

APRIL 1995 SIREX REPORT
KEITH TURNBULL RESEARCH INSTITUTE

OVERVIEW

Parasitoid cultures were maintained however greater difficulty was experienced in locating suitable billets for the program. There was also difficulty in re-establishing a nematode free sirex culture due to the availability of uninfected insects.

MONITORING

No sirex nematode levels were monitored in the 1994 - 95 period.

NEMATODE FREE SIREX CULTURE

The 1993 nematode free sirex billets were sent to CSIRO for nematode research work. In 1994 attempts were made to locate nematode free sirex. Emerged insects obtained from billets both from South Australia and NSW were examined but showed very high levels of infection. Due to both the extremely low numbers and the long time frame between viable insects, it became difficult to establish a viable population. These attempts were unsuccessful, and as no viable culture had been kept at KTRI there is currently no base culture available.

PARASITOIDS

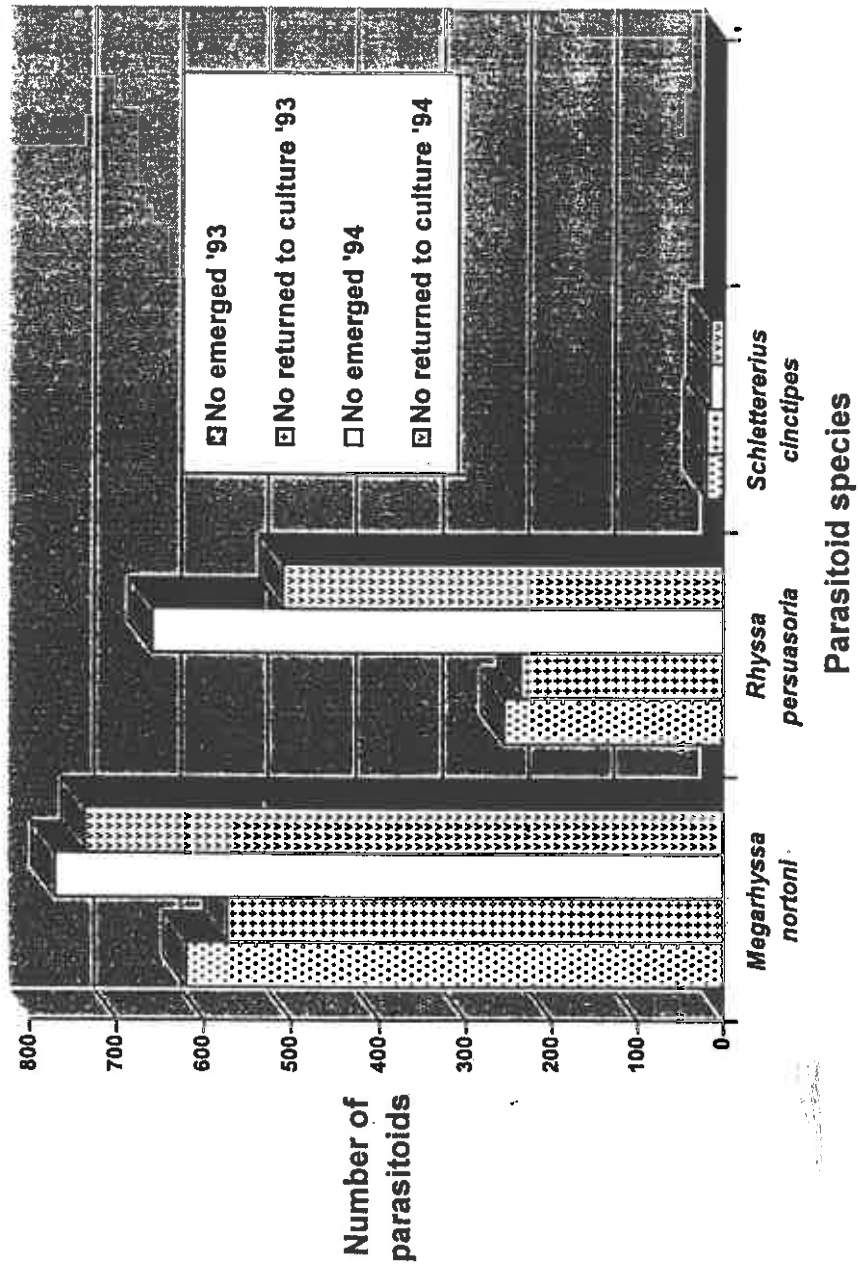
Overall levels of parasitoid numbers increased or at least were maintained (refer to table). It is not conclusive that feeding regimes contributed to this increase. Ratios of male to female parasitoids were noticeably higher during last season. This years rearing program continued to use a combination of honey and Brufax solutions as fully described in last years report, and was supplemented with fresh flowers.

FEEDING TRIAL SUMMARY

The design for the insect feeders was based on principles used in the butterfly enclosure at the Zoological Gardens, Melbourne. The feeders consisted of a large plastic disc, 23cm in diameter into which four shallow reservoirs were cut. Perforated coloured discs 8cm in diameter were fitted over these wells. The perforations (5mm dia.) are large enough for insects to freely feed, even at low levels of liquid. A water trap was also incorporated into the design to limit ant movement and a small tube provided the facility for holding fresh flowers. Video tape footage revealed the feeders were readily accepted and no preference to colour was evident. Colours trialed were blue, green, red, yellow, and orange. Food supplements were a honey water solution (1 level dessertspoon dissolved in 500 mls of hot water) and Brufax yeast product (The Boots Company, N.Z.). Brufax solution consisted of 1 dessertspoon of flakes dissolved into 500 mls of hot water. There was no apparent preferences between species, both Megarhyssa sp. and Rhyssa persuasoria feed freely although Schlettererius cinctipes were never observed feeding. No preference was shown between the honey and the Brufax solutions. A combination of Brufax and honey solutions were provided daily throughout the rearing season.

Difficulties were experienced in obtaining suitable billets for the parasitoid rearing program. Due to the low levels of sirex infestation in the Victorian plantations, assistance was sought both in South Australia and New South Wales. Following communication with these states, plantations in the Bathurst region of NSW were the only ones thought to contain suitable sirex populations. Lengthy delays were then experienced in the collection and transportation to KTRI at Frankston, the billets were received on the 14th November 1994, this being almost two months after the initial request. Large numbers of parasitoids were refrigerated during this delay. During this time insects were allowed to acclimatise and then were fed on a twice weekly basis. The viability of these populations is however questionable. Mortality was high during the first week after the insects were released into the culture room. Although not recorded, high numbers of sirex have since been observed emerging from these logs.

Sirex Parasitoid Rearing 1993 - 1995



PARASITOID CULTURE

PARASITOID	1993		1994		PERIOD OF REARING	LOCATION OF BILLETS	NO. OF BILLETS	DATE OF COLLECTION
	NO. EMERGED 1993	PERIOD OF EMERGENCE	NO. FOR REARING 1993/94	NO. EMERGED 1994				
Mn	M 400 F 220	27.9.93 to 8.12.93	M 359 F 214	1.5m	Bathurst NSW	100	8.9.93 & 28.9.93	
Rp	M 195 F 60	24.8.93 to 23.12.93	M 181 F 55	50	Bathurst NSW	50	8.9.93	
Sc	M 16 F 3	29.10.93 to 15.12.93	M 16 F 3	50	Bathurst NSW	50	28.9.93	

PARASITOID	1994		1995		PERIOD OF REARING	LOCATION OF BILLETS	NO. OF BILLETS	DATE OF COLLECTION
	NO. EMERGED 1994	PERIOD OF EMERGENCE	NO. FOR REARING 1994/95	NO. EMERGED 1995				
Mn	M 690 F 81	17.10.94 to 14.12.94	M 659 F 78	1.5m	Bathurst NSW	120	week ending 11.11.94	
Rp	M 582 F 78	6.10.94 to 27.12.94	M 431 F 77	61	Bathurst NSW	61	week ending 11.11.94	
Sc	M 10 F 5	5.12.94 to 4.1.95	M 10 F 5	61	Bathurst NSW	61	week ending 11.11.94	

Rp = *Rhyssa persuasoria*
 Mn = *Megarhyssa nortoni*
 Sc = *Schletterius cinctipes*