

SHORT NOTE

INCIDENCE OF BANANA PSEUDOSTEM WEEVIL, *Odoiporus longicollis* (Olivier) IN SOUTH KARNATAKA

M. THIPPAIAH, C.T. ASHOK KUMAR, C. SHIVARAJU and
A.K. CHAKRAVARTHY

Department of Agricultural Entomology, UAS, GKVK, Bangalore - 560065, India
Email: mthippaiah_ent@rediffmail.com

India is the largest producer of banana and plantain in the world. Several insect pests, diseases and nematodes hinder banana production. Of them, insect pests play a major role in reducing yield and quality. More than 180 species of insect pests have been recorded on banana world over (Simmonds, 1966), of which 30 are major (Wadhi and Batri, 1964). In India, nineteen species infest banana (Padmanaban *et al.*, 2002). Of them the pseudostem weevil, *Odoiporus longicollis* Olivier (Coleoptera: Curculionidae) is gaining importance as a serious pest causing heavy losses to the grower.

A survey was conducted during 2003-2004, in 15 southern districts of Karnataka to know the distribution of the pseudostem weevil. In each district, 10 banana gardens were randomly selected and the number of damaged plants in each garden was recorded and percent infestation (plants) was worked out for each location and variety. Based on the per cent plant infestation, damage was categorized as minor (1-5%), moderate (>5-10%) and major (> 10%). Also in each garden, the split-pseudostem pieces (30 cm length) were placed and covered with trash beside the banana plants. Ten such pieces were placed in each garden to attract the weevils. This was done to get an index of the density of weevils in the garden. The weevil counts were categorized based on the following scale: 1-5 weevils /

pseudostem piece = low; >5 - 10 = moderate density; > 10 = high density following Viswanath (1976).

Besides recording the weevil incidence, ten banana varieties, popularly cultivated in fifteen southern districts were screened by recording the extent of damage. Monthly observations were recorded throughout the year at each location and mean per cent damage (Table 1) was worked out for each variety. The data sets were subjected to statistical analysis.

The survey revealed the occurrence of banana pseudostem weevil in all the fifteen districts of south Karnataka (Table 1). In Shimoga and Mandya, the pseudostem weevil was the major pest on banana incurring heavy losses. In ten districts, the weevil was recorded as a moderate pest on banana (>5-10 %). In rest of the districts, pseudostem weevil was recorded as a minor pest (0 – <5). The weevil distribution and severity of infestation was not related to geographical location. In Mandya and Shimoga, dwarf Cavendish was the major banana variety cultivated. So also in Davangere, Chikamanagalur and Kolar. In addition to dwarf Cavendish, Ellakki variety was also being cultivated. So the weevil infestation may be influenced by the varieties cultivated in each district. The weevil infestation was wide spread and was severe in South

Karnataka as twelve of fifteen districts surveyed, had the weevil incurring economic losses to the growers.

As a large number of plants (455-14810) depending on the variety were observed across different districts, the infestation level and the pattern reflects the current scenario of banana weevil infestation in South Karnataka. In Shimoga, highly susceptible variety Chandrabale that recorded 17.66 per cent weevil infestation was cultivated. As Mysore bale in Dhakshina kannada and Nendran and Boodabale cultivated in Udupi were also susceptible and recorded over nine per cent infestation (Table 1). When average infestation for each variety across different locations was worked out, Chandrabale was the most susceptible banana variety and Rasabale was the least susceptible variety (5.68%). The range in infestation at five districts of Rasabale varied from 3.75 per cent in Kodagu to 8.75 per cent in Udupi. There were significant differences between Chandrabale and Rasabale in their susceptibility to weevil (Table 1).

Observations on weevil distribution pattern district-wise revealed that infestation was maximum (17.66%) on Chandrabale in Shimoga while the least (1.60%) was recorded on Booda bale in Kodagu (Table 1). The variety Poovan in Mandya (12.5%), Mysore (6.00%) and Chamarajnagar (4.23%) was found infested with pseudo stem weevil. The variety Nendran recorded 15.71 per cent infestation and the infestation was the least on Natti bale (4.01%) (Table 1). Similar observations were made by Isahaque (1978) in Assam. Accordingly the incidence was recorded on all commercial varieties of banana viz., Malbhog, Chenichampa, Monohar, Jahajee, Kaskal and Bhimkal. In a study Visalakshi *et al.* (1989) reported that the varieties Nendran and Red kappa were highly susceptible. Jayanthi and Verghese (1999) reported 100 percent loss on cultivar Elakki. The weevil also attacked other banana varieties such as

Karpuravalli and Red banana and the highest level of infestation was noticed on Nendran followed by Red banana (Padmanaban and Sundaraju (1999) and Anitha (2004) also recorded the intermediate level of infestation on the clones of Palayankodan and Poovan.

Based on the number of weevils attracted to the pseudo stem pieces, Tumkur and Hassan districts recorded moderate weevil incidence and Mandya and Davangere low incidence. However, the per cent plant infested and pseudo stem weevils attracted are not comparable as number of weevils attracted depends on the insect life stage, variety, plant phenophase and other factors. However, it can be inferred that pseudostem weevil density was high in and around Bangalore and area -wide containment of the pest is required.

REFERENCES

- Anitha, N., 2004. Clonal susceptibility and age preference of banana pseudostem weevil, *Odoipous longicollis* Oliv. *Insect Environment*, **10**(3): 132-134.
- Isahaque, N. M. M., 1978. A note on the incidence of *Odoiporus longicollis* Oliv on banana in Assam. *Pesticides*, **12**(6): 22-24.
- Jayanthi, P. D.K. and Verghese, A., 1999. Report of the occurrence of banana weevils in Bangalore. *Insect Environment*, **4**(4): 153.
- Padmanaban, B., Rajeswari, R. and Sathiamoorthy, S., 2002. Banana pseudo stem trapping technique for management of banana weevils (Coleoptera: Curculionidae), *Global conference on banana and plantain*, 28-31, October, 2002, Bangalore, pp.187.
- Padmanaban, B. and Sundararaju, P. 1999. Occurrence of banana weevil borers (Coleoptera:Curculionidae) in Tamil Nadu. *Insect Environment*, **5**(3): 135.

Table 1. Infestation of pseudostem weevil in different banana varieties in south Karnataka

District	Varieties (% of Infestation)*									
	Elakki	Dwarf cavendish	Poovan	Rasa bale	Chandra bale	Nattibale	Robusta	Nendran	Booda bale	Mysore bale
Bangalore Rural 13° 26' N, 77° 43'E	7.67 (4330)	10.34 (4710)	-	-	-	-	-	-	-	-
Bangalore Urban 12° 58' N, 77° 38'E	6.21 (8655)	7.74 (1885)	-	-	-	-	-	-	-	-
Mandya 13° 34' N, 77° 10'E	9.03 (5620)	9.04 (2009)	12.50 (900)	-	-	-	-	-	-	-
Chitradurga 14° 30' N, 75° 26'E	6.28 (6410)	0.00 (1860)	-	-	-	-	-	-	-	-
Davanagere 14° 30' N, 75° 58'E	3.30 (7940)	4.35 (6650)	-	5.55 (900)	-	-	-	-	-	-
Tumkur 13° 20' N, 77° 08'E	10.55 (6390)	3.68 (3385)	-	-	-	-	-	-	-	-
Hassan 13° 01' N, 76° 10'E	6.49 (8200)	6.97 (1770)	-	-	-	-	-	-	-	-
Shimoga 13° 56' N, 75° 38'E	-	7.50 (800)	-	-	17.66 (3210)	9.44 (6980)	-	-	-	-
Chikmagalur 13° 18' N, 75° 48'E	6.31 (2820)	1.79 (5070)	-	-	4.08 (14810)	-	-	-	-	-
Dakshina Kannada 12° 57' N, 75° 50'E	-	-	-	4.29 (800)	-	5.41 (4880)	2.71 (920)	-	-	9.44 (1700)
Udupi 13° 20' N, 74° 45'E	-	-	-	8.75 (800)	-	4.01 (7540)	9.73 (750)	15.71 (700)	11.23 (455)	-
Kodagu 12° 56' N, 75° 47'E	3.51 (5950)	-	-	3.75 (2790)	-	-	-	7.41 (4165)	1.60 (1880)	-
Mysore 12° 18' N, 76° 42'E	4.32 (3240)	-	6.00 (12200)	-	-	-	-	6.38 (1105)	-	4.40 (8110)
Chamarajnagar 11° 56' N, 77° 00'E	7.33 (9310)	-	4.23 (2600)	6.06 (980)	-	-	-	-	-	2.81 (3200)
Kolar 13° 18' N, 78° 11'E	4.65 (5470)	6.33 (8220)	-	-	-	-	-	-	-	-
Mean infestation	6.30	6.67	7.57	5.68	17.66*	5.73	6.22	9.03*	6.41	5.55

Based on number of plants infested * statistically significant at 5% by t' test at 1 d.f.
 Figures in parentheses indicate number of plants observed/variety/location

- Simmonds, N.W. 1966. Bananas, IInd edition Longmans Green and Co., Ltd. London, PP. 512.
- Visalakshi, A, Nair, G. M. Beevi, S. N. and Amma, A. M. K. 1989. Occurrence of *Odoiporus longicollis* (Olivo) (Coleoptera: Curculionidae) as a pest of banana in Kerala. *Entomon*, **14**(3): 367-368.
- Viswanath, B. N., 1976. Studies on the biology, varietal response and control of banana rhizome weevil, *Cosmopolites sordidus* (Germar) (Coleoptera: Curculionidae). Ph.D. Thesis, University of Agricultural sciences, Bangalore. pp.152.
- Wadhi, S.R. and Batri, H. N., 1964. Pests of tropical and sub tropical fruit trees. pp. 227-260. N.C. Pant (ed.) Entomology in India. Entomological Society of India, New Delhi.