

Universitas Ngudi Waluyo
Program Studi S1 Farmasi, Fakultas Kesehatan
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Sutrianis Bahrianti
051201044

OPTIMASI FORMULA GRANUL LARVASIDA DARI EKSTRAK BIJI ALPUKAT (*Persea americana* Mill) DENGAN BAHAN PENGHANCUR EXPLOTAB

ABSTRAK

Latar belakang: Indonesia menghadapi peningkatan kasus DBD yang disebabkan oleh *Aedes aegypti*. Biji alpukat (*Persea americana* Mill) mengandung flavonoid, alkaloid, saponin dan tanin berpotensi sebagai larvasida alami. Penelitian ini bertujuan mengoptimalkan formula granul larvasida dari ekstrak biji alpukat, untuk meningkatkan stabilitas dan efektivitas dalam membunuh larva *Aedes aegypti*.

Metode: Penelitian ini mengoptimalkan formula granul larvasida dari ekstrak biji alpukat (*Persea americana* Mill) dan explotab menggunakan metode eksperimental. Variasi konsentrasi formula yang digunakan yaitu F1 (0,09:8), F2 (8:8), F3 (0,09:2) dan F4 (8:2). Evaluasi mutu fisik mencakup uji organoleptis, kadar air, kecepatan alir, sudut diam, waktu larut, ukuran partikel dan uji aktivitas larvasida.

Hasil: Hasil mutu fisik dan mortalitas yang dianalisis statistik menggunakan SPSS, pada uji kadar air F1 dan F2 (0,014:0,017), waktu larut F3 dan F4 (0,000:0,003:0,048) yaitu ($<0,05$) terdapat perbedaan yang nyata, pada uji kecepatan alir (0,349), sudut diam (0,498) ($>0,05$) tidak dipengaruhi oleh konsentrasi ekstrak biji alpukat dan explotab. Hasil mortalitas larva formula F1 dan F3 (30,76%), F2 dan F4 (100%). Mortalitas larvasida pada formula F1, F2 dan F3 ($<0,05$). Pada formula optimal dengan ekstrak biji alpukat (3,402%), explotab (2,668%).

Kesimpulan: Hasil sediaan granul formula optimal dengan konsentrasi ekstrak (3,402%), explotab (2,668%). Sedangkan hasil mutu fisik granul ekstrak biji alpukat dan explotab mempengaruhi kadar air, waktu larut, dan mortalitas larva secara signifikan pada beberapa formula, namun tidak berpengaruh signifikan pada kecepatan alir, sudut diam dan mortalitas larva di formula lainnya.

Kata kunci: granul larvasida, biji alpukat, explotab, *Aedes aegypti*

Ngudi Waluyo University
S1 Pharmacy Study Program, Faculty of Health
Thesis, August 2024
Sutrianist Bahrianti
051201044

OPTIMIZATION OF LARVICIDE GRANULE FORMULA FROM AVOCADO SEED EXTRACT (*Persea americana* Mill) WITH EXPLOTAB CRUSHING AGENT

ABSTRACT

Background: Indonesia is facing an increase in dengue cases caused by *Aedes aegypti*. Avocado seeds (*Persea americana* Mill) contain flavonoids, alkaloids, saponins and tannins that have the potential to be natural larvicides. This study aims to optimize the larvicide granule formula from avocado seed extract, to improve stability and effectiveness in killing *Aedes aegypti* larvae.

Methods: This study optimized the larvicide granule formula from avocado seed extract (*Persea americana* Mill) and explotab using an experimental method. The variations in the concentration of the formula used were F1 (0.09:8), F2 (8:8), F3 (0.09:2) and F4 (8:2). Physical quality evaluation includes organoleptic tests, moisture content, flow velocity, idle angle, dissolution time, particle size and larvicide activity tests.

Results: The results of physical quality and mortality were statistically analyzed using SPSS, in the F1 and F2 water content tests (0.014:0.017), F3 and F4 dissolution times (0.000:0.003:0.048), namely (<0.05) there were significant differences, in the flow speed test (0.349), the angle of repose (0.498) (>0.05) was not influenced by the concentration of avocado seed extract and explotab. Mortality results for F1 and F3 formula larvae (30.76%), F2 and F4 (100%). Larvicide mortality in F1, F2 and F3 formulas (<0.05). In the optimal formula with avocado seed extract (3.402%), explotab (2.668%).

Results: The results of the granule preparation formula were optimal with the concentration of extract (3.402%), explotab (2.668%). Meanwhile, the results of the physical quality of avocado seed extract granules and explotab significantly affected the moisture content, dissolution time, and larval mortality in some formulas, but did not have a significant effect on the flow velocity, resting angle, and larval mortality in other formulas.

Keywords: larvicide granules, avocado seeds, explotab, *Aedes aegypti*