

SHORT COMMUNICATIONS

RELATIVE EFFECTIVENESS OF FOUR COMMERCIAL REPELLENTS AGAINST SIMULIIDS

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SIMULIIDS (Black-flies), transmit a nematode worm (*Onchocerca volvulus*) to humans causing Onchocerciasis resulting in mass blindness in many African countries. In India, Simuliids (Dimdam flies) are quite prevalent in Sub-Himalayan tracts, Kashmir and Maharashtra. Although, no case of Onchocerciasis has so far been reported from India, the flies pose a serious biting nuisance to men and domestic animals. In many cases, their bites may cause inflammation and secondary infections, leaving scars on the body.

Adult flies breed in fast flowing turbulent streams and larvae are highly susceptible to certain synthetic insecticides¹. Treatment of large areas, being very uneconomical, the use of repellents seems to be the best available method for control. In India, while several repellents were used (DMP, DEET, DEPA, Citronyl, NTP and NBP^{2,3}), almost no attempt was made to test the efficacy of commercially available repellents against Simuliids. Commercial repellents, Mylol (M/s The Boots Company (India) Ltd., Bombay), Expel and Odomos (M/s Balsara Hygiene Products, Bombay), Odomos and Moskit (M/s Bharavi Pharmaceutical Pvt Ltd, Baroda) were, therefore, evaluated for their effects against Simuliids. The field trial was carried out at Palizi (Arunachal Pradesh) during November 1983.

Two grams each of Odomos and Moskit and 1.5 ml each of Expel and Mylol were smeared over the hands (up to elbow) of human volunteers. Three grams each of the former two and 2.5 ml each of the later two were applied over the legs (up to knee). The tests were carried out from 0700 to 1500 hr. Eight human subjects made one experimental set for a particular repellent. The efficacy of different repellents was tested as per randomised block design. The subjects were made to sit at a distance of 2–3 m from one another. Subjects were changed daily to avoid subject preference, if any. The interval between the application of a repellent and

Table 1 Relative efficacy of commercial repellents against simuliids

Repellent	Protection period (in minutes)		Least significant difference
	Range	Average	
Mylol	235–330	270	25.1
Expel	210–295	250	
Odomos	180–235	200	
Moskit	20–35	25	

Level of significance – 0.01

the first two consecutive bites, occurring within 30 min, was taken as the protection time afforded by a test repellent³. *Simulium himalayense* was the most dominant species (> 90%) during the test period. Intensity of black-flies ranged from 25 to 30 bites per man hour in control.

It is evident from the data (table 1) that Mylol and Expel afforded significantly longer protection time than other repellents tested. There is no significant difference between Mylol and Expel but they differ significantly from Odomos and Moskit. Further, Odomos was found to be superior to Moskit.

The present observation may serve as base line data to carry out further studies with newer commercial repellents.

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