KECERNAAN *IN VITRO* DAN KARAKTERISTIK FERMENTASI *TOTAL MIXED RATION* BERBASIS LIMBAH INDUSTRI KERUPUK IKAN REMANG (*Congresox talabon*) SEBAGAI SUMBER PROTEIN PAKAN

INTISARI

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Penelitian ini dilaksanakan untuk mengetahui komposisi nutrien dan karakteristik degradasi dari tepung limbah ikan (**TLI**) remang serta pengaruh penggunaannya pada degradasi nutrien dan karakteristik fermentasi *in vitro total mixed ration* (**TMR**). Karakteristik degradasi TLI remang dianalisis dengan metode *in sacco*. Dengan menggunakan rancangan acak lengkap pola searah, tiga macam TMR dengan penggunaan level TLI berbeda (**T1** / kontrol = 0% TLI remang, **T2** = 7,5% TLI remang, dan **T3** = 15% TLI remang) diinkubasikan secara *in vitro* selama 48 jam dengan mengikuti metode kecernaan 2-tahap untuk mengetahui degradasi nutrien dan karakteristik fermentasi *in vitro* TMR. Hasil penelitian menunjukkan bahwa TLI remang memiliki kandungan protein kasar 56,4%, lemak kasar 13,0%, kalsium 11,3%, dan fosfor 8,76%. Peningkatan penggunaan TLI remang pada TMR menyebabkan penurunan ($P<0,05$) degradasi bahan kering, bahan organik, dan serat kasar. Meskipun penggunaan TLI remang dengan level yang berbeda tidak berpengaruh pada pH dan konsentrasi protein mikroba, namun terjadi penurunan ($P<0,05$) konsentrasi amonia dan *volatile fatty acids* total seiring dengan peningkatan level TLI remang dalam TMR. Peningkatan penggunaan TLI remang dalam TMR menurunkan ($P<0,05$) konsentrasi asam asetat dan propionat, sedangkan konsentrasi asam butirat dan rasio asetat:propionat tidak berbeda antar perlakuan. Dapat disimpulkan bahwa tepung limbah ikan remang dapat digunakan untuk menggantikan penggunaan bungkil kedelai pada TMR sampai dengan 15% tanpa memberikan efek negatif pada fermentasi rumen.

Kata kunci: Kecernaan, *In vitro*, *In sacco*, Karakteristik fermentasi *in vitro*, Komposisi nutrien, Tepung limbah ikan, *Total mixed ration*

IN VITRO DIGESTIBILITIES AND FERMENTATION CHARACTERISTIC OF TOTAL MIXED RATION BASED ON FISH (*Congresox talabon*) WASTE MEAL FROM CRACKERS INDUSTRY AS PROTEIN FEEDSTUFF

ABSTRACT

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This study was done to evaluate chemical composition and *in sacco* degradability of fish waste meal (**TLI**) as well as to evaluate the effect of TLI substitution on degradation and *in vitro* fermentation characteristics of total mixed ration (**TMR**). Degradation characteristic of TLI was analyzed by *in sacco* method. By following one way completely randomized design, three experimental treatments (**T1** / control = 0% TLI, **T2** = 7.5% TLI, and **T3** = 15% TLI) were incubated for 48 h using a 2-stage *in vitro* method to determine nutrients degradation and *in vitro* fermentation characteristics of TMR. The result showed that TLI contains 56.4% crude protein, 13.1% ether extract, 11.3% calcium, and 8.76% phosphorus. As the level of TLI in TMR was increased, the degradation of dry matter, organic matter, and crude fiber were decreased ($P<0.05$). Although TLI substitution did not affect ruminal pH and protein microbes concentration, the ammonia and total volatile fatty acids concentration were decreased ($P<0.05$) as the TLI substitution was increased. By increasing the TLI substitution in TMR, acetic and propionic acids concentrations were declined ($P<0.05$), while butyric acids concentration and acetate:propionate ratio did not affected. It can be conclude that fish waste meal can be used as soybean meal subtitute in the TMR up to 15% without negative effect on rumen fermentation.

Keywords: Digestibility, *In sacco*, *In vitro*, *In vitro* fermentation characteristic, Chemical composition, Fish waste meal, *Total mixed ration*