

## RINGKASAN

### Penambahan Fermentasi Tepung Daun Kelor (*Moringa oleifera*) pada Pakan Komersial terhadap Performans dan Analisis Usaha Itik Petelur

Budidaya itik petelur di Kabupaten Sidoarjo berada pada rentabilitas kategori rendah yaitu 36,15% karena hanya mampu memproduksi telur itik harian dengan rata-rata sebanyak 45,5% (Budi dkk, 2015).

Proses pembuatan telur pada unggas memerlukan protein dan energi (Brand *et. al.*, 2004). Tepung daun kelor dapat dengan mudah ditemukan di Indonesia, sediaan tepungnya memiliki protein 18,6170% yang sesuai dengan standart SNI yaitu 17% (Badan Standarisasi Nasional, 2017), akan tetapi tepung daun kelor memiliki serat kasar yang tinggi, sehingga perlu difermentasikan.

Bakteri selulolitik pada proses fermentasi dapat menghasilkan enzim selulase yang berfungsi menghidrolisis selulosa menjadi glukosa (Suprpto, 2012), sehingga dapat mudah dicerna oleh unggas dan meningkatkan energi (Suprpto, 2012; Joyce, 2013). Bakteri proteolitik pada proses fermentasi mampu meningkatkan protein kasar, karena menghasilkan enzim protease (Kosim dan Putra, 2009), enzim ini dapat memecah protein menjadi polipeptida lalu menjadi asam amino yang dimanfaatkan oleh mikroba untuk memperbanyak diri. Meningkatnya mikroba dapat meningkatkan protein kasar karena mikroba ini bersel tunggal (Wuryantoro, 2006 dalam Priskila, 2007).

Penelitian ini diharapkan mampu meningkatkan protein kasar dan energi dalam pakan komersial, sehingga tujuan dari penelitian ini untuk mengetahui potensi penambahan fermentasi tepung daun kelor pada pakan komersial terhadap performa dan analisis usaha itik petelur.

Itik petelur sebanyak 60 ekor diacak kedalam empat perlakuan yaitu P0, P1, P2 dan P3 dengan lima kali ulangan, masing-masing ulangan terdiri dari 3, adaptasi kandang dan pakan dilakukan 2 minggu, evaluasi dilakukan selama 3 minggu dengan P0 0% fermentasi tepung daun kelor, P1 0,5%, P2 1% dan P3 1,5% per 100% pakan komersial.

Kesimpulan dari penelitian ini bahwa penambahan fermentasi tepung daun kelor 1% terhadap pakan komersial dapat menaikkan konsumsi pakan, berat telur, *Hen Day Production* (HDP) dan menurunkan *Feed Conversion Ratio* (FCR). Berdasarkan analisis usaha dengan *Contribution Margin* (CM) penambahan fermentasi tepung daun kelor layak.

## SUMMARY

### **The Addition of The Fermented Moringa Leaf Flour (*Moringa oleifera*) in Commercial Feed on The Performance and Economic Analysis of Laying Duck**

Laying duck farming in Sidoarjo was in the low category profitability (36.15%) because it was only able to produce daily duck eggs with an average of 45.5% (Budi et al, 2015).

The process of making eggs in poultry requires protein and energy (Brand et al., 2004). Moringa leaf flour can easily be found in Indonesia, its flour preparation has 18.6170% protein which is following SNI standard of 17% (National Standardization Agency, 2017), but Moringa leaf flour has high crude fiber, so it needs to be fermented.

Cellulolytic bacteria in the fermentation process can produce cellulase enzymes which function to hydrolyze cellulose into glucose (Suprpto, 2012), so that it can be easily digested by poultry and increase energy (Suprpto, 2012; Joyce, 2013). Proteolytic bacteria in the fermentation process are able to increase crude protein, because they produce protease enzymes (Kosim and Putra, 2009), this enzyme can break down proteins into polypeptides and then into amino acids which are used by microbes to multiply themselves. The increase in microbes can increase crude protein because these microbes are single-celled (Wuryantoro, 2006 in Priskila, 2007).

This study is expected to increase crude protein and energy in feed commercial, so the aims of this study to assess the potential addition of Moringa leaf flour fermentation on commercial feed on performance and economic analysis laying ducks.

60 laying ducks were randomized into four treatments namely P0, P1, P2 and P3 with five replications, each replication consisted of 3, cage and feed adaptation were carried out for 2 weeks, the evaluation was carried out for 3 weeks with P0 0% flour fermentation Moringa leaves, P1 0.5%, P2 1% and P3 1.5% per 100% commercial feed.

The conclusion of this study is that the addition of 1% fermented Moringa leaf flour to commercial feed can increase feed consumption, egg weight, Hen Day Production (HDP) and reduce Feed Conversion Ratio (FCR). Based on economic analysis with Contribution Margin (CM) the addition of fermented Moringa leaf flour is feasible.

**PENAMBAHAN FERMENTASI TEPUNG DAUN KELOR (*Moringa oleifera*)  
PADA PAKAN KOMERSIAL TERHADAP PERFORMANS DAN ANALISIS  
USAHA ITIK PETELUR**

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**ABSTRACT**

This study aims to determine the potential addition of fermented Moringa leaf flour in commercial feed on the performance and economic analysis of laying duck. 60 laying ducks were randomized into four treatments namely P0, P1, P2 and P3 with five replications, each replication consisted of 3, cage and feed adaptation were carried out for 2 weeks, the evaluation was carried out for 3 weeks with P0 0% flour fermentation Moringa leaves, P1 0.5%, P2 1% and P3 1.5% per 100% commercial feed. The conclusion of this study is that the addition of 1% Moringa leaf flour fermentation to commercial feed can increase feed consumption, egg weight, Hen Day Production (HDP) and reduce Feed Conversion Ratio (FCR). Based on economic analysis with Contribution Margin (CM) the addition of fermented Moringa leaf flour is feasible.

**Key words:** Fermented Moringa leaf flour, laying duck farming, laying duck performance