

Nuriatus Sholikhah. 180311100139. **Pengaruh Komposisi Biopolimer Terhadap Viabilitas *Trichoderma* sp. Sebagai Seed Coating Benih Jagung (*Zea mays* L.).** Dibawah bimbingan Dr. Ir. H. Ahmad Arsyadmunir, M.S. dan Dr. Ir. Gita Pawana, M.Si.

ABSTRAK

Jamur *Trichoderma* sp. kecil kemungkinan digunakan apabila aplikasinya tidak praktis, oleh sebab itu *Trichoderma* sp. perlu diformulasikan dan formulasi tersebut diharapkan mampu mengendalikan penyakit bulai pada Jagung (*Zea mays* L.). Formulasi *Trichoderma* sp. dalam bentuk formula *seed coating* dapat menjadi salah satu bentuk dalam aplikasi *Trichoderma* sp secara praktis. Agar viabilitas *Trichoderma* sp. dapat bertahan dan terlindungi selama periode penyimpanan, maka dalam formulasinya diperlukan zat pengikat yang disebut biopolimer. Tujuan dalam penelitian ini yaitu mengetahui komposisi biopolimer yang terbaik untuk melindungi dan mempertahankan viabilitas *Trichoderma* sp. sebagai *seed coating* benih jagung. Penelitian dilakukan dengan metode Rancangan Acak Lengkap (RAL) yang terdiri dari 8 perlakuan dan 4 ulangan. Perlakuan tersebut antara lain adalah K1 (Kontrol 1: *Trichoderma* sp.), K2 (Xanthan gum 2,5%+Natrium Alginat 2,5%+*Trichoderma* sp. +Talk), K3 (Xanthan gum 5%+Natrium Alginat 5%+*Trichoderma* sp. +Talk), K4 (Xanthan gum 2,5%+CMC 2,5%+*Trichoderma* sp. +Talk), K5 (Xanthan gum 5%+CMC 5%+*Trichoderma* sp.+Talk), K6 (Natrium Alginat 2,5%+CMC 2,5%+*Trichoderma* sp. +Talk), K7 (Natrium Alginat 5%+CMC 5%+*Trichoderma* sp. +Talk), K8 (Kontrol 2: *Trichoderma* sp. + Talk). Parameter yang diuji adalah viabilitas *Trichoderma* sp. antara lain populasi *Trichoderma* sp. yang tumbuh, persentase perkecambahan konidia dan laju pertumbuhan *Trichoderma* sp. Hasil penelitian menunjukkan bahwa komposisi biopolimer yang cenderung dapat mempertahankan viabilitas *Trichoderma* sp. lebih lama dengan syarat jumlah konidia hidup dalam formulator cendawan (1×10^6) yaitu perlakuan K2 (Xanthan gum 2,5% + Natrium Alginat 2,5% + *Trichoderma* sp. + Talk), karena perlakuan K2 dapat mempertahankan populasi *Trichoderma* sp. sebanyak $1,7 \times 10^6$ dengan lama penyimpanan benih 40 hari setelah aplikasi.

Kata Kunci: *Trichoderma* sp., *seed coating*, biopolimer, viabilitas.

Nuriatus Sholikhah. 180311100139. **Effect of Biopolymer Composition on Viability of *Trichoderma* sp. as Seed Coating for Corn Seeds (*Zea mays* L.).** Under the guidance of Dr. Ir. H. Ahmad Arsyadmunir, M.S. and Dr. Ir. Gita Pawana, M.Si.

ABSTRACT

Trichoderma sp. fungus is unlikely to be used if its application is not practical, therefore *Trichoderma* sp. needs to be formulated and the formulation is expected to be able to control downy mildew in corn (*Zea mays* L.). *Trichoderma* sp. formulation in the form of seed coating formula can be one form of practical application of *Trichoderma* sp. In order for the viability of *Trichoderma* sp. to survive and be protected during the storage period, its formulation requires a binding agent called a biopolymer. The purpose of this study was to determine the best biopolymer composition to protect and maintain the viability of *Trichoderma* sp. as a seed coating for corn seeds. The study was conducted using a completely randomized design (CRD) method which consisted of 8 treatments and 4 replications. The treatments included K1 (Control 1: *Trichoderma* sp.), K2 (Xanthan gum 2.5%+Sodium Alginate 2.5%+*Trichoderma* sp.+Talk), K3 (Xanthan gum 5%+Sodium Alginate 5%+*Trichoderma* sp.+Talk), K4 (Xanthan gum 2.5%+CMC 2.5%+*Trichoderma* sp.+Talk), K5 (Xanthan gum 5%+CMC 5%+*Trichoderma* sp.+Talk), K6 (Sodium Alginate 2.5%+CMC 2.5%+*Trichoderma* sp.+Talk), K7 (Sodium Alginate 5% + CMC 5% + *Trichoderma* sp.+Talk), K8 (Control 2: *Trichoderma* sp. + Talk). The parameters tested were the viability of *Trichoderma* sp., including the growing population of *Trichoderma* sp., the percentage of conidia germination and the growth rate of *Trichoderma* sp.. The results showed that the biopolymer composition that tends to maintain the viability of *Trichoderma* sp.. longer with the condition that the number of live conidia in the fungus formulator (1×10^6) is K2 treatment (Xanthan gum 2.5% + Sodium Alginate 2.5% + *Trichoderma* sp. + Talc), because K2 treatment can maintain a population of *Trichoderma* sp. $1,7 \times 10^6$ with 40 days of seed storage time after application.

Keyword: *Trichoderma* sp., seed coating, biopolymer, viability.