ISOLASI DAN KARAKTERISASI BAKTERI ASAM LAKTAT DARI USUS AYAM BROILER (*Gallus gallus domesticus*) SEBAGAI AGEN FERMENTASI PAKAN AYAM BROILER

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ABSTRAK

Penggunaan *Antibiotic Growth Promotor* (AGP) sebagai bahan tambahan pada pakan ayam menyebabkan resistensi terhadap antibiotik, sehingga pemerintah melarang penggunaan AGP untuk sektor peternakan ayam. Pelarangan penggunaan AGP menyebabkan produktivitas peternakan menurun hingga 80%, sehingga menyebabkan peningkatan harga daging ayam di pasar nasional. Bakteri asam laktat merupakan probiotik alami yang dapat dijadikan sebagai pengganti AGP. Tujuan dari penelitian ini adalah melakukan karakterisasi bakteri asam laktat dari usus ayam broiler dan memanfaatkan bakteri sebagai agen fermentasi pada pakan ayam dengan melakukan analisis proksimat. Metode penelitian yang digunakan adalah eksperimental laboratorium, yang dimulai dari proses sampling, penumbuhan bakteri, isolasi bakteri asam laktat, perbanyakan bakteri asam laktat, uji potensi produksi aktivitas enzim hidrolase ekstraseluler, pewarnaan gram, proses fermentasi dan analisis proksimat. Pada penelitian ini, sampel yang digunakan adalah bagian usus halus. Selanjutnya usus diletakkan pada media MRS broth, teknik yang digunakan dalam proses isolasi adalah teknik gores, parameter pengujian proksimat yang dilakukan adalah kadar air, kadar abu, kadar protein kasar, kadar lemak, dan protein terlarut. Hasil karakterisasi BAL menunjukkan bahwa bakteri berbentuk coccus, gram positif, memiliki aktivitas lipase dan selulase ekstraseluler yang kuat, mampu menghasilkan pH asam diantara 4,30 – 5,39, dan mampu meningkatkan kualitas pakan melalui proses fermentasi. Hasil Fermentasi pakan menunjukkan kualitas pakan dengan kadar air 11-12%, kadar abu 1-2%, kadar lemak 2-5%, dan kadar protein 11-13%. Hasil uji protein terlarut menunjukkan bahwa kadar protein terlarut terbaik adalah 10.26%. Dalam penelitian ini, BAL dari usus ayam broiler dapat dijadikan sebagai solusi untuk menyelesaikan permasalahan pelarangan AGP di Indonesia. Penelitian ini berkontribusi terhadap kemajuan bidang teknologi pangan dan mikrobiologi dalam upaya mengembangkan *antibiotic growth promotor.*

Kata Kunci: *Antibiotic Growth Promotor*, Bakteri Asam Laktat, Proksimat, Pakan

ISOLATION AND CHARACTERISATION OF LACTIC ACID BACTERIA FROM THE INTESTINE OF BROILER CHICKENS (Gallus gallus domesticus) AS A FERMENTATION AGENT FOR BROILER FEEDS

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ABSTRACT

The use of Antibiotic Growth Promoter (AGP) as an additive in chicken feed causes antibiotic resistance, so the government banned the use of AGP for the chicken farming sector. The ban on the use of AGP has caused farm productivity to decline by up to 80%, resulting in an increase in the price of chicken meat in the national market. Lactic acid bacteria are natural probiotics that can be used as a substitute for AGP. The purpose of this study was to characterise lactic acid bacteria from the intestine of broiler chickens and utilise the bacteria as a fermentation agent in chicken feed by conducting proximate analysis. The research method used is laboratory experimental, which starts from the sampling process, bacterial growth, isolation of lactic acid bacteria, propagation of lactic acid bacteria, testing the potential production of extracellular hydrolase enzyme activity, gram staining, fermentation process and proximate analysis. In this study, the sample used was the small intestine. Furthermore, the intestine is placed on MRS broth media, the technique used in the isolation process is the scratch technique, the proximate testing parameters carried out are water content, ash content, crude protein content, fat content, and soluble protein. LAB characterisation results showed that the bacteria were coccus-shaped, gram-positive, had strong extracellular lipase and cellulase activities, were able to produce an acidic pH between 4.30 - 5.39, and were able to improve feed quality through the fermentation process. Fermented feed showed feed quality with 11-12% moisture content, 1-2% ash content, 2-5% fat content, and 11-13% protein content. The soluble protein test results showed that the best soluble protein content was 10.26%. In this study, LAB from broiler intestine can be used as a solution to solve the problem of AGP prohibition in Indonesia. This research contributes to the advancement of food technology and microbiology in an effort to develop antibiotic growth promoters.

Keyword: *Antibiotic Growth Promoter, Lactic Acid Bacteria, Proximate, Feed*