

Struktur Populasi *Trichogrammatoidea armigera*, Parasitoid Telur *Helicoverpa armigera*, Berdasarkan Analisis RAPD-PCR

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Abstrak

Population Structure of *Trichogrammatoidea armigera*, Egg Parasitoid of *Helicoverpa armigera* Based on RAPD-PCR Analysis. Bahagiawati, Damayanti Buchari, Nurindah, H. Rizjaani, Dwinita W. Utami, B. Sahari, and A. Sari. Genetic structures of *Trichogrammatoidea armigera* (Hymenoptera: Trichogrammatidae), the egg parasitoid of *Helicoverpa armigera* (Lepidoptera: Noctuidae) were studied. Egg masses of *H. armigera* were collected from fields of several locations in West Java and East Java with different distances among them and two distinct cultural practices, i.e., monoculture and polyculture. Genetic relationships among *T. armigera* populations that emerged from the collected *H. armigera* eggs were analysed by the RAPD-PCR technique using four oligonucleotide primers. The four primers revealed 55 presumptive polymorphic loci that were used to estimate the population structures. The estimated values of Fixation Index (F_{st}) was 0.16, indicating that there was a division of the populations into subpopulations. This F_{st} value implied the present of reproductive isolation among the populations that might be due to their low migration rate (1.3 insect per generation). This low migration rate indicated the present of low level of gene flow among the populations. A dendrogram resulted from the NTSYS analysis indicated that the West Java and East Java populations of the egg parasitoid had quite wide genetic distances, while within each of the populations there was a subdivision of minor populations. This finding has an important implication on the program to release *Trichogramma* spp. as a biological control agent. The release of the parasitoid cannot be done randomly, because if we pick up a minor population, the starter or the released population will mate with the local population and multiply, thus the inundation will fail to control the target pest.