

**UJI KONSENTRASI DAN FREKUENSI APLIKASI *Beauveria bassiana*
SEBAGAI AGEN HAYATI UNTUK MENEKAN POPULASI KUTU KEBUL
(*Bemisia tabaci*) PADA TANAMAN CABAI RAWIT (*Capsium frutescens* L.)**

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ABSTRAK

Kutu kebul (*Bemisia tabaci* Genn.) merupakan hama utama tanaman cabai rawit (*Capsicum frutescens* L.) yang menurunkan hasil tanaman melalui kerusakan langsung dan penularan *Pepper Yellow Leaf Curl Virus* (PepYLCV). Penelitian ini bertujuan untuk menguji efektivitas *B. bassiana* pada berbagai konsentrasi dan frekuensi aplikasi dalam menekan populasi kutu kebul. Penelitian ini menggunakan Rancangan Acak Lengkap faktorial dengan dua faktor, yaitu konsentrasi *B. bassiana* (10 g/L, 20 g/L, dan 30 g/L) serta frekuensi aplikasi (1 minggu sekali dan 2 minggu sekali). Perlakuan kontrol berupa Aquadest dan insektisida Imidakloprid 30 WP 0,5 g/L. Data dianalisis menggunakan *Analysis of Varians* (ANOVA) taraf 5% dan dilanjutkan uji *Duncan's Multiple Range Test* (DMRT) pada taraf 5%. Perbedaan antar kontrol dan perlakuan dianalisis dengan uji kontras ortogonal. Hasil penelitian menunjukkan adanya interaksi antara *B. bassiana* berbagai konsentrasi dan frekuensi aplikasi pada mortalitas kutu kebul 14 HSA dan bobot buah cabai per tanaman 65 HST. Perlakuan aplikasi *B. bassiana* konsentrasi 20 g/L dan 30 g/L menunjukkan hasil terbaik pada setiap parameter, yaitu populasi kutu kebul terendah (2,67 dan 2,75 ekor), mortalitas tertinggi (48,11% dan 46,74%), efikasi insektisida tertinggi (93,23% dan 92,99%), intensitas serangan terendah (5,13% dan 5,14%), serta total bobot buah per tanaman tertinggi (81,11 dan 83,64 g). Perlakuan frekuensi aplikasi seminggu sekali juga menunjukkan hasil terbaik dengan populasi kutu kebul terendah (2,89 ekor), mortalitas tertinggi (36,22%), efikasi insektisida tertinggi (92,67%), intensitas serangan terendah (8,04%), serta total bobot buah per tanaman tertinggi (81,66 g).

Kata kunci : *Beauveria bassiana*, kutu kebul, cabai rawit

**EVALUATION OF CONCENTRATION AND APPLICATION FREQUENCY OF
Beauveria bassiana AS A BIOLOGICAL AGENT TO SUPPRESS WHITEFLY
(*Bemisia tabaci*) POPULATION ON CHILI PEPPER (*Capsium frutescens* L.)**

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ABSTRACT

The whitefly (*Bemisia tabaci* Genn.) is a major pest of Bird's eye chili (*Capsicum frutescens* L.) that reduces crop yield through direct feeding damage and by transmitting Pepper Yellow Leaf Curl Virus (PepYLCV). This study aimed to evaluate the effectiveness of *Beauveria bassiana* at various concentrations and application frequencies in suppressing whitefly populations. The experiment employed a factorial Completely Randomized Design (CRD) with two factors, namely *B. bassiana* concentrations (10 g/L, 20 g/L, and 30 g/L) and application frequencies (once a week and once every two weeks). The control treatments consisted of distilled water and imidacloprid 30 WP at 0.5 g/L. Data were analyzed using Analysis of Variance (ANOVA) at the 5% significance level, followed by Duncan's Multiple Range Test (DMRT) at the 5% level. Differences between the control and treatment combinations were further examined using orthogonal contrast tests. The results showed an interaction between *B. bassiana* concentrations and application frequencies on whitefly mortality at 14 DAA and fruit weight per plant at 65 DAP. Applications of *B. bassiana* at concentrations of 20 g/L and 30 g/L produced the best outcomes across all parameters, including the lowest whitefly populations (2.67 and 2.75 individuals), the highest mortality (48.11% and 46.74%), the highest insecticidal efficacy (93.23% and 92.99%), the lowest infestation intensity (5.13% and 5.14%), and the highest total fruit weight per plant (81.11 g and 83.64 g, respectively). Once every week application frequency also resulted in superior performance, yielding the lowest whitefly population (2.89 individuals), highest mortality (36.22%), highest insecticidal efficacy (92.67%), lowest infestation intensity (8.04%), and highest total fruit weight per plant (81.66 g).

Keys : *Beauveria bassiana*, whitefly, chili pepper plants