The Scientific Temper
July, 2010; No.1: pp125-126

Academy of Innovative Research
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EFFICACY OF *TRICHOGRAMMA CHILONIS* ISHII FOR THE MANAGEMENT OF *CHILO AURICILIUS* ON SUGARCANE IN DIFFERENT SUGAR MILL AREAS OF THE UDHAM SINGH NAGAR & UTTAR PRADESH.

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ABSTRACT

The Large-scale demonstrations of effectiveness of *Trichogramma chilonis Ishii* were carried out in different sugarcane mill areas of the state for the control *Chilo auricilius* Dudgeon. The demonstrations were carried out over an area of 2000 and 1400 ha during 2006 and 2007, respectively. *T. chilonis* was released @50,000 per ha at 10 days interval during July to October. The releases of the parasitoid proved very effective and reduced of *C. auricilius* by 55 to 60 percent.

KEY WORDS: Biocontrol based IPM, *Chilo auricilius*, sugarcane, *Trichogramma chiloni*

INTRODUCTION:

Sugarcane is an important crop of Udham singh Nagar (Uttrakahnd and border area of Uttar Pradesh), grown over an area of 1, 43,000 hectares during 2006-2007 with an average cane yield of 550 quintals per hectare. Sugarcane is damaged by many borers and the stalk borer, *Chilo auriculius* Dudgeon (Lepidoptera: Crambidae) is amount the serious pests and no chemical control measures are available against this pest. The borer apart from reducing yield affects the sugar recovery adversely. Only the cultural and mechanical control measures are available for its control. Releases of *Trichogramma chilonis Ishil* @ 50,000 per hectare at 10 days interval during July to October have proved very effective Shenhmar et al., 1997) Shahid et al. (2001) demonstrated the efficacy of *T. chilonis* at farmers fields over 94 hectares and reported reduction is damage of this pest by 55.5 percent. Demonstrations in large areas were conducted in collaboration with sugar mills of the state to show effectiveness of biocontrol method to the farmers of the respective mill area.

MATERIALS AND METHODS:

The large-scale field demonstration using *T. chilonis* were carried out *against C. auricilus* during 2006 and 2007. During, three sugar mills namely. Kiccha Co-op Sugar Mills Ltd. Kiccha; Gadarpur Co-op Sugar Mills Ltd. Gadarpur and majhola Sugar and Allied Industries, Majhola were involved covering 2000 hectare area. During 2007, an area of 1400 ha of only two mills at, Kiccha Co-op Sugar Mills Ltd. Kiccha; Gadarpur Co-op Sugar Mills Ltd. Gadarpur was covered. The egg parasitoid. *T. Chilonis* was released @ 50,000 per ha at 10 days interval during July to October. The observations on the incidence of stalk borer were recorded from release fields and the control from 10 locations in each mill area.

RESULT AND DISCUSSION

The data presented in Table-1 revealed that during 2006, the incidence of stalk borer in release fields at Kichha, Gadarpur and Majhola was 1.36, 4.1 and 12.5 percent, respectively, as compared to 6.03, 11.2 and 20.2 percent, respectively in control. The mean incidence of borers at there mill areas was 9.58 percent in release fields as compared to 12.47 percent in control thus the reduction in damage over control was 52.04 percent. During

Table: 1 Effectiveness of *T. Chilonis* on sugarcane in mill areas of Udham Singh Nagar (U.K &U.P.) during 2006

Sugar mill	Area (ha)	Incidence of stalk borer (%)		Reduction in damage over control (%)
		Release area	Control area	
Kiccha Co-op Sugar Mills Ltd. Kiccha(U.K)	800	1.36	6.03	77.44
Kiccha Co-op Sugar Mills Ltd. Kiccha(U.K.)	600	4.10	11.20	63.39
Majhola Sugar and Allied Industries, Majhola(U.P.)	600	12.50	20.20	38.11
Total/ Mean	2000	5.98	12.47	52.04

T. chilonis released @50,000/ha at 10 days interval from July to October.

Table: 2 Effectiveness of *T. Chilonis* on sugarcane in mill areas of Udham Singh Nagar (U.K &U.P.) during 2007

Sugar mill	Area Covered (ha)	Incidence of stalk borer (%)		Reduction in damage over control (%)
		Release area	Control area	
Kiccha Co-op Sugar Mills Ltd. Kiccha(U.K.)	600	6.21	16.74	62.90
Kiccha Co-op Sugar Mills Ltd. Kiccha(U.P.)	800	3.16	6.69	52.76
Total/ Mean	1400	4.68	11.71	60.03

2007, the incidence of stalk borer in release fields of Kichha and Gadarpur was 6.21 and 3.16 percent, respectively as compared to 16.74 and 6.69 percent in control, respectively (Table 2). The mean incidence of stalk borer was 4.68 percent in release field as compared to 11.71 percent in control resulting in 60.63 percent reduction in damage over control.

It was observed that 11-21 releases of *T. chilonis* @50,000 per hectare during July to October could reduce the incidence of stalk borer by 55 to 60 percent. Earlier, Shahid et al. (1996) Shenhmar andBrar (1996) and Shenhmar et al. (1997) recommended the releases of *T. chilonis* for the control of *C. auricilius* on sugarcane. Misra et al (1986) reported that releases of *T.chilonis* and *T. japonicum* @50,000 per hectare per reduction in borer intensity. Similarly Brar et al. (2001) demonstrated the effectiveness of *T. chilonis* over an area of 94 hectares.

Acknowledgements

The authors are thankful to professor & Head, Department of Entomology, Pantnagar University of Agriculture and Technology, Pantnagar and Director DIBER Haldwani, for providing facilities, and Management of the three Sugar Mills for the facilities.

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