

Pengaruh Penambahan Ubi Jalar Ungu Lokal (*Ipomoea batatas* L.) terhadap Fermentasi Limbah Ikan oleh *Lactobacillus paracasei* FDY 43 pada Medium pH Rendah

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INTISARI

Silase ikan rucah merupakan sumber pakan protein yang diproduksi melalui proses fermentasi ikan bakteri asam laktat. Ubi jalar ungu merupakan sumber karbohidrat yang bermanfaat bagi pertumbuhan bakteri probiotik. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan perbedaan level ubi jalar ungu sebagai substrat pada fermentasi *Lactobacillus paracasei* FDY 43 terhadap kualitas fermentasi limbah ikan pada medium pH rendah. Bahan yang digunakan dalam penelitian ini adalah limbah ikan rucah dan tepung ubi jalar ungu. Penelitian menggunakan bakteri *L. paracasei* FDY 43 yang merupakan bakteri asam laktat (BAL) koleksi laboratorium Biokimia Nutrisi Fakultas Peternakan UGM. Level ubi ungu yang digunakan untuk peningkatan kualitas fermentasi limbah ikan yaitu 0%, 2%, 4%, dan 6% dari total fermentasi. Parameter yang diuji meliputi pH, organoleptik, analisis proksimat (bahan kering, protein kasar, dan lemak kasar), dan kadar asam laktat. Data yang diperoleh kemudian dianalisis dengan analisis variansi dengan Rancangan Acak Lengkap (RAL) pola faktorial. Apabila terdapat variable dengan perbedaan nyata karena perlakuan, dilanjutkan uji *Duncan's New Multiple Range Test* (DMRT). Hasil penelitian menunjukkan bahwa perbedaan level substrat ubi jalar ungu sebagai perlakuan memberikan pengaruh nyata ($P < 0,05$) terhadap kualitas fermentasi limbah ikan. Hasil penelitian menunjukkan bahwa pemberian level ubi jalar ungu sebesar 4% dapat meningkatkan kualitas fermentasi limbah ikan menjadi lebih optimal. Kesimpulan dari hasil penelitian ini adalah penambahan substrat ubi ungu pada fermentasi *L. paracasei* FDY 43 pada pH medium rendah mampu mempertahankan dan meningkatkan kualitas fermentasi limbah ikan.

Kata kunci : Silase Limbah Ikan, *Lactobacillus paracasei* FDY 43, Ubi Jalar Ungu, Protein kasar, Asam laktat

Effect of Addition of Local Purple Sweet Potato (*Ipomoea batatas* L.) on Fish Waste Fermentation by *Lactobacillus paracasei* FDY 43 in Low pH Medium

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ABSTRACT

Fish silage is a source of protein feed produced through the fermentation process of fish by lactic acid bacteria. Purple sweet potato is a carbohydrate source that is beneficial for the growth of probiotic bacteria. This study aimed to determine the effect of adding different levels of purple sweet potato as a substrate for fermentation by *Lactobacillus paracasei* FDY 43 on the quality of fish waste silage at a low pH medium. The materials used in this study were fish waste (bycatch) and purple sweet potato flour. The study used was the bacterium *L. paracasei* FDY 43 which is lactic acid bacteria (LAB) from the collection of the Nutrition Biochemistry Laboratory, Faculty of Animal Science, UGM. The purple sweet potato levels used to improve the quality of fish waste silage fermentation were 0%, 2%, 4%, and 6% (W/V) of the total fermentation. Parameters of this study include pH, organoleptic analysis, proximate analysis (dry matter, crude protein, and crude fat), and lactic acid levels. The data obtained were then analyzed by analysis of variance with a completely randomized design (CRD) factorial pattern. If there is a significant difference of variable collected due to treatment, the Duncan's New Multiple Range Test (DMRT) test was continued. The results showed that the different substrate levels of purple sweet potato as a treatment had a significant effect ($P < 0.05$) on the quality of fish waste fermentation. The results showed that the administration of purple sweet potato level of 4% could improve the quality of fish waste fermentation to be more optimal. The conclusion from the results of this study was that the addition of purple sweet potato as substrate in ferments *L. paracasei* FDY 43 at low medium pH were able to maintain and improve the quality of fermentation of fish waste.

Keywords: Fish Waste Silage, *Lactobacillus paracasei*, Purple Sweet Potato, Crude Protein, Lactic Acid