Pengaruh Penambahan Ubi Cilembu (*Ipomoea Batatas* L.) pada Level yang Berbeda terhadap Fermentasi Ikan Rucah Secara *In Vitro* Oleh *Lactobacillus paracasei* FDY 43 pada pH Awal Asam

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INTISARI

Penelitian ini bertujuan untuk mengkaji pengaruh penambahan ubi cilembu pada level yang berbeda terhadap fermentasi ikan rucah secara *in vitro* oleh *Lactobacillus paracasei* FDY 43 pada pH awal asam. Penelitian ini menggunakan bahan berupa ikan rucah, tepung ubi jalar cilembu, *L. paracasei* FDY 43, dan larutan 0,5 M CH_3COOH. *L. paracasei* FDY 43 yang digunakan merupakan bakteri asam laktat (BAL) koleksi laboratorium Biokimia Nutrisi Fakultas Peternakan UGM. Perlakuan yang dilakukan adalah perbedaan level atas dasar nilai Ks substrat berupa ubi jalar cilembu yaitu dengan level; 0%, 2%, 4%, dan 6%. Parameter yang diamati meliputi pH, organoleptik, analisis proksimat, *Total Plate Count* (TPC), kadar asam laktat, uji sifat antagonistic *L. paracasei* FDY 43 terhadap E. coli, dan uji kecernaan *in vitro* dengan pepsin. Data yang diperoleh kemudian dianalisis variansi dengan Rancangan Acak Lengkap (RL) pola factorial. Parameter yang berbeda karena perlakuan dilanjutkan uji *Duncan New Multiple Range Test* (DMRT). Hasil penelitian menunjukkan penambahan substrat sebesar 2% memberikan hasil terbaik dari parameter organoleptik, nilai pH, kadar asam laktat, dan TPC dibandingkan pada perlakuan pemberian level substrat lainnya, namun belum memberikan hasil optimal pada uji kecernaan *in vitro* produk fermentasi ikan. Produk fermentasi ikan rucah dengan penambahan substrat 2% dan inkubasi 21 hari dapat mempertahankan dan meningkatkan kualitas fermentasi ikan rucah.

Kata kunci : Fermentasi, Ikan Rucah, L. *paracasei* FDY 43, Ubi Jalar Cilembu, Asam Laktat

Effect of Addition Cilembu Sweet Potato (Ipomoea batatas L.) in Different Level on In Vitro Fish Waste Fermentation by Lactobacillus paracasei FDY 43 at Acid Initial pH

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ABSTRACT

This study aims to examine the effect of Cilembu sweet potato addition at different levels on in vitro rucah fish fermentation by *Lactobacillus paracasei* FDY 43 at acidic initial pH. The materials used in this study were fish waste (by catch) and local sweet potato flour, and 0,5 M CH_3COOH. L.paracasei FDY 43 which is lactic acid bacteria (LAB) from the collection of the Nutritional Biochemistry, Faculty of Animal Science, UGM. The treatmens of this study were the differentiation of substrate-level; 0%, 2%, 4%, and 6% (W per V) addtion. While Parameters of this study included pH, organoleptic analysis, proximate analysis, lactic acid content, antagonistic characteristic of L. paracasei FDY 43 again to E. coli growth, and in vitro analysis of nutrients digestibility using pepsin enzyme. The data were analysed by variance analysis with a completely randomized design (CRD) factorial pattern. The significant differences of variables due to the treatments have been analysed by Duncan New Multiple Range Test (DMRT). The result of this study showed the addition of 2% substrate gives the best result (based on parameters organoleptic, pH value, lactic acid, and TPC) among another level substrate addition, however did not enhance in-vitro digestion value optimally. Fish waste fermentation product with the additional substrate and 21 days of fermentation incibation have enhanced the quality of fish waste fermentation product.

Keywords : Fermentation, Rucah Fish, L.paracasei FDY 43, Cilembu local sweet potato, Lactic acid