

**RINGKASAN**

**ZAKIYATUSSANY. Pemanfaatan Enzim Bonggol Nanas dalam Pakan Komersil Ikan Bawal Air Tawar (*Colossoma macropomum*) terhadap Kecernaan Protein Kasar dan Energi. Dosen Pembimbing : Agustono, Ir., M.Kes. dan Prof. Dr. Mirni Lamid, drh., M.P.**

Ikan bawal air tawar merupakan spesies ikan yang memiliki tingkat kelangsungan hidup yang tinggi (90%), proses produksi tidak dipengaruhi musim, pertumbuhan cepat, ekonomis, dapat dipelihara dengan padat tebar tinggi, tahan penyakit, dan mudah dibudidayakan. Oleh karena itu permintaan ikan bawal air tawar terus meningkat. Salah satu upaya untuk meningkatkan produksi ikan bawal air tawar adalah dengan meningkatkan kualitas pakan. Kualitas pakan dapat ditingkatkan dengan menambahkan enzim bonggol nanas dalam pakan. Aktivitas enzim bromelin tertinggi terdapat pada bonggol nanas berkisar 0,695-1,081 U/ml. Enzim bromelin mampu menghidrolisis protein menjadi asam amino, berperan sebagai katalisator dalam sel, mengandung *thiamine* yang berperan dalam pemecahan glukosa menjadi energi serta mangan yang berperan dalam pemecahan glukosa menjadi energi sehingga dapat meningkatkan daya cerna protein dan energi. Oleh karena itu perlu diketahui nilai kecernaan protein kasar dan energi pada pakan yang ditambahkan enzim bonggol nanas.

Penelitian ini bertujuan untuk mengetahui pengaruh pemanfaatan enzim bonggol nanas dalam pakan komersil ikan bawal air tawar terhadap kecernaan protein kasar dan energi. Penelitian ini dilaksanakan pada bulan November sampai Desember 2019 dengan menggunakan rancangan acak lengkap (RAL), yang terdiri dari 5 perlakuan yang meliputi P0 (Pakan komersil 100% + enzim bonggol nanas 0%), P1 (Pakan komersil 100% + enzim bonggol nanas 0,75%), P2 (Pakan komersil 100% + enzim bonggol nanas 1,5%), P3 (Pakan komersil 100% + enzim bonggol nanas 2,25%), P4 (Pakan komersil 100% + enzim bonggol nanas 3%) dengan masing-masing 4 ulangan. Data yang diperoleh dianalisis dengan menggunakan *analysis of variance* (ANOVA) dan dilanjutkan dengan uji DMRT

(*Duncan Multiple Range Test*) pada pencernaan protein kasar dan energi karena menunjukkan pengaruh yang berbeda nyata ( $p < 0,05$ ).

Hasil dari penelitian ini yaitu nilai pencernaan protein kasar pada masing-masing perlakuan : P0 (94,968%), P1 (95,713%), P2 (96,524%), P3 (97,419%), dan P4 (96,135%) saling berbeda nyata ( $p < 0,05$ ). Adapun nilai pencernaan energi P3 (97,839%) berbeda nyata ( $p < 0,05$ ) dengan P0 (97,012%), P1 (96,575%), P2 (97,200%), dan P4 (96,695%) sedangkan perlakuan P2 (97,200%) dan P4 (96,695%) tidak berbeda nyata ( $p > 0,05$ ) dengan P0 (97,012%).

## SUMMARY

**ZAKIYATUSSANY. Utilization of Pineapple Core Enzyme in Tambaqui (*Colossoma macropomum*) Commercial Feed to Digestibility of Crude Protein and Energy. Academic Advisor : Agustono, Ir., M.Kes. and Prof. Dr. Mirni Lamid, drh., M.P.**

Tambaqui is a species of fish that has a high survival rate (90%), the production process isn't affected by the season, fast growth, economical, can be maintained with high stocking densities, resistant to disease, and is easy to be cultured. Therefore, the demand for tambaqui continues to increase. One of effort to increase the production of tambaqui is to improve the quality of feed. The quality of feed can be improved by adding the pineapple core enzyme in the feed. The highest bromelain enzyme activity is found in pineapple core at 0,695-1,081 U/ml. Bromelain enzymes can hydrolyze proteins into amino acids, act as catalysts in cells, contain thiamine that act in the breakdown of glucose into energy and manganese that act in the breakdown of glucose into energy so as to increase the digestibility of proteins and energy. Therefore, the digestibility of crude protein and energy in the feed that is added to the pineapple core enzyme is necessary to know.

The study aims to determine the effect of the utilization of pineapple core enzymes in tambaqui commercial feed to the digestibility of crude protein and energy. The study was held on November to December 2019 with using completely randomized design (CRD), that consisted of 5 treatments including P0 (commercial feed 100% + pineapple core enzymes 0%), P1 (commercial feed 100% + pineapple core enzymes 0,75%), P2 (commercial feed 100% + pineapple core enzymes 1,5%), P3 (commercial feed 100% + pineapple core enzymes 2,25%), P4 (commercial feed 100% + pineapple core enzymes 3%) with 4 replication in each treatment. The data obtained were analyzed using analysis of variance (ANOVA) and continued with the DMRT (Duncan Multiple Range Test) on the digestibility of crude protein and energy because it showed a significantly different effect ( $p < 0,05$ ).

The results of this study were digestibility value of crude protein in each treatment : P0 (94,968%), P1 (95,713%), P2 (96,524%), P3 (97,419%), and P4 (96,135%) were significantly different from each other ( $p < 0,05$ ). As for the energy digestibility value of P3 (97,839%) was significantly different ( $p < 0,05$ ) with P0 (97,012%), P1 (96,575%), P2 (97,200%), and P4 (96,695%) while P2 (97,200%) and P4 (96,695%) weren't significantly different ( $p > 0,05$ ) with P0 (97,012%).