

**RINGKASAN**

**Suplementasi  $\beta$ -Mannanase pada Pakan Yang Mengandung Bungkil Inti Sawit  
terhadap Produktivitas dan Pembiayaan Pakan Ayam Petelur**

Bungkil inti sawit merupakan limbah industri kelapa sawit yang tergolong sebagai bahan pakan ternak oleh FAO. Keberadaannya selain murah memiliki manfaat sebagai sumber energi dan kaya akan protein. Namun, keberadaannya yang murah masih diragukan untuk aplikasinya khususnya pada hewan monogastrik dikarenakan adanya mannan sebagai polisakarida utama yang berasal dari dinding sel buah sawit. Dalam aplikasinya, mannan dapat diaplikasikan bersamaan dengan enzim  $\beta$ -mannanase yang dapat mendegradasi mannan sehingga dapat meningkatkan efisiensi pakan.

Penelitian ini bertujuan untuk mengetahui pengaruh bungkil inti sawit dan bungkil inti sawit yang dikombinasi dengan  $\beta$ -mannanase terhadap *feed intake*, *feed cost*, *hen day production*, *egg weight* dan *mortality*.

Ayam petelur dengan strain Hy-Line sebanyak 5000 ekor dipelihara di dalam kandang opened-house hingga umur 80 minggu. Ayam dipisah menjadi 5 kelompok besar berdasarkan perbedaan perlakuan yaitu P0: kontrol yang hanya diberikan pakan normal, P1: 7% BIS dari berat pakan normal yang diberikan tanpa  $\beta$ -Mannanase, P2: 14% BIS dari berat pakan normal yang diberikan tanpa  $\beta$ -Mannanase, P3: 7% BIS dari berat pakan normal yang diberikan  $\beta$ -Mannanase,

dan P4: 14% BIS dari berat pakan normal yang diberikan  $\beta$ -Mannanase. Pada setiap minggu hingga minggu ke-88 parameter dicatat dan kemudian dianalisa.

Hasil menunjukkan bahwasanya kombinasi  $\beta$ -Mannanase dengan BIS 7% dan BIS 7% tanpa kombinasi dapat menurunkan feed intake pada ayam petelur. Kombinasi  $\beta$ -Mannanase dengan BIS 14% dapat menurunkan hen day production dan BIS 7% tanpa kombinasi tidak dapat memengaruhi hen day production pada ayam petelur. Kombinasi  $\beta$ -Mannanase dengan BIS 7% dan BIS 7% tanpa kombinasi tidak dapat memberikan pengaruh terhadap *Mortality Rate* pada ayam petelur. Kombinasi  $\beta$ -Mannanase dengan BIS 14% tidak dapat memberikan pengaruh pada egg weight dan BIS 7% tanpa kombinasi dapat menurunkan egg weight pada ayam petelur. Kombinasi  $\beta$ -Mannanase dengan BIS 7% dan BIS 7% tanpa kombinasi dapat menekan aspek pembiayaan pakan pada pemeliharaan ayam petelur.

SUMMARY

**$\beta$ -Mannanase Supplementation in Ration with Palm Kernel Meal on  
Productivity and Feed Cost of Laying Hen Farming**

Palm Kerel Meal is an agricultural waste of palm industry which has been categorized in animal feed group by FAO. Alongside its cheapness, it is a source of energy and high of protein. However, its cheapness is still being doubted in application especially for monogastric as the mannan content plays as main polysaccharide derived from palm cell wall. In application, mannan can be applied together with an exogenous enzyme  $\beta$ -mannanase which is able to degrade mannan so as to increase feed efficiency.

This research aims to observe the influence of palm kernel meal and palm kernel meal combined with  $\beta$ -mannanase towards *feed intake, feed cost, hen day production, egg weight dan mortality*.

Laying hens of Hy-Line strain by 5000 individuals were reared within opened-house cage system until 80 weeks of old. All of the population were divided into 5 groups based on various treatments which are P0: Control group with normal feed formulation, P1: 7% PKM without  $\beta$ -Mannanase, P2: 14% PKM without  $\beta$ -Mannanase, P3: 7% PKM with  $\beta$ -Mannanase, dan P4: 14% PKM with  $\beta$ -Mannanase. For every week until week 88, all of the variables were recorded and then analysed.

The result shows that the combination between  $\beta$ -Mannanase and PKM 7% as well as PKM 7% only without combination can significantly decrease feed intake on laying hens. The combination between  $\beta$ -Mannanase and PKM 14% as well as PKM 7% only without combination can affect significantly hen day production on laying hens. The combination between  $\beta$ -Mannanase and PKM 7% as well as PKM 7% only without combination cannot *Mortality Rate* of all laying hens population. The combination between  $\beta$ -Mannanase and PKM 14% as well as PKM 7% only without combination can significantly decrease egg weight in laying hens. The combination between  $\beta$ -Mannanase and PKM 7% as well as PKM 7% only without combination can suppress the aspect of feed cost during farming.

**β-MANNANASE SUPPLEMENTATION IN RATION WITH PALM  
KERNEL MEAL ON PRODUCTIVITY AND FEED COST OF LAYING  
HEN FARMING**

Dimas Wicaksana

**ABSTRACT**

The aim of this study was to observe the effectivity of palm kernel meal (PKM) and its combination enzyme β-mannanase in ration. The population of laying hens was 5000 in opened-house system reared until 80 weeks of old. The population was divided into 5 groups of treatments which are P0: Control group with normal feed formulation, P1: 7% PKM without β-Mannanase, P2: 14% PKM without β-Mannanase, P3: 7% PKM with β-Mannanase, and P4: 14% PKM with β-Mannanase. The pkm and its combination can effectively reduce the feed intake and feed cost without decreasing the HDP in the same value of PKM. However, HDP can be reduced by certain PKM percentage due to the lower energy absorption and impact negatively the egg weight. Mortality rate was not affected and remained up of standard. The pkm and its combination can decrease significantly feed intake, feed cost, HDP and EW but not mortality rate.

**Key words:** PKM, β-Mannanase, Laying hen.