VARIASI KOMPOSISI TEPUNG JANGKRIK (*Gryllus bimaculatus*) PADA MEDIA PERBANYAKAN CENDAWAN *Beauveria bassiana* TERHADAP MORTALITAS ULAT TRITIP (*Plutella xylostella*) DAN INTENSITAS KERUSAKAN TANAMAN PAKCOY (*Brassica rapa* L.)

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ABSTRAK

Pakcoy adalah komoditas hortikultura dengan nilai ekonomi tinggi. Produksi pakcoy di Bali menurun sebesar 15,6%–17,17% selama periode 2018–2021 akibat serangan *P. xylostella*. Agen pengendali hayati (APH) seperti *B. bassiana* merupakan alternatif ramah lingkungan untuk pengendalian hama, namun proses propagasi *in vitro* dapat mengurangi virulensi cendawan. Penambahan nutrisi berupa tepung jangkrik berpotensi mempertahankan virulensi cendawan. Penelitian ini bertujuan untuk mengetahui sejauh mana variasi tepung jangkrik memengaruhi perbedaan kerapatan spora *B. bassiana*, mortalitas *P. xylostella*, dan intensitas kerusakan tanaman pakcoy. Penelitian ini merupakan *true experiment* dengan Rancangan Acak Lengkap (RAL) yang terdiri dari 4 perlakuan (komposisi tepung jangkrik 0%, 10%, 15%, 20%) dengan 6 kali ulangan. Penelitian diawali dengan pembuatan tepung jangkrik yang digunakan sebagai sumber nutrisi dalam media perbanyakan *B. bassiana*. Cendawan yang telah diperbanyak kemudian diaplikasikan pada tanaman pakcoy, yang selanjutnya di infestasi dengan larva *P. xylostella* kemudian diamati selama 7 hari. Hasil penelitian menunjukan variasi komposisi tepung jangkrik pada media perbanyakan cendawan mengakibatkan perbedaan kerapatan spora *B. bassiana*. Kerapatan spora *B. bassiana* tertinggi ditemukan pada perlakuan 10% tepung jangkrik yaitu sebesar $1x10^7$ spora/ml yang menandakan APH ini layak digunakan. Variasi komposisi tepung jangkrik pada media perbanyakan *B. bassiana* mengakibatkan perbedaan secara signifikan pada mortalitas hama *P. xylostella*. Mortalitas tertinggi tercatat pada perlakuan 10% (93,3%), diikuti oleh perlakuan 15% (88,3%), 20% (68,3%), dan kontrol tanpa tepung jangkrik (60%). Variasi komposisi tepung jangkrik dalam media perbanyakan *B. bassiana* menyebabkan perbedaan secara signifikan terhadap tingkat kerusakan tanaman pakcoy akibat serangan hama *P. xylostella*. Penambahan tepung jangkrik 10%, 15 % dan 20% mampu menekan intensitas kerusakan tanaman hingga kategori sedang dengan rerata intensitas kerusakan 30%, 39,3% dan 45,5%.

Kata Kunci: *Beauveria bassiana, Plutella xylostella, media perbanyakan, tepung jangkrik, mortalitas, intensitas kerusakan*

VARIATIONS IN THE COMPOSITION OF CRICKET FLOUR (*Gryllus bimaculatus*) IN THE CULTIVATION MEDIUM OF THE FUNGUS *Beauveria bassiana* ON THE MORTALITY OF THE CABBAGE MOTH (*Plutella xylostella*) AND THE INTENSITY OF PLANT DAMAGE PAKCOY (*Brassica rapa* L.)

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ABSTRACT

Pakcoy is a horticultural commodity with high economic value. Pakcoy production in Bali decreased by 15.6%–17.17% during the period 2018–2021 due to attacks by *P. xylostella*. Biological control agents (BCAs) such as *B. bassiana* are environmentally friendly alternatives for pest control, but the in vitro propagation process can reduce fungal virulence. The addition of nutrients in the form of cricket flour has the potential to maintain fungal virulence. This study aims to determine the extent to which variations in cricket flour affect differences in *B. bassiana* spore density, *P. xylostella* mortality, and the intensity of pakcoy plant damage. This study is a true experiment using a Completely Randomized Design (CRD) consisting of 4 treatments (cricket flour composition 0%, 10%, 15%, 20%) with 6 replications. The study began with the production of cricket flour, which was used as a nutrient source in the *B. bassiana* propagation medium. The propagated fungus was then applied to pakcoy plants, which were subsequently infested with *P. xylostella* larvae and observed for 7 days. The results showed that variations in cricket flour composition in the fungus propagation medium caused differences in *B. bassiana* spore density. The highest *B. bassiana* spore density was found in the 10% cricket flour treatment, at $1x10^7$ spores/ml, indicating that this APH is suitable for use. Variations in cricket flour composition in the *B. bassiana* propagation medium resulted in significant differences in *P. xylostella* pest mortality. The highest mortality was recorded in the 10% treatment (93.3%), followed by the 15% treatment (88.3%), 20% treatment (68.3%), and the control without cricket flour (60%). Variations in cricket flour composition in *B. bassiana* propagation media caused significant differences in the level of damage to pakcoy plants caused by *P. xylostella* pest attacks. The addition of 10%, 15%, and 20% cricket flour was able to reduce the intensity of plant damage to the moderate category, with average damage intensities of 30%, 39.3%, and 45.5%.

Keywords: Beauveria bassiana, Plutella xylostella, propagation medium, cricket flour, mortality, damage intensity