

CHAPTER : 7

OVIPOSITION DETERRING ACTIVITY OF THE SUCCESSIVE
HEXANE BODY WASHES OF LASIODERMA SERRICORNE (F.)

The hexane body-washes of female L. serricorne has, as delineated in chapters 4, 5 and 6, been found to possess high oviposition deterring activity (upto 92%) with respect to conspecific female beetles. It is very important to find out how many times this pheromonal chemical can be collected from the bodies of the beetles, that would possess significant deterring activity. The present work was, therefore, undertaken to find out the oviposition deterring activity upto ten successive body-washes with hexane.

MATERIAL AND METHODS

About 1000 unmated females of L. serricorne of 5-6 days post emergent age were washed successively for ten times, with 5 ml of hexane every time. The insects were washed by gently shaking for 10 minutes in each set. To determine the oviposition deterring activity of each successive female body-washes essentially same procedure was followed as detailed in Chapter 5 and the dose selected for this purpose was 15 FE, based on the

dosimetric study and as stated therein. For each of the successive female body-washes the number of eggs laid were recorded and the ODP activity has been expressed in terms of the percentage deterrence of egg laying.

RESULTS AND DISCUSSION

The ten successive washings collected exhibited a decreasing trend in oviposition deterrent property (Table 7.1). Upto the 4th wash the ODP activity was found to range between 80 and 70% which was highly deterrent. From the 5th wash onwards upto 7th there was a noticeable drop of about 20% in ODP activity and it varied from 48 to 57%. The second significant decrement of ODP activity occurred from 8th to 10th wash registering oviposition deterrence values varying from 19 to 34%. This results indicated that even the 10th wash retained about 19% ODP activity. The first wash was slightly less effective than the 2nd wash. This may be explained by assuming that some excretory products or other readily soluble epicuticular substances that came along with the very first wash as contaminants possibly might have reduced the ODP activity. From the 5th washing the drop in ODP activity upto 7th wash was probably due to exhaustion of already secreted materials. Still further decrease of ODP activity with 8th to 10th wash clearly demonstrated that

the hexane body-wash of female L. serricorne beetles is the source of ODP, and that, the pheromone extractable in hexane represents a true secretory products taking its own time. According to Behan and Schoonhoven (1978) and Schoonhoven et al. (1981) a similar decline of ODP activity of successive egg-washes in distilled water was observable in the case of P. brassicae. Klijnstra (1986), however, in the case of the same species, found that with successive methanol egg-washings the deterrent activity diminished comparatively very gradually. He has reported that upto seven successive egg-washes the ODP activity proved to be highly deterrent. In the present experiment also it was found that upto 7th wash the ODP activity was markably high. This lends credence to the economic practicality of deployment of hexane body-wash of female beetles as a potent method of management of the pest L. serricorne.

SUMMARY

Oviposition deterring activity of the successive female L. serricorne body-washes in hexane were tested. The first wash was found to be slightly less effective than the second one. All the 10 washes were found to possess serially diminishing oviposition deterrent action.

However, two steep drops, one from after the 4th wash and the second after 7th wash was recorded. Nevertheless, even the 10th wash registered at least 19% deterrent action. Above facts indicated that the female L. serricorne body is the source of oviposition deterring pheromone and that it is a true secretory product released only gradually.

Table 7.1. Oviposition deterring activity of ten successive hexane body-washes of L. serricorne females

Successive Wash numbers	Percentage-wise egg distribution on leaf disc-stacks-		Percentage deterrence
	Treated	Control	
1st	11.47	88.53	77.06
2nd	9.77	90.23	80.45
3rd	11.54	88.46	76.92
4th	15.31	84.69	69.39
5th	28.09	78.91	57.81
6th	25.74	74.26	48.51
7th	22.74	77.24	54.47
8th	32.54	67.46	34.92
9th	39.32	60.68	21.37
10th	40.50	59.50	19.01