ABSTRAK

Latar Belakang: Penyakit DBD merupakan masalah di Indonesia. Pada tahun 2016, *Incidence Rate* (IR)=77,96/100.000; *Case Fatality Rate* (CFR)=0,79%. Penanggulangan DBD masih ditujukan pada pengendalian vektor, terutama dengan insektisida kimiawi, namun banyak dilaporkan adanya resistensi, sehingga diperlukan metode penanggulangan lain, yaitu *Lethal Ovitrap* (LO) botol berbahan air perasan daun pepaya (*Carica papaya*) sebagai larvisida, dan air rendaman jerami sebagai atraktan untuk menarik nyamuk datang dan bertelur.
Tujuan: Untuk menganalisis efek LO botol berbahan air perasan daun pepaya dan air rendaman jerami dalam menurunkan populasi *Ae. aegypti* di daerah endemis DBD.
Metode Penelitian: Merupakan penelitian analitik. Untuk menguji model *ovitrap*, menguji toksisitas campuran air perasan daun pepaya dan air rendaman jerami terhadap larva instar 1 dan 3, menguji penurunan daya bunuh berdasarkan lama penyimpanan dan oviposisi menggunakan desain eksperimen murni, sedangkan efek LO di daerah endemis menggunakan desain penelitian eksperimen kuasi. Untuk mendeskripsikan zat aktif atraktan dalam air rendaman jerami dan zat aktif pestisida dalam air perasan daun pepaya menggunakan TLC .
Hasil Penelitian: LO botol model-1 paling banyak memerangkap larva dan nyamuk dalam 30 hari. Nilai LC_{50}=4,1%; LC_{90}=15,5% (untuk larva instar 1), LC_{50}=10,6%; LC_{90}=18,3% (untuk larva instar 3). Semakin lama penyimpanan larutan, maka mortalitas semakin menurun, titapi tidak signifikan. Nyamuk yang terperangkap pada LC50, LC90, dan larutan daun pepaya 100% adalah 12%, 10,8%, dan 8,4% dalam 30 hari. Larva yang terperangkap *ovitrap* berisi air rendaman jerami 4.082,4 larva, dalam air biasa 2.664,4 larva, dalam LC50 ada 70 larva dalam 30 hari. Bahan aktif atraktan dalam jerami adalah NH_4 (12,75mg/l) dan asam laktat (<1,2 ppm). Bahan aktif pestisida dalam daun pepaya adalah alkaloid 0,25%b/v, flavonoid 0,14%b/v, saponin 0,3%b/v, steroid <68mg/l, dan tannin 11,34%b/v. Telur yang direndam pada LC_{50} hanya 1,6% yang berhasil menjadi nyamuk dan yang direndam pada LC_{90} hanya 0,8% yang menjadi nyamuk, yang direndam pada air 98,4% menjadi nyamuk, dan yang direndam dalam air rendaman jerami 10% sebanyak 95,2% menjadi nyamuk. Ada perbedaan yang signifikan penurunan nilai HI dan CI, peningkatan nilai ABJ, serta penurunan jumlah jentik pada kelompok eksperimen di daerah endemis DBD.
Simpulan: Aplikasi *lethal ovitrap* botol berbahan air perasan daun pepaya dan air rendaman jerami mampu menurunkan populasi nyamuk *Aedes aegypti* di daerah endemis DBD.

Kata Kunci: *Aedes aegypti*, Daun Pepaya, Jerami, *Lethal Ovitrap*

LETHAL OVITRAP WITH *Carica papaya* L. LEAF TO REDUCE *Aedes aegypti* (Linn.) POPULATION

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ABSTRACT

Background: DHF is a problem in Indonesia. In 2016, the incidence rate (IR) = 77.96 / 100,000; Case Fatality Rate (CFR) = 0.79%. DHF prevention is still aimed at vector control by chemical insecticide, but there are so many resistances, so other control are needed, fo example with Lethal Ovitrap (LO) bottle made from papaya leaf juice (*Carica papaya* L.) as larvicide and hay infusion as attractant to attract mosquitoes to come and lay eggs.
Objective: To analyze the effect of LO bottle made from papaya leaf juice and hay infusion water to decreasing *Ae. aegypti* population in dengue endemic areas.
Research Methods: There is analytic research. For ovitrap model experiments, the toxicity of a mixture of papaya leaf juice and hay infusion to 1st and 3th instar larvae, durability degradation experiments based on storage duration and oviposition using pure experimental methods. The effect of LO in DHF endemis area by a quasi-experimental trial design. To describe the active substances of attractiveness in hay infusion and pesticide active substances in the papaya leaves juice using TLC.
Results: LO bottle-1 model traps most larvae and mosquitoes in 30 days. Value of LC50 = 4.1%; LC90 = 15.5% (for 1st instar larvae), LC50 = 10.6%; LC90 = 18.3% (for 3th instar larvae). The longer the storage, the mortality decreases, but not significant. The mosquitoes trapped in LC50, LC90, and 100% papaya leaf solution were 12%, 10.8%, and 8.4% in 30 days. The ovitrap trapped larvae contain a water-soaked pond of 4,082.4 larvae, in ordinary water 2,664.4 larvae, in LC50 there are 70 larvae in 30 days. The active ingredients of attractiveness in hay infusion are NH4 (12.75mg / l) and lactic acid (<1.2 ppm). The active ingredients of pesticides in papaya leaves are 0.25% b / v alkaloids, 0.14% b / v flavonoids, 0.3% b / v saponins, steroids <68mg / l, and 11.34% w/v tannins. Eggs soaked in LC50 only 1.6% become mosquitoes and soaked in LC90 only 0.8% became mosquitoes, soaked in air 98.4% became to mosquitoes, and soaked in 10% hay infusion 95,2% become mosquitoes. There were significant differences in HI and CI decline, ABJ increase, and decrease of larvae in the experimental group in DHF endemic areas.
Conclusion: Application of bottle LO with papaya leaf juice and hay infusion able to decrease *Ae. aegypti* mosquito populations in dengue endemic areas.

Keywords: *Aedes aegypti*, Papaya Leaf, Hay Infusion, Lethal Ovitrap