

Reski Ayu Alia (210311100147). **Pengaruh Waktu Inkubasi dan Volume Media Kultur Molase Terhadap Produksi dan Kualitas *Bacillus Pseudomycoides***.
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ABSTRAK

Bawang merah (*Allium ascalonicum* L.) merupakan komoditas hortikultura penting yang rentan terhadap penyakit moler akibat *Fusarium oxysporum* f.sp. *cepae*. Penggunaan agen hayati seperti *Bacillus pseudomycoides* salah satu pengendalian yang ramah lingkungan. Penelitian ini bertujuan mengetahui pengaruh waktu inkubasi dan volume media kultur molase terhadap produksi endospora, viabilitas, dan aktivitas antagonis *Bacillus pseudomycoides*. Penelitian dilaksanakan secara in vitro menggunakan Rancangan Acak Lengkap (RAL) faktorial dan non faktorial. Hasil penelitian menunjukkan bahwa perlakuan W4V3 kombinasi waktu inkubasi 144 jam dan volume molase 250 ml menghasilkan jumlah sel endospora tertinggi sebesar 135,67 per bidang pandang. Perlakuan W4 juga menunjukkan viabilitas sel terbaik terhadap kekeringan sebesar $3,46 \times 10^3$ CFU/ml yang meningkat menjadi $3,76 \times 10^3$ CFU/ml, sedangkan perlakuan S1W1 (suhu 60 °C selama 5 menit) menghasilkan viabilitas sel tertinggi terhadap panas sebesar $3,80 \times 10^3$ CFU/ml yang meningkat menjadi $3,96 \times 10^3$ CFU/ml. Aktivitas antagonis tertinggi terhadap *Fusarium oxysporum* f.sp. *cepae* terdapat pada perlakuan W4V2 sebesar 85,92%. Temuan ini berpotensi mendukung pengembangan agen hayati yang ramah lingkungan untuk pengendalian penyakit moler yang disebabkan oleh cendawan *Fusarium oxysporum* f.sp. *cepae*. secara berkelanjutan.

Kata kunci: *Bacillus pseudomycoides*, Endospora, *Fusarium oxysporum* f.sp. *cepae*, Molase, Waktu Inkubasi

Reski Ayu Alia (210311100147). **Effect of Incubation Time and Volume of Molasses Culture Media on the Production and Quality of *Bacillus pseudomycoides***. Supervised by Dr. Ir. Gita Pawana, M. Si and Ir. Achmad Djunaedy, M.P.

ABSTRACT

Shallot (*Allium ascalonicum* L.) is an important horticultural commodity that is susceptible to moler disease caused by *Fusarium oxysporum* f.sp. *cepae*. The use of biological agents such as *Bacillus pseudomycoides* is one of the controls that is environmentally friendly. This study aims to determine the effect of incubation time and volume of molasses culture media on endospore production, viability, and antagonistic activity of *Bacillus pseudomycoides*. The research was conducted in vitro using a factorial and non factorial completely randomised design (CRD). The results showed that the W4V3 treatment, a combination of 144 hours incubation time and 250 ml molasses volume, produced the highest number of endospore cells at 135.67 per field of view. The W4 treatment also showed the best cell viability to drought at $3,46 \times 10^3$ CFU/ml which increased to $3,76 \times 10^3$ CFU/ml, while the S1W1 treatment (60°C temperature for 5 minutes) produced the highest cell viability to heat at $3,80 \times 10^3$ CFU/ml which increased to $3,96 \times 10^3$ CFU/ml. The highest antagonistic activity against *Fusarium oxysporum* f.sp. *cepae* was found in treatment W4V2 at 85.92%. These findings have the potential to support the development of environmentally friendly biological agents for the sustainable control of moler disease caused by the fungus *Fusarium oxysporum* f.sp. *cepae*.

Keywords: *Bacillus pseudomycoides*, Endospores, *Fusarium oxysporum* f.sp. *cepae*, Incubation Time, Molasses