

Efficiency of *Trichogramma australicum* Girault in Parasitising Sugarcane Stem borer eggs under Laboratory condition

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Sugarcane stem borer, *Chilo tumidicostalis* Hampson is one of the major sugarcane pest in Bangladesh. Depending upon the level of infestation of stem borer, cane loss by weight ranges from 0.30 to 7.33 % and consequently sugar loss by weight ranges from 0.86 to 18.0 % (Miah *et. al.* 1980). Mechanical and chemical control methods were not adopted in large scale by the growers to control sugarcane stem borer and led to the necessity of alternative methods of controlling this pest (Miah *et.al.* 1986).

Trichogramma australicum Girault (Trichogrammatidae, Hymenoptera) was found established in sugarcane fields against sugarcane stem borers in the Philippines (Alba *et. al.* 1981). In the South Africa *T. australicum* was proved efficient to control Eldana borer (Anon. 1983). In Taiwan *T. australicum* is commercially produced and timely released in the field to control *Chilo infuscatellus* Snellen since 1972 (Miah *et. al.* 1986).

Trichogramma australicum was imported at Sugarcane Research & Training Institute from the Philippines in July 1984 and since then the parasite had been reared in the laboratory on the eggs of *Corcyra cephalonica* Stainton. The *Corcyra* was again reared on wheat in small chambers. Stem borer egg masses were made available by rearing stem borers in net boxes. Sugarcane plants infested by stem borer were chopped and placed inside those net boxes alongwith potted sugarcane plants. When moths emerged out from the infested canes they mated and laid eggs on green leaves of the potted plants. These egg masses were clipped off from the plant and fixed with paper strips and inserted inside the test tube containing freshly emerged *T. australicum* to allow parasitisation. When parasitisation was over, egg masses were kept in test tubes. Number of parasites emerged and stem borer larvae hatched were counted. Discrimination of parasitised and unparasitised eggs were made under microscope. Before microscopic studies, the egg masses were dipped into 5 % KOH solution. A total of 20 egg masses of stem borer containing 2166 eggs were studied during the months of August and September, 1986.

The Table 1 shows that the range of parasitisation was 77.78 to 100.00 %. The mean rate of parasitisation was 95.38 %. Miah, *et.al.* (1986) studied the rate of parasitisation of stem borer eggs in captivity by *T. australicum* and *T. chilotraea* where the rates of parasitisation were 97.58 and 23.61 % respectively. In the present study the rate of emergence of parasite from parasitised eggs ranged from 20.17 to 90.11 %. Average rate of emergence of parasite from parasitised eggs was 75.13 %.

Table 1. Rate of stem borer egg parasitisation in captivity by *Trichogramma australicum* Girault, SRTI, 1986.

Egg Mass	Total number of eggs	Parasites emerged (no.)	Stem borer larvae hatched (no.)	Eggs containing parasites (no.)	Eggs containing stem borer larvae (no.)	Number parasitised eggs	Rate of Parasitisation (%)	Rate of parasite emergence (%)
1	2	3	4	5	6	7(3+5)	8	9
1.	117	65	18	26	8	91	77.78	71.43
2.	116	23	-	91	2	114	98.28	20.17
3.	177	147	13	17	-	164	92.66	89.63
4.	192	137	2	45	8	182	94.79	75.27
5.	104	57	4	43	-	100	96.15	57.00
6.	80	65	-	13	2	78	97.50	83.33
7.	112	86	5	21	-	107	95.54	80.37
8.	99	83	-	13	3	96	96.97	86.46
9.	110	89	3	18	-	107	97.27	83.18
10.	122	81	-	39	2	120	98.96	67.50
11.	114	72	3	39	-	111	97.37	64.86
12.	94	68	-	20	6	88	93.62	77.27
13.	111	71	-	36	4	107	96.40	66.36
14.	42	34	-	8	-	42	100.00	80.95
15.	93	82	2	9	-	91	97.85	90.11
16.	80	65	4	11	-	76	95.50	85.53
17.	68	54	3	11	-	65	95.59	80.60
18.	116	88	-	26	2	114	98.28	77.19
19.	123	89	4	30	-	119	96.75	80.18
20.	96	80	2	14	-	94	97.92	85.11
Total	2166	1536	63	530	37	2066	95.38	75.13

As *T.australicum* showed positive response in laboratory, it is, therefore, necessary to study their effectiveness in the field. The dose rate and frequency of release are also to be determined.

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