

**Pengaruh Formula Media Tumbuh Terhadap Jumlah Bakteri Pseudomonad  
Fluoresen Isolat Cas Dan Uji Antagonisnya Terhadap  
*Blood Disease Bacteria* (BDB)**

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**ABSTRAK**

Pseudomonad fluoresen merupakan agen hayati yang dapat digunakan sebagai pengendali penyakit tanaman, meningkatkan pertumbuhan tanaman dan ketersediaan fosfat bagi tanaman, serta menghasilkan senyawa yang merupakan sinyal bagi tanaman untuk memproduksi metabolit sekunder yang bersifat antimikroba. Penelitian ini bertujuan untuk mengetahui jumlah bakteri pseudomonad fluoresen isolat Cas yang ditumbuhkan dalam berbagai formula dan untuk melihat aktivitas antagonis pseudomonad fluoresen isolat Cas terhadap *Blood Disease Bacteria* (BDB) tanaman pisang.

Percobaan ini dilakukan pada bulan Juni sampai Juli 2020, bertempat di Laboratorium Fisiologi Tumbuhan FMIPA UNP. Penelitian ini merupakan penelitian eksperimen menggunakan Rancangan Acak Lengkap (RAL) dengan 5 perlakuan dan 3 ulangan. Perlakuan tersebut yaitu M1 = molase 10 g/L + ZA 5 g/L, M2 = molase 10 g/L + ZA 10 g/L, M3 = molase 5 g/L + ZA 5 g/L, M4 = molase 5 g/L + ZA 10 g/L, M5 = NB 8 g/L. Data jumlah bakteri pseudomonad fluoresen isolat Cas dan diameter zona hambat uji antagonis terhadap *Blood Disease Bacteria* (BDB) dianalisis menggunakan ANOVA dan dilanjutkan dengan uji lanjut DNMRT dengan taraf nyata 5%.

Hasil penelitian menunjukkan pseudomonad fluoresen isolat Cas yang ditumbuhkan dalam formula M3 (Molase 5 g/L + ZA 5 g/L) menghasilkan jumlah bakteri tertinggi yaitu  $118,3 \times 10^8$ , sedangkan jumlah bakteri terendah pada formula M5 (NB 8 g/L) yaitu  $9,76 \times 10^8$ . Hasil uji antagonis terhadap *Blood Disease Bacteria* (BDB) menunjukkan pseudomonad fluoresen isolat Cas dapat menghambat pertumbuhan BDB. Diameter zona hambat yang paling besar dihasilkan oleh formula M1 (Molase 10 g/L + ZA 5 g/L) yaitu 10,26 mm dan yang terkecil dihasilkan oleh formula M2 (Molase 10 g/L + ZA 10 g/L) yaitu 10,06 mm.

Kata Kunci : Pseudomonad fluoresen, *Blood Disease Bacteria* (BDB), molase, ZA

# **The Effect of Various Growing Media Formulas on the Amount of Fluorescent Pseudomonad Bacteria Isolate Cas and Antagonistic Test Against Blood Disease Bacteria (BDB)**

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## **ABSTRACT**

Fluorescent pseudomonad is a biological agent that can be used to control plant diseases, increase plant growth and availability of phosphate for plants, and produce compounds that are signals for plants to produce secondary metabolites that are antimicrobial. This study aims to determine the number of fluorescent pseudomonad bacteria Cas isolate grown in various formulas and to determine the antagonistic activity of Cas isolate fluorescent pseudomonad against Blood Disease Bacteria (BDB) banana plants.

This experiment was carried out from June to July 2020, at the Plant Physiology Laboratory of FMIPA UNP. This research is an experimental study using a completely randomized design (CRD) with 5 treatments and 3 replications. The treatments are M1 = molasses 10 g / L + ZA 5 g / L, M2 = molasses 10 g / L + ZA 10 g / L, M3 = molasses 5 g / L + ZA 5 g / L, M4 = molasses 5 g / L + ZA 10 g / L, M5 = NB 8 g / L. Data on the number of fluorescent pseudomonad bacteria isolate Cas and inhibition zone diameter of the antagonist test against Blood Disease Bacteria (BDB) were analyzed using ANOVA and followed by further DNMRT test with a significant level of 5%.

The results showed that the fluorescent pseudomonad of Cas isolate grown in the M3 formula (Molasses 5 g / L + 5 g / L ZA) produced the highest number of bacteria, namely  $118.3 \times 10^8$ , while the lowest number of bacteria was in the M5 formula (NB 8 g / L), namely  $9.76 \times 10^8$ . Furthermore, the antagonistic test against Blood Disease Bacteria (BDB) shows that the fluorescent pseudomonad of Cas isolate can inhibit the growth of BDB. The ability to inhibit it can be seen from the inhibition zone diameter that is formed. The largest diameter of the inhibition zone is produced by the M1 formula (10 g/L molasses + ZA 5 g/L), which is 10.26 mm and the smallest is produced by the M2 formula (10 g / L + ZA 10 g / L) which is 10.06 mm.

Keywords : Fluorescent pseudomonad, *Blood Disease Bacteria* (BDB), Molasses, ZA