KARAKTERISASI DAN KEMAMPUAN ISOLAT *Arthrobacter* sp. LM1KK DALAM MEREDUKSI AMONIA

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INTISARI

Penelitian ini bertujuan untuk mengetahui karakteristik dan kemampuan isolat *Arthrobacter* sp. LM1KK dalam mereduksi amonia. Data yang diperoleh adalah pertumbuhan isolat *Arthrobacter* sp. LM1KK dalam medium cair dengan penambahan $(NH_4)_2SO_4$ sebanyak 0%, 1%, 3%, 5%, 7%, 10%, 15% dan medium cair dengan penambahan urin sapi perah sebanyak 1%, 3%, 5%, 7%, 10%, dan 15%, pengukuran diameter koloni, motilitas, bentuk dan jenis isolat, pengecatan Gram, katalase dan pengukuran reduksi amonia metode Nessler. Analisa data yang digunakan dalam penelitian ini adalah analisis secara deskriptif. Hasil penelitian menunjukkan bahwa isolat *Arthrobacter* sp. LM1KK mampu tumbuh dalam medium padat dan cair, tumbuh dengan baik pada medium cair dengan penambahan urin hingga 15% dan penambahan $(NH_4)_2SO_4$ 7%, terhambat pertumbuhannya pada penambahan $(NH_4)_2SO_4$ sebanyak 10% dan 15%, sedangkan pada medium padat hanya mampu tumbuh sampai penambahan $(NH_4)_2SO_4$ 10%. Jumlah koloni dan ukuran diameter koloni yang terbentuk berbanding terbalik dengan jumlah $(NH_4)_2SO_4$ yang ditambahkan. *Arthrobacter* sp. LM1KK memiliki bentuk sel *irregular*, Gram negatif (-), katalase positif (+), motilitas negatif (-), fakultatif anaerob, bentuk koloni bulat, cembung, halus, tidak tembus cahaya, berwarna kekuningan dan mampu mereduksi amonia yang terdapat dalam medium tumbuhnya.

(Kata kunci : *Arthrobacter* sp. LM1KK, Karakterisasi, Reduksi Amonia, $(NH_4)_2SO_4$)

CHARACTERIZATION AND CAPABILITY OF ISOLATE *Arthrobacter* sp. LM1KK IN REDUCING AMMONIA

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ABSTRACT

This study aims to know the characteristics and the capability of isolate *Arthrobacter* sp LM1KK in reducing ammonia. The observed data were the growth of isolate *Arthrobacter* sp LM1KK in a medium with additional $(NH_4)_2SO_4$ at 0%, 1%, 3%, 5%, 7%, 10%, 15% and a medium with additional dairy cattle urine at 1%, 3%, 5%, 7%, 10%, and 15%, colony diameter, motility, shape and isolate type, Gram stain, catalase test and the measurement of ammonia reduction using Nessler method. The data analysis used in this study was descriptive analysis. The results showed that isolate *Arthrobacter* sp. LM1KK able to growth in solid and liquid mediums, growth well in liquid medium with additional dairy cattle urine at 15% and liquid medium with additional $(NH_4)_2SO_4$ at 7%, the growth delayed when $(NH_4)_2SO_4$ was added at 10% and 15%, able to growth in solid medium with additional $(NH_4)_2SO_4$ at 10%. The numbers and the diameter of the colonies that formed was inversely proportional to the levels of the $(NH_4)_2SO_4$ that was added. The isolate *Arthrobacter* sp. LM1KK isolate has irregular shape, Gram negative (-), catalase positive (+), motility negative (-) and facultative anaerobe metabolism. The colony was circular, smooth, convex, opaque, yellow and able to reduce ammonia on their growth medium.

(Keywords : *Arthrobacter* sp. LM1KK, Characterization, Ammonia Reducing, $(NH_4)_2SO_4$)