

THRIP**MANGO****MANAGEMENT OF MANGO THRIP COMPLEX****B. K. GAWADE¹, A. Y. MUNJ² AND A. L. NARANGALKAR³**¹Subject matter specialist, Krishi Vigyan Kendra, Kirlos. ²Jr. Entomologist, Regional Fruit Research Station, Vengurle.³Head, Department of Entomology, College of Agriculture, Dapoli.**ABSTRACT**

Mango thrip is becoming a serious pest in Maharashtra state, particularly in Konkan region. Three species of thrips viz. *Scirtothrips dorsalis*, *Thrips flavus* and *Thrips hawainsis* are found to infest mango inflorescence and immature fruits. They lacerate the external tissues of inflorescence, flower buds, flowers and fruits. As a result the fruit setting gets badly hampered as well as the fruit quality is deteriorated.

The management trials were conducted through Krishi Vigyan Kendra, Kirlos, Dist. Sindhudurg under the technical guidance of Regional Fruit Research Station, Vengurle, Dist. Sindhudurg (Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli) during 2012-13 at three different locations in Sindhudurg District. Seven different treatments including Spinosad 45 SC recommended by Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli for management of mango thrips were included in the trial. The results indicated the effectiveness of Spinosad 45 SC and Fipronil 5 SC + Azadirachtin 10000 ppm.

Introduction

Mango is an important fruit crop of Maharashtra and Alphonso is a leading variety of mango grown in konkan region of Maharashtra. More than 50 insect pests have been recorded on mango; and thrips is one of them (Butani, 1979). In konkan region of Maharashtra three species of thrips viz. *Scirtothrips dorsalis*, *Thrips flavus* and *Thrips hawainsis* have been recorded (Anonymous, 2009). Recently, thrips have been found to infest mango fruits in addition to inflorescence. The nymphs and adult thrips lacerate the outer tissue of the rachis of inflorescence, flower buds and flowers. As a result, grey coloured streaks develop on the panicles and there is flowers drop. Also the fruit setting gets badly affected (Chavan *et al.*, 2009). The thrips lacerate the outer layer of fruits which results in development of grey coloured streaks on the fruits. During severe infestation the whole fruit becomes grayish which looks shabby and cannot fetch good price in market.

As the new species of thrips have been reported to infest mango fruits, it has been decided to undertake the field trials on farmers

fields with some newer pesticides and their tank mixture with Azadirachtin at three locations of Sindhudurg district through Krishi Vigyan Kendra, Sindhudurg during the flowering and fruiting season of 2012-13.

Material and Methods

The management trials were conducted at farmers fields at three locations in Sindhudurg district viz. Mithbao, Tal. Deogad; Devali, Tal. Malvan and Vengurle, Tal. Vengurle through the Krishi Vigyan Kendra, Kirlos, Tal. Malvan, Dist. Sindhudurg under the guidance of Regional Fruit Research Station, Vengurle, Dist. Sindhudurg (Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli), Maharashtra during the mango season of 2012-13. The trial was conducted in RBD with three replications and seven treatments. The first spray was undertaken fifteen days after initiation of panicles and the subsequent two sprays were given at an interval of fifteen days. The treatment details is as given below.

T₁ : Fipronil 5% SC (15 ml) + Azadirachtin 10,000 ppm (30 ml) per 10 lit of water.

Table
Effect of different treatments on thrip population (Pooled data of three locations)

Treatment	Thrip population per panicle at			
	Pre-count	1 DAS	5 DAS	10 DAS
T ₁	16.73 (04.21)*	08.04 (03.00)	00.48 (01.21)	00.38 (01.17)
T ₂	16.18 (04.14)	07.83 (02.97)	01.62 (01.62)	01.50 (01.58)
T ₃	16.50 (04.18)	07.94 (02.98)	00.76 (01.32)	00.72 (01.31)
T ₄	16.39 (04.17)	08.08 (03.01)	02.56 (01.88)	02.37 (01.83)
T ₅	16.16 (04.14)	07.83 (02.97)	00.96 (01.40)	01.00 (01.42)
T ₆	19.72 (04.55)	07.96 (02.99)	00.48 (01.21)	00.42 (01.19)
T ₇	17.05 (04.25)	15.22 (04.02)	12.92 (03.72)	13.87 (03.85)
S.E. ±	-	-	00.02	00.03
C.D. @ 5%	N.S.	N.S.	00.06	00.08

*Figures in parenthesis indicates $\sqrt{n+1}$ transformed data.
 DAS - Days after spray.

T₂ : Dimethoate 30% EC (15 ml) + Azadirachtin 10,000 ppm (30 ml) per 10 lit of water.

T₃ : Spinosad 45% SC (2.5 ml) + Azadirachtin 10,000 ppm (30 ml) per 10 lit of water.

T₄ : Clothianidin 50% WDG (1.2 gm) + Azadirachtin 10,000 ppm (30 ml) per 10 lit of water.

T₅ : Thiamethoxam 25% WG (2 gm) + Azadirachtin 10,000 ppm (30 ml) per 10 lit of water.

T₆ : Spinosad 45% SC (2.5 ml) per 10 lit of water.

T₇ : Control

At every location uniformly flowered mango trees were selected randomly and on each tree ten panicles were labeled. The pre-treatment observations were recorded a day before spray and the post-treatment observations were recorded a day, 5 days and 10 days after each spray and the data of three sprays were pooled. The data of all the three locations were pooled and transformed into $\sqrt{n+1}$ transformation and then analyzed.

The pooled data of thrip population recorded in different treatments is given in the Table. The observations recorded a day after application of insecticides revealed that there were no significant differences among the treatments.

Observations recorded five days after application of insecticides revealed that the treatments T₁ (Fipronil 5% SC 15 ml + Azadirachtin 10,000 ppm 30 ml per 10 lit of water) and T₆ (Spinosad 45% SC 2.5 ml/10 lit of water) were found most effective and significantly superior over all other treatments. From the observations recorded 10 days after application of insecticides, it is seen that the treatment T₁ (Fipronil 5% SC 15 ml + Azadirachtin 10,000 ppm 30 ml per 10 lit of water) was the most effective treatment followed by T₆ (Spinosad 45% SC 2.5 ml/10 lit of water) which were at par with each other and significantly superior over rest of the treatments.

These results in confirmation with Munj *et al.* (2012) who reported the efficacy of Spinosad 45 SC against mango thrips.

Conclusion

From the present results it can be concluded that for control of new thrip complex of mango, the spraying of Fipronil 5% SC 15 ml + Azadirachtin 10,000 ppm 30 ml per 10 lit of water or Spinosad 45% SC 2.5 ml per 10 lit of water are effective.

Acknowledgement

The present study was conducted through Krishi Vigyan Kendra, Kirlos with the technical guidance of Regional Fruit Research Station, Vengurle, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli which was funded by Agriculture Technology Management Agency (ATMA), Sindhudurg. The author is thankful to Dr. Balasaheb Swant Konkan Krishi Vidyapeeth, Dapoli for providing the technical help. Also, the author is thankful to Agriculture

Technology Management Agency (ATMA), Sindhudurg for providing the financial assistance for the study.

Bibliography

Anonymous, 2009. Losses caused by mango thrips. A report of Research Review Committee Meeting of Plant Protection Division of Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli, M.S.

Anonymous, 2010. Management of mango thrips. A report of Research Review Committee Meeting of Plant Protection Division of Dr. B. S. Konkan Krishi Vidyapeeth, Dapoli, M.S.

Butani, 1979. Insect and Fruits. Periodical Expert Book Agency, Delhi.

Chavan, S. A., Dalvi, M. B., Munj, A. Y., Patil, P. D. and Salvi, B. R. 2009. Mango Plant Protection. Mango Thrips. pp. 5.

Munj, A. Y., Jalgaonkar, V. N., Salvi, B. R. and Narangalkar, A. L. 2012. Seasonal incidence and control of mango thrips. *Pestology* 36(12).

Invasive plants threaten wildlife

Wild growth of invasive alien plants such as *Senna spectabilis* (calceolaria shower), *Lantana*, *Eupatorium* and *Parthenium* is posing a threat to wildlife and indigenous plants in the forest areas of the Nilgiri Biosphere Reserve, including the Wayanad Wildlife Sanctuary (WWS), a major habitat of Asiatic elephants in the country.

"The spread of *Senna spectabilis* is more dangerous than other exotic species owing to its quick growth," Narendranath Veluri, North Wayanad Forest Divisional officer told.

"Nearly 3,000 sq km-stretch of the region, including the Wayanad Wildlife Sanctuary, North and South Wayanad forest divisions and the adjacent Muthumalai, Bandipur and Nagarhole tiger reserves, have wild growth of the invasive plant," he said.

An ongoing survey being conducted by the Wildlife Trust of India (WTI), in association with the Forest Department, shows that the plant is widely distributed in the Muthanga and Tholpetty range of forests under the Wayanad Wildlife Sanctuary.

"An adult tree would grow up to 15 to 20 metres in a short period of time and its quick spread causes dearth of food for the wildlife population, especially herbivores. This would worsen the man-animal conflict in the district," said N. Badusha, president, Wayanad Prakruthi Samrakshana Samiti.

C.K. Vishnudas, a wildlife researcher, said no part of the tree had proved to be edible to wildlife.

It would not allow the growth of other indigenous species of trees or even grass under its thick canopy.

"It is suspected that the spread of the exotic species in the region began with a social forestry programme of the department in the Nineties. Eradication of the plant would not be easy, but it can be done with the active participation of environmental organisation, National Service Scheme volunteers and the public," Mr. Badusha said.

Roy P Thomas, Wildlife Warden, WWS, said the Forest Department was preparing to execute a project with the technical support of the Kerala Forest Research Institute, Peechi, and the WTI to eradicate the plant from the sanctuary.

[Source: E.M. Manoj, *The Hindu*]