The malaria vector control of Anopheles maculatus using various dosages of the local strain of Bacillus thuringiensis H-14 in Kokap District, Kulon Progo regency DIY

JURNAL KEDOKTERAN YARSI 13 (1) : 011-023 (2005)

by Blondine Ch.P

Vector and Disease Reservoir Reseaech Unit, National Institute of Health Research and development, Salatiga, Central Java

ABSTRACT  Biological control using bioinsecticide containing active Bacillus thuringiensis H-14 local strain had been done in the laboratory of the Vector and Reservoir Control Research Unit and in breeding ponds of Anopheles maculatus in Kokap district, Kulon Progo regency. The objectives of this study were:(1). To know the efficacy of B. thuringiensis H-14 local strain toward An. maculatus larvae in the laboratory. (2). To know the effectiveness of B. thuringiensis H-14 local strain at dosages of 1 x LC95, 5 x LC95 and 10 x LC95 toward An. maculatus larvae in the field. Bacillus thuringiensis H-14 local strain at dosages of 2.145 ppm (1 x LC95), 10.724 ppm (5 x LC95) and 21.448 ppm (10 x LC95) were applied to 8 ponds with the widths of ponds ranging from 0.08 – 0.45 m2, 0.29 – 0. 64 m2 and from 0.08 – 0.79 m2 respectively. The results showed, that dosages of B. thuringiensis H-14 local strain after 24 hours were able to kill An. maculatus at percentages of 50%, 90% and 95% respectively, while after 48 hours the dosages were 7.74 ppm (LC50), 17.06 ppm (LC90) and 21.34 ppm (LC95) with the same ability to kill the larvae of the mosquitoes. The effectiveness of B. thuringiensis H-14 local strain dosages of 2.145 ppm (1 x LC95) toward An. maculatus larvae could read until 50% survival of the same time (7.35 days) as that of B. thuringiensis H-14 (8.14 days) at dosages of 10.724 ppm (5 x LC95). The effectiveness to kill of B. thuringiensis H-14 local strain at a dosage of 21.448 ppm (10 x LC95) toward An. maculatus larvae until 50% which survive more longer after (16.21 days) than B. thuringiensis H-14 local strain 1 x LC95 and 5 x LC95 The B. thuringiensis H-14 local strain was indeed effective for controlling mosquitoes larvae