RINGKASAN

Nyamuk *Anopheles* sp adalah vektor penyakit malaria. Malaria merupakan salah satu penyakit infeksi parasit yang disebabkan oleh Plasmodium dan ditularkan oleh nyamuk betina *Anopheles* sp. Penyebaran *Anopheles* sp. di Indonesia bersifat lokal spesifik artinya spesies *Anopheles* sp. yang ditemukan di suatu wilayah dipengaruhi oleh kespesifikan habitat perkembangbiakannya. Pengendalian vektor penyakit malaria dapat dilakukan secara biologis yaitu dengan menggunakan *Bacillus thuringiensis.* Mekanisme pengendalian parasite tersebut adalah dengan cara memproduksi toksin yang dapat mematikan larva nyamuk.

Tujuan penelitian adalah untuk mengetahui efektivitas konsentrasi *Bacillus thuringiensis* dalam pengendalian larva nyamuk *Anopheles* sp., mengetahui pengaruh stadia larva *Anopheles* sp. terhadap efektivitas *B. thuringiensis* dalam pengendalian larva nyamuk *Anopheles* sp., mengetahui pengaruh interaksi antara konsentrasi *B. thuringiensis* dan stadia larva dalam pengendalian larva nyamuk *Anopheles* sp. Penelitian ini dilakukan secara eksperimental menggunakan Rancangan Acak Lengkap Faktorial (RAL Faktorial) yang terdiri atas dua faktor yaitu konsentrasi *Bacillus thuringiensis* dan stadia larva *Anopheles* dengan pengulangan tiga kali. Perlakuan yang dicobakan adalah konsentrasi *Bacillus thuringiensis* (A) yang terdiri atas 5 taraf: A0: konsentrasi *B.thuringiensis* 0 CFU.mL^{-1}, A1: konsentrasi *B.thuringiensis* 10^2 CFU.mL^{-1} , A2: konsentrasi *B.thuringiensis* 10^4 CFU.mL^{-1}, A3: konsentrasi *B.thuringiensis* 10^6 CFU.mL^{-1}, A4: konsentrasi *B.thuringiensis* 10^8 CFU. mL^{-1}. Perlakuan tahapan instar larva *Anopheles* sp. (B) adalah sebagai berikut: B1: stadia larva instar I, B2: stadia larva instar II, B3: stadia larva instar III, B4: stadia larva instar IV sehingga terdapat 60 satuan percobaan. Parameter yang diamati adalah kematian larva *Anopheles* tiap satuan percobaan dan populasi *B. thuringiensis* pada larva.

Hasil penelitian menunjukkan konsentrasi *B. thuringiensis* isolat CK dan IPB CC yang paling berpengaruh dalam pengendalian larva *Anopheles* sp adalah 10^8 CFU.mL^{-1} . Instar larva yang paling peka terhadap *B. thuringiensis* isolat IPB CC adalah instar I dan II sedangkan instar yang peka terhadap isolat CK adalah instar II, Perlakuan konsentrasi isolat *B. thuringiensis* dan tingkat instar larva yang paling baik dalam pengendalian larva *Anopheles* sp. adalah 10^8 CFU.mL^{-1}, dan instar I dan II.

Kata kunci: *Anopheles* sp., *Bacillus thuringiensis*, biokontrol

SUMMARY

Anopheles mosquito is a vector of malaria. Malaria is a parasitic infection caused by Plasmodium and transmitted by the female Anopheles mosquito. The spread of *Anopheles* sp. in Indonesia is local Anopheles species specific meaning were found in a region affected by breeding habitat specificity. Malaria vector control can be done biologically by using *Bacillus thuringiensis* mekanism of controlling that parasite is works by producing a toxin that can kill larvae of mosquito.

The purpose of the study was to determine the effectiveness of the objective of the research was to determine the effectiveness of *Bacillus thuringiensis* concentration in the control of larvae of *Anopheles* sp., to know the influence larval stage *Anopheles* sp. the effectiveness of *B. thuringiensis* to control of *Anopheles* sp. larvae, determine the effect of interaction between the concentration of *B. thuringiensis* and larval stage in the control of *Anopheles* sp. larvae the concentration of *Bacillus thuringiensis* in the control of *Anopheles* sp. larvae, knowing the influence larval stage *Anopheles* sp. the effectiveness of *B.thuringiensis* in the control of *Anopheles* sp. larvae, determine the effect of interaction between the concentration of *B. thuringiensis* and larval stage in the control of *Anopheles* sp. larvae. This research was carried out experimentally using factorial completely randomized design (RAL Factorial) consisting of two factors: the concentration of bacteria *Bacillus thuringiensis* and *Anopheles* larval stage with three replications. The treatment is carried out for 3 weeks at a concentration of Bacillus thuringiensis (A) will be done in this study are as follows: A0: concentration of *B.thuringiensis* 0 $CFU.mL^{-1}$, A1: the concentration of *B.thuringiensis* 10^2 $CFU.mL^{-1}$, A2: the concentration of *B.thuringiensis* 10^4 $CFU.mL^{-1}$, A3: concentration of *B.thuringiensis* 10^6 $CFU.mL^{-1}$, A4: the concentration of *B.thuringiensis* 10^8 $CFU.mL^{-1}$.1st instar larval stages while treatment *Anopheles* sp. (B) are as follows: B1: the first instar larval stage, B2: second instar larval stage, B3: the third instar larval stage, B4: IV instar larval stage so that there are 60 experimental unit. Parameters measured were death *Anopheles* mosquitoes each experimental unit and the number of existing *B.thuringiensis* on larvae.

The results showed the concentration of *B. thuringiensis* isolates CK and IPB CC most influential in controlling larvae of *Anopheles* sp is 10^8 $CFU.mL^{-1}$. Instar larvae are most sensitive to *B. thuringiensis* isolates IPB CC is instar I and II while instar sensitive bacterial isolation results (CK) is the second instar, treatment concentration of isolates of *B.thuringiensis* and level instar larvae of most good in controlling the larvae of *Anopheles* sp , is 10^8 $CFU.mL^{-1}$, and instar I and II.

Keywords: *Anopheles* sp., *Bacillus thuringiensis*, biocontrol