INTISARI

PATOGENISITAS NUCLEOPOLYHEDROVIRUS DENGAN UV PROTEKTAN DARI KOKON *Samia ricini* (Drury, 1773) TERHADAP ULAT BAWANG *Spodoptera exigua* (Hübner, 1808) PADA *Allium fistulosum* L.

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Bawang merah menjadi salah satu komoditas utama pertanian Indonesia. Namun, produksinya belum konsisten akibat adanya serangan organisme penganggu tanaman (OPT). Organisme penganggu utama pada tanaman bawang merah, yaitu *Spodoptera exigua* yang dapat mengakibatkan kehilangan hasil hingga 100%. Mayoritas petanimengandalkan insektisida sintetis untuk mengatasinya, sehingga berdampak buruk bagi kesehatan, lingkungan, dan membebani ekonomi. Saatini telah dikembangkan alternatif pengendalian hama. Salah satunya menggunakan Nucleopolyhedrovirus (NPV) untuk pengendalian *S. exigua* yang bekerja spesifik sehingga aman bagi lingkungan. Penerapan NPV di lapangan mengalami kendala karena paparan UV yang menurunkan patogenisitasnya. Pemberian UV protektan masih berfokus pada penerapan skala laboratorium. Penelitiann ini bertujuan megetahui efektivitas ekstrak kokon *S. ricini* sebagai UV protektan NPV dalam pengendalian *S. exigua* yang diterapkan dalam skala lapang terbatas atau *greenhouse*. Pengujian menggunakan model Rancangan Acak Lengkap dengan kombinasi perlakuan bioinsektisida NPV dengan dan tanpa ekstrak kokon di minggu ke 0, 1, 2, 3, dan 4; serta kontrolakuades dan decis. Setiap perlakuan diulang sebanyak 3-4 kali. Data yang diperoleh berupa jumlah mortalitas larva dan berat larva subletal. Analisis data dilakukan ANOVA satu arah dan uji DMRT. Semua analisis data menggunakan software SPSS version 16.0. dan Exel 2013. Hasil penelitian menunjukan NPV dengan dan tanpa penambahan 1% sericin *S. ricini* memiliki tingkat efektivitas yang sama dengan insektisida sintetis decis. Penambahan 1% sericin *S. ricini* efektif menjaga patogenisitas NPV terhadap *S. exigua* instar 1 hingga minggu ke 4 paparan serta efektif dilakukan untuk peningkatan nilai estimasi *standart half-life* sebesar 20 – 25%.

Kata kunci: kokon *S. ricini*, Nucleopolyhedrovirus, patogenisitas, UV, *Spodoptera exigua*

ABSTRACT

NUCLEOPOLYHEDROVIRUS PATHOGENICITY WITH UV PROTECTANT FROM *Samia ricini* (Drury, 1773) COCOON AGAINST ONION CATERPILLAR *Spodoptera exigua* (Hübner, 1808) ON *Allium fistulosum* L.

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Shallots are one of Indonesia's main agricultural commodities. However, the production has not been consistent due to attacks by plant-disturbing organisms. Main disturbing organisms on shallot is *Spodoptera exigua*, can cause yield losses up to 100%. Major of farmers rely on synthetic insecticides to overcome them, which has negative impact on health, environment and economy. Currently, alternative pest control has been developed. One of them is using Nucleopolyhedrovirus (NPV) to control *S. exigua* which works specifically so it's safe for the environment. Application of NPV in field faces problems due to UV exposure which reduces it's pathogenicity. Provision of UV protectants still focuses on laboratory scale applications. This study aims to determine the effectiveness of *S. ricini* cocoon extract as a UV protective NPV in controlling *S. exigua* applied in limited field scale or greenhouse. Tests using completely randomized design with combination of NPV bioinsecticide treatments with and without cocoon extract at week 0, 1, 2, 3, and 4; as well as aquadest and decis control. Each treatment was repeated 3-4 times. Data obtained were the number larvae mortality and sublethal larvae weight. Data analysis performed by one-way ANOVA and DMRT test. All analyzes used SPSS version 16.0 software and Exel 2013. The results showed that the NPV with and without the addition of 1% sericin *S. ricini* had the same level of effectiveness as synthetic insecticide decis. The addition of 1% sericin S. ricini was effective in preventing NPV pathogenicity against S. exigua instar 1 up to week 4 of exposure and was effective in increasing the estimated standard half-life value by 20–25%.

Keywords: *S. ricini* cocoons, Nucleopolyhedrovirus, patogenicity, UV, *Spodoptera exigua*