Analysis of bi values (Table 2), indicated that four variables namely dairy farming experience, social participation, training received, and dairy income are found to be significant in explaining the variation in entrepreneurial of rural dairy women as 't' values of these were found to be significant. Farmers with more experience in dairying and high rationality might be having better skills and business attitude and showing good entrepreneurial behaviour. These findings are inline with the findings of Patel (1990). Social participation and more exposure to training may be leading them to contribute significantly towards entrepreneurial behaviour.

A good dairy income reflects their economic activity and sound financial position which in turn revealing their significant entrepreneurial behaviour. These findings get support from the findings of Chauhan (1989).

From this it is clear that variables like dairy farming experience, social participation, training received, and dairy income were found to contribute significantly towards entrepreneurial behaviour. Government and extension organizations should make intensive efforts in the areas like educating the farmers, making them aware of advanced scientific dairy management practices which inturn will improve their management orientation, value orientation and thus lead them towards a high entrepreneurial behaviour.

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(Received : August 2001; Revised : January 2003)

Madras Agric. J. 90 (1-3) : 175-177 January-March 2003

Research Notes

Management of cotton stem weevil *Pempherulus affinis* Fist. using botanical pesticides

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A field trial was conducted at Chellampatty in Madurai district in randomized block design during summer 1999, an endemic area for cotton stem weevil, on 3-4 months old LRA 5166 cotton. EC formulations of neem (*Azadirachta indica*) (NO 80 EC), pungam (*Pongamia glabra*) (PO 80 EC) and madhuca (*Madhuca indica*) (MO 80 EC) were prepared using aromix as solvent and Unitax A and P as emulsifier. 'Bassina' a commercial formulation of *Beauveria bassiana* and imidacloprid was also used in addition to the farmer's practice. The spray

Table 1. Effect of NEO formulations on cotton stem weevil-I spray

Treatments	Pre-treatment	VII DAA		XV DAA	
		% damage	% reduction	% damage	% reduction
MO 80 EC 0.3%	28.66	33.33	15.96	27.33	39.61 (38.75)a
PO 80 EC 0.3%	33.00	35.66	21.44	29.00	48.90 (44.35)a
NO 80 EC 0.3%	31.33	32.66	19.49	26.66	48.31 (43.97)a
Bassina dust 0.5%	23.66	34.33	0.00	26.00	23.54 (24.01)a
Monocrotophos 36 WSC0.072%	23.33	27.33	16.47	20.33	44.74 (41.88)a
Imidacloprid 17.8 SP 0.0346%	25.66	29.00	20.50	19.33	54.04 (47.39)a
Neem cake 100 kg/ac	23.33	27.33	12.23	22.66	40.10 (38.93)a
Control	21.00	29.66	0.00	36.00	0.00 (0.296)b

Figures in the parenthesis are arcsine p; where p is per cent corrected reduction.
In a column means followed by the same letter(s) are not significantly different (P=-0.05) by DMRT

Table 2. Effect of NEO formulations on cotton stem weevil-II spray

Treatments	Pre-treatment	VII DAA		XV DAA	
		% damage	% reduction	% damage	% reduction
MO 80 EC 0.3%	27.33	28.66	1.07 (3.63)[b]	19.33	50.15 (45.08)a
PO 80 EC 0.3%	29.00	29.33	3.67 (8.94)[b]	20.66	50.17 (45.10)a
NO 80 EC 0.3%	26.66	27.33	6.46 (11.8)[b]	19.33	49.04 (44.45)a
Bassina dust 0.5%	26.00	30.66	2.85 (5.8)[b]	34.66	6.52 (13.63)b
Monocrotophos 36 WSC0.072%	20.33	16.66	21.78 (27.75)[a]	16.66	42.76 (40.83)a
Imidacloprid 17.8 SP 0.0346%	19.33	15.00	27.29 (31.45)[a]	16.00	42.95 (40.81)a
Neem cake 100 kg/ac	22.66	16.33	32.44 (34.63)[a]	17.00	47.18 (43.38)a
Control	36.00	38.00	0.00 (0.286)	51.00	0.00 (0.286)b

Figures in the parenthesis are arcsine p; where p is per cent corrected reduction.
In a column means followed by the same letter(s) are not significantly different (P=-0.05) by DMRT.

fluid was sprayed thoroughly at the base of the plant to drench the cotton stems above the ground level by using hand operated knapsack sprayer. Pre and post counts on 15th day were recorded for per cent stem weevil damage and per cent reduction over untreated control was worked out by Henderson and Tilton formula (Henderson and Tilton, 1955) and statistically analysed by followed the Duncan's Multiple Range Test (DMRT) (Gomez and Gomez, 1984). The second round of spray was given 15 days after the first spray.

Population of stem weevil damage prior to the first application ranged from 21.00 to 33.00%. At 7 DAA the per cent reduction was on par in all treatments. But at 15 DAA, per cent damage level ranged from 19.33 to 29.00 in treated plots as against 36.00 against untreated check and the reduction ranged from 23.54 to 54.04% (Table 1).

The pre-treatment population of second application ranged from 19.33 to 36.00 per

;nt. At 7 DAA the per cent reduction of O, PO and MO was 6.46, 3.67 and 1.07 nereas it was 21.78 and 27.29 in monocrotophos d imidacloprid treated plots and 32.44 in iem cake applied plot. At 15 DAA the damage vel was 16.00 to 34.66 in treated plots and e per cent reduction ranged between 6.52 . 50.17.

The low efficacy of the second round spray may be attributed to the following asons: The botanicals could only ward off e pest from nibbling the bark before egg ying and once the pest got entry into the ant the treatments might not be effective. the time the second round of spray was en, almost all the hatched out grubs might ve entered inside the plant making the botanicals effective. It is also surprising that the chemical secticide monocrotophos also could not give ch control. In this period more plants were und wilted due to invasion of root rot fungus r which the botanicals might not be effective. owever the soil application of neem cake minimizes the stem weevil damage (Anon, 1988). The results are in conformity with the earlier findings (Jayaraj *et al.* 2001).

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(Received : January 2002; Revised : September 2002)

Madras Agric. J. 90 (1-3) : 177-180 January-March 2003

esearch Notes

Reproductive strategy of the native oophagus parasitoid, *Trichogramma japonicum* Ashmead (Hymenoptera : Trichogrammatidae) of Andaman Islands

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Trichogramma spp. are proficient egg arasitoids being used globally for the biological ontrol of insect pests, primarily Lepidoterous Stinner *et al.* 1974). The reproductive strategy dopted by the indigenous *Trichogramma japonicum* shmead (Hymenoptera : Trichogrammatidae) as investigated for their exploitation in biological ontrol programs. Potential benefits of the eproductive pattern followed by this parasitoid nd its practical implications are discussed.

T. japonicum was collected from paddy yellow stem borer (*Scirpophaga incertulas*, Pyralidae, Lepidoptera) egg masses in South Andamans. It was mass multiplied in laboratory on factitious host, Rice meal moth, *Corcyra cephalonica* Stainton. Freshly emerged adults of *T. japonicum* $\leq$ 6 hours of age were separated into shell vials (4.4 x 0.5 mm). The walls of the vials were streaked with a 1:1 Honey: