew stem and root borer (CSRB) is one of the most important pests of cashew in Konkan region of Maharashtra. Three species of CSRB are found to infest cashew *viz.*, *Plocaederus ferrugineus* L., *P. obsesus* and *Batocera rufomaculata* DeGeer (Godase *et al.*, 2004)^[3]. Out of these, *Plocaederus ferrugineus* is predominant species (Senguttuvan and Mahadevan, 1999)^[7] and it is capable to kill about 5 percent productive trees every year (Mohapatra, 2004)^[4]. About 10 percent trees are infested annually by this pest (Sundararaju and Bakthavatsalam, 1994)^[8]. The larvae of this pest feed on the vital bark of stem and primary roots of cashew trees, thereby, causing hindrance in the flow of plant sap leading to loss of vigor, yellowing of leaves, leaf fall and drying of twigs followed by gradual death of infested cashew trees (Ayyanna and Ramadevi, 1986)^[1]. The incidence of CSRB mostly remains undetected by cashew growers during initial stage, as the grub remains concealed inside the infested stem resulting in death of the tree and thus, the productivity is reduced. The chances of protecting the infested trees are more if the incidence is noticed in early stage (Sahu and Sharma, 2008)^[6].

Experts feel that awareness about CSRB infestation may help to initiate the management strategies in time. Therefore, the present survey was undertaken to find out the intensity of infestation, farmers knowledge regarding cashew stem and root borer, nature of damage, use of recommended technology given by Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli (Agriculture University) and finally to formulate appropriate extension training strategies.

Methodology

A roving survey was conducted in the year 2017-18 from six major cashew growing talukas of Sindhudurg district of Maharashtra. Twenty five cashew orchards were selected in each taluka randomly for collecting the information. In all, total 250 cashew orchards were surveyed to know the percent infestation of CSRB in Sindhudurg district.

The data were collected through personal interviews using a pre-tested questionnaire to have a clear understanding regarding farmers knowledge about CSRB, its nature of damage, recommended control measures and adoption of control measures recommended by Agriculture University (Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli). The data, thus generated were compared among the different talukas to draw meaningful inferences.

Table 1: Farmers Knowledge regarding CSRB in different talukas of Sindhudurg district (%)

S. No	Particular	Farmers knowledge regarding different aspects of CSRB (%)						
		Dadamarg	Kudal	Vengurla	Kankavli	Vaibhavwadi	Malvan	Mean
1	Knowledge regarding CSRB	88.00	48.00	80.00	52.00	72.00	64.00	67.33
2	Knowledge regarding nature of damage	88.00	32.00	68.00	40.00	56.00	48.00	55.33
3	Knowledge regarding recommended technology	68.00	20.00	56.00	28.00	40.00	36.00	41.33
4	Adoption of recommended technology	52.00	0.00	40.00	4.00	16.00	12.00	20.67
	Average	74.00	25.00	61.00	31.00	46.00	40.00	

Table 2: Intensity of CSRB in different talukas of Sindhudurg district

S. No.	Village	No. of trees inspected	Trees found infested by CSRB	Intensity (%)
1	Dodamarg	5240	168	3.20
2	Kudal	5906	963	16.30
3	Vengurla	7150	380	5.31
4	Kankavli	2055	315	15.32
5	Vaibhavadi	1585	150	9.46
6	Malvan	2185	215	9.84
		Average intensity		9.90

Result and discussion

The data collected from different talukas regarding knowledge of CSRB, its nature of damage, management practices recommended by Agriculture University and their adoption are presented in Table 1. From the data it is revealed that the knowledge recording CSRB incidence in different talukas ranged between 48 to 88 percent with an average of 67.33 percent. The maximum knowledge regarding CSRB was observed in Dodamarg taluka (88.00%) and the least knowledge was observed in Kudal taluka (48.00%).

Regarding nature of damage of CSRB, it was observed that the knowledge ranged between 32 to 88 percent in different talukas with the average of 55.33 percent. The maximum knowledge regarding nature of damage of CSRB was observed in Dodamarg taluka (88.00%) and the least knowledge was found in Kudal (52.00%).

Among the different talukas, the knowledge regarding recommended technology ranged between 20 to 68 percent with the average of 41.33 percent. In Dodamarg, there was maximum knowledge regarding the recommended technology for management of CSRB (68.00%) and the least knowledge was observed in Kudal taluka (20.00%).

The data on adoption of recommended technology ranged from 20 to 52 percent in different talukas with the average of 41.33 percent. The maximum adoption was found in Dodamarg (52.00%). However, zero adoption was observed in Kudal taluka.

From the above results, it is seen that in Dadamarg taluka, there was maximum knowledge regarding CSRB (88.00%), its nature of damage (88.00%), recommended technology (68.00%) and also, the adoption of recommended technology was found more in Dodamarg taluka (52.00%).

From the average data of knowledge of different aspects of CSRB and adoption of technology, it was observed that in Dodamarg taluka there was maximum knowledge and adoption (74.00%) followed by Vengurla taluka (61.00%) and

the least knowledge and adoption was observed in Kudal (25.00%).

From the mean data, it is seen that about 67.33 percent cashew growers of Sindhudurg district have knowledge of CSRB, 55.33 percent growers know the nature of damage of CSRB and 41.33 percent growers know the technology recommended by Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli for management of CSRB. However, only 20.67 percent cashew growers actually adopt the technology in field for management of CSRB.

The data on intensity of CSRB in different talukas is presented in Table 2. From the data it is revealed that in Kudal taluka the incidence of CSRB was more (16.30%) followed by Kankavli (15.32%). The least incidence of CSRB was observed in Dodamarg taluka (3.20%) followed by Vengurla (5.31%). The average incidence of CSRB in Sindhudurg district was 9.90 percent. This data clearly indicate that where there is more knowledge of different aspects of CSRB, there is less incidence of CSRB and where there is less knowledge, there is more incidence of CSRB.

These results are more or less in conformity with the results of Godase *et al.*, (2004)^[3] who reported about 8 to 10 percent incidence of CSRB from Sindhudurg district.

Conclusion

From these results, it can be concluded that the knowledge regarding different aspects of CSRB plays an important role to minimize the incidence of CSRB. Therefore, it is suggested to organize extension programmes like trainings, group discussions, farmers rallies to create awareness regarding CSRB in cashew growing belts of Sindhudurg district which will result to improve the adoption of recommended technology developed by Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli.

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